

The  
***Williams***  
Dictionary  
of  
Biomaterials

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LIVERPOOL UNIVERSITY PRESS

**abcess**

localised collection of pus.

*noun*, medicine

Black's Medical

**abdomen**

that part of the body lying between the thorax and the pelvis, and containing the abdominal cavity and viscera.

*noun*, anatomy

Dorland Medical

**abdominal cavity** *peritoneal cavity*

in vertebrates, that part of the coelom containing the viscera.

*noun*, medicine

Larousse Science

**abduct**

to move a part of the body - for example, a limb - away from the mid-line.

*verb*, medicine

Black's Medical

**abduction**

the action of pulling a limb or part of the body away from the mid-line.

*noun*, medicine

Larousse Science

**abductor**

any muscle that draws a limb or part away from the median axis by contraction.

*noun*, medicine

Larousse Science

**ablation**

removal of any part of the body by a surgical operation.

*noun*, surgery

Black's Medical

**ablephary**

congenital partial or total absence of the eyelids, or of the palpebral fissure.

*noun*, medicine

Heinemann Dental

**abortifacient**

any agent which causes artificial abortion.

*noun*, medicine

Larousse Science

**abrade**

to wear away by friction.

*verb*, general

Heinemann Dental

**abrasion**

1. a rubbed-away area of the surface covering of the body, i.e. of skin or of mucous membrane.

*noun*, medicine

Larousse Science

2. the removal of surface material from any solid through the frictional action of another solid, a liquid, or a gas or combination thereof.

*noun*, engineering

McGraw-Hill Engineering

3. surface damage due to roughening or scratching.

*noun*, engineering

Larousse Science

**abrasive**

hard substance, used for the removal of material by scratching and grinding.

*noun*, general

Larousse Science

**abrasive wear**

mechanism of wear due to the presence in one or both surfaces of hard areas, or to hard particles trapped between them.

*noun*, engineering

Larousse Science

**ABS plastic**

any of a class of plastics based on acrylonitrile-butadiene-styrene copolymers.

*noun*, polymer science

Oxford Science

**absorb**

to take in or assimilate, as to take up substances into or across tissues.

*verb*, medicine

Dorland Medical

**absorbable suture**

suture prepared from natural tissue or synthetic polymer that is capable of being degraded and metabolised by living mammalian tissue.

*noun*, surgery

Szycher's Biomaterials

**absorbance**

the ratio of the intensity of light incident on a sample to that transmitted by it.

*noun*, physics

Larousse Science

**absorption**

uptake of substances into or across tissues.

*noun*, medicine

Dorland Medical

**abut**

to adjoin and touch; to be in contact with.

*verb*, general

Heinemann Dental

**abutment**

1. supporting structure.

*noun*, general

2. tooth or tooth root used to support a fixed or removable appliance or partial denture.

*noun*, dentistry

Heinemann Dental

**accelerated ageing** (accelerated aging)

hastening the deterioration of a product by a laboratory procedure in order to determine long-range storage and use characteristics.

*noun*, engineering

McGraw-Hill Engineering

**accelerator**

1. agent or apparatus that increases the rate at which something occurs or progresses.

*noun*, general

Dorland Medical

2. additive used to increase the rate of cure of a resin.

*noun*, polymer science

## ASTM

Notes: An accelerator may be a catalyst, in which case it does not change composition. If it does change composition it will not qualify as a catalyst.

## acceptable daily intake ADI.

estimate of the largest amount of a substance (e.g. a chemical) to which a person can be exposed on a daily basis that is not anticipated to result in adverse effects.

*noun*, toxicology

CEQ/OECD

Notes: Usually expressed in milligrams per kilogram per day (mg/kg/day).

## acceptable risk

a very small risk of a seriously adverse occurrence, where the conduct of life is not affected, taking into account the circumstances and the effectiveness of any precaution taken.

*noun*, general

Williams

Notes: Definition currently (1998) under discussion in IPCS/OECD project on harmonisation of chemical hazard/risk assessment terminology.

## accessory

1. that which affords aid to another similar and generally more important thing.

*noun*, general

Dorland Medical

2. article which, whilst not being a medical device, is intended specifically by its manufacturer to be used together with a medical device to enable that medical device to be used in accordance with its intended purpose.

*noun*, regulatory affairs

EU Directive

## accommodation

the natural alteration of the effective focal length of the eye in order to see objects distinctly at varying distances.

*noun*, ophthalmology

Larousse Science

## accretion

a deposit of foreign matter adhering to a surface or accumulating in a cavity.

*noun*, medicine

Heinemann Dental

## accuracy

1. freedom from error.

*noun*, general

2. degree of conformity to a standard.

*noun*, statistics

Longmans

## acellular

not cellular in structure.

*adjective*, anatomy

Dorland Medical

## acetabular cup

that part of a total hip replacement that replaces the acetabulum and articulates with the femoral head.

*noun*, medical device technology

Williams

## acetabular fossa

a non-articular area in the floor of the acetabulum.

*noun*, anatomy

Larousse Science

## acetabuloplasty

repair of the acetabulum with prosthesis.

*noun*, surgery

Dorland Medical

## acetabulum

cup-shaped socket on the pelvis in which rests the head of the femur.

*noun*, anatomy

Black's Medical

## acetal

term applied to compounds of the type

$RCH(OR')_2$ , where R and R' are organic radicals and R may be hydrogen.

*noun*, chemistry

Larousse Science

## acetal resin polyformaldehyde resin, polyoxymethylene

one of a family of polymers, generally referred to as polyoxymethylenes or polyacetals, produced by the addition polymerisation of aldehydes through the carbonyl groups.

*noun*, polymer science

Szycher's Biomaterials

## acetone

$CH_3COCH_3$ , a flammable, colourless, volatile liquid with solvent properties and characteristic odour.

*noun*, chemistry

Dorland Medical

## acetyl co-enzyme A acetyl CoA

intermediate in the tricarboxylic acid cycle and the chief precursor of lipids and steroids.

*noun*, medicine

Dorland Medical

## acetyl group ethanoyl group

$CH_3CO-$ ; the radical of acetic acid.

*noun*, chemistry

Larousse Science

## acetylcholine Ach

acetic acid ester of the organic base choline, one of the substances which mediates the transmission of nerve impulses.

*noun*, medicine

Black's Medical

## acetylcholinesterase cholinesterase AchE

enzyme that hydrolyses the neurotransmitter acetylcholine to choline and acetate.

*noun*, biology

Oxford Science

## acetylsalicylic acid

$C_6H_4(OCOCH_3)COOH$ . Substance used in medical and veterinary practice as an analgesic, antipyretic and anti-rheumatic, the active component of aspirin.

*noun*, pharmacology

Larousse Science

## Achilles tendon

thick tendon that joins the calf muscles to the heel

bone (calcaneum).  
*noun*, anatomy  
Black's Medical

**achondrogenesis**

hereditary disorder characterised by hypoplasia of bone, resulting in markedly shortened limbs, the head and trunk being normal.  
*noun*, medicine  
Dorland Medical

**achondroplasia**

hereditary, congenital disorder of cartilage formation, leading to a type of dwarfism.  
*noun*, medicine  
Dorland Medical

**acicular**

needle-shaped.  
*adjective*, general  
Larousse Science

**acid**

substance which tends to lose a proton or to accept an electron pair, in particular a compound that dissociates in water to produce hydrogen ions.  
*noun*, chemistry  
Larousse Science

**acid etching**

process in which an acid solution is applied to a selected area of a tooth surface to demineralise the enamel partially and so provide a key for the retention of certain types of filling material.  
*noun*, dentistry  
Heinemann Dental

**acid phosphatase**

widely occurring enzyme, particularly concentrated in lysosomes, that hydrolyses  $\beta$ -glycerophosphate.  
*noun*, biology  
Williams

**acidity**

the quality of being acid; the power to unite with positively charged ions or with basic substances.  
*noun*, chemistry  
Dorland Medical

**acidogenic**

acid-forming.  
*adjective*, chemistry  
Heinemann Dental

**acidosis**

pathologic condition resulting from accumulation of acid in, or loss of base from, the body.  
*noun*, medicine  
Dorland Medical

**aciduria**

excess of acid in the urine.  
*noun*, medicine  
Dorland Medical

**acinar cell**

any of the cells lining an acinus, especially the zymogen-secreting cells of the pancreatic acini.  
*noun*, anatomy  
Dorland Medical

**acinus**

smallest unit of a multilobular gland, such as the pancreas.  
*noun*, anatomy  
Oxford Science

**acoustic emission**

non-destructive testing method for investigating deformation and failure processes in materials by the signals generated when the elastic waves released by them are detected at the materials' surface.  
*noun*, engineering  
Larousse Science

**acoustic microscopy**

microscopy that uses acoustic waves at microwave frequencies.  
*noun*, material science  
Larousse Science

**acquired**

incurred as a result of factors acting from or originating outside the organism; not inherited.  
*adjective*, medicine  
Dorland Medical

**acquired immune response**

immunity mediated by lymphocytes and characterised by antigen-specificity and memory.  
*noun*, immunology  
Roitt Immunology

**acquired immunity**

immunity occurring as a result of prior exposure to a foreign substance, an infectious agent or its antigens, or of a passive transfer of antibody or immune lymphoid cells.  
*noun*, immunology  
Dorland Medical

**acquired immunodeficiency syndrome AIDS**

an epidemic, transmissible retroviral disease caused by infection with the human immunodeficiency virus.  
*noun*, medicine  
Dorland Medical

**acquired pellicle**

acellular film of salivary proteins deposited on the clean tooth surface immediately after eruption.  
*noun*, dentistry  
Heinemann Dental

**acromegaly**

abnormal enlargement of the extremities of the skeleton caused by hypersecretion of pituitary growth hormone after maturity.  
*noun*, medicine  
Dorland Medical

**acromion**

ventral process of the spine of the scapula.  
*noun*, anatomy  
Dorland Medical

**acromioplasty**

surgical removal of the anterior hook of the acromion to relieve mechanical compression of the rotator cuff during movement of the glenohumeral joint.

*noun*, surgery  
Dorland Medical

**acrylamide**

CH<sub>2</sub>CHCONH<sub>2</sub>; crystalline solid capable of rapid polymerisation, copolymerisation, or cross-linking with other reactants that contain vinyl ligands.

*noun*, chemistry  
Szycher's Biomaterials

**acrylamide gel**

clear gel formed by casting acrylamide monomer in the form of sheets or cylinders and polymerisation *in situ*, used for the electrophoretic separation of proteins and RNA.

*noun*, biology  
Larousse Science

**acrylic acid**

CH<sub>2</sub>CHCOOH, colourless, unsaturated acid that polymerises readily, used in the synthesis of acrylic resins.

*noun*, chemistry  
Szycher's Biomaterials

**acrylic bone cement**

material made from polymethylmethacrylate or copolymers containing polymethylmethacrylate intended for use in arthroplastic procedures of the hip, knee, and other joints for the fixation of prosthetic implants to the living bone.

*noun*, biomaterials science  
Szycher's Biomaterials

**acrylic bone cement, doughing time**

the time after commencement of mixing at which the bone cement mixture ceases to adhere to a standard probe.

*noun*, biomaterials science  
ASTM

**acrylic bone cement, exothermic temperature**

maximum temperature of the bone cement mixture due to self-curing in a standard mould.

*noun*, biomaterials science  
ASTM

**acrylic bone cement, setting time**

the time after commencement of bone cement mixing at which the temperature of the curing mass equals the average of the maximum and ambient temperatures.

*noun*, biomaterials science  
ASTM

**acrylic ester**

ester of acrylic acid, or any structural derivative of acrylic acid.

*noun*, chemistry  
Szycher's Biomaterials

**acrylic plastic** *acrylic resin*

material based on polymers made with acrylic acid or a structural derivative of acrylic acid, particularly those obtained from the polymerisation of esters of acrylic acid (H<sub>2</sub>C:CHCOOH), or methacrylic acid (H<sub>2</sub>C:C(CH<sub>3</sub>)COOH).

*noun*, polymer science  
Williams

**acrylonitrile**

H<sub>2</sub>C:CHCN, an intermediate or raw material used in the manufacture of synthetic acrylic fibres and rubbers.

*noun*, polymer science  
Larousse Science

**acrylonitrile-butadiene-styrene polymer** **ABS**

plastic based on polystyrene but containing two rubber modifiers, polybutadiene and polyacryoube, which confer considerable toughness.

*noun*, polymer science  
Brett-Strong Plastics

**actin**

muscle protein localised in the I band of the myofibrils, responsible, along with myosin, for contraction and relaxation of muscle.

*noun*, biology  
Dorland Medical

**actin filament**

one of the thin contractile myofilaments in a myofibril.

*noun*, anatomy  
Dorland Medical

**action potential**

potential produced in a nerve by a stimulus.

*noun*, biology  
Larousse Science

**activated**

term applied to lymphocytes or macrophages which have undergone differentiation from a resting state, and have acquired new capacities such as the ability to secrete lymphokines, or in the case of macrophages, increased ability to kill and digest microbes.

*adjective*, immunology  
Larousse Science

**activated carbon**

carbon obtained from vegetable matter by carbonisation in the absence of air, preferably in a vacuum, that has the property of adsorbing large quantities of gases.

*noun*, chemistry  
Larousse Science

**activated partial thromboplastin time** **APTT**, **aPTT**

the period required for clot formation in recalcified blood plasma after contact activation and the addition of platelet substitutes.

*noun*, medicine  
Dorland Medical

**activation**

1. act or process of rendering active.

*noun*, general

2. process by which the central nervous system is stimulated into activity through the mediation of the reticular activating system.

*noun*, biology

3. transformation of a proenzyme into an active enzyme by the action of a kinase or another enzyme.

*noun*, biology  
Dorland Medical

**activation energy**

1. excess energy over that of the ground state which an atomic system must acquire to permit a particular process.

*noun*, chemistry

2. energy required for a thermally activated physical or chemical process.

*noun*, chemistry

Larousse Science

**activator**

1. substance that makes another substance active or that renders an inactive enzyme capable of exerting its proper effect.

*noun*, biology

2. substance that stimulates the development of a specific structure in the embryo.

*noun*, embryology

Dorland Medical

3. myofunctional appliance used in orthodontics.

*noun*, dentistry

Heinemann Dental

**active device**

medical device that depends for its operation on a source of energy other than energy generated by the human body or gravity.

*noun*, regulatory affairs

Canadian Medical Devices

Notes: A medical device that transmits or withdraws energy or a substance to or from a patient without substantially altering the energy or the substance is not an active device.

**active device for diagnosis**

any active medical device, whether used alone or in combination with other medical devices, intended to supply information for detecting, diagnosing, monitoring or treating physiological conditions, states of health, illnesses or congenital deformities.

*noun*, regulatory affairs

EU Directive

**active diagnostic device**

an active device that, whether used alone or in combination with another medical device, is intended to supply information for the purpose of detecting, monitoring or treating a physiological condition, state of health, illness or congenital deformity.

*noun*, regulatory affairs

Canadian Medical Devices

**active implantable medical device**

any active medical device which is intended to be totally or partially introduced, surgically or medically, into the human body or by medical intervention into a natural orifice, and which is intended to remain after the procedure.

*noun*, regulatory affairs

EU Directive

**active medical device**

1. any medical device the operation of which depends on a source of electrical energy or any source of power other than that directly generated by the human body or gravity and which acts by converting this energy.

*noun*, regulatory affairs

Notes: Medical devices intended to transmit energy, substances or other elements between an active medical device and the

patient, without any significant change, are not considered to be active medical devices.

2. any medical device relying for its functioning on a source of electrical energy or any source of power other than that directly generated by the human body or gravity.

*noun*, regulatory affairs

EU Directive

**active moiety**

molecule or ion, excluding those appended portions of the molecule that cause the drug to be an ester, salt (including a salt with hydrogen or coordination bonds), or other non-covalent derivative (such as a complex, chelate, or clathrate) of the molecule, that is responsible for the physiological or pharmacological action of a drug.

*noun*, pharmacology

CFR

**active therapeutic device**

an active device that, whether used alone or in combination with another medical device, is intended to supply information for the purpose of detecting, monitoring or treating a physiological condition, state of health, illness or congenital deformity.

*noun*, regulatory affairs

Canadian Medical Devices

**active therapeutical device**

any active medical device, whether used alone or in combination with other medical devices, intended to support, modify, replace or restore biological functions or structures, with a view to treatment or alleviation of an illness, injury or handicap.

*noun*, regulatory affairs

EU Directive

Notes: Essentially synonymous with active therapeutic device.

**acute**

having severe symptoms and a short course.

*adjective*, medicine

Dorland Medical

**acute inflammation**

inflammation, usually of sudden onset, in which vascular and exudative processes predominate.

*noun*, medicine

Dorland Medical

**acute phase protein**

one of a group of serum proteins, mostly produced in the liver, which rapidly change in concentration during the initiation of an inflammatory response.

*noun*, immunology

Roitt Immunology

**acute systemic toxicity**

adverse effects that involve the entire body and which become manifest within 24 hours following exposure to a material, product or any of the their derivatives.

*noun*, toxicology

Williams

**acute systemic toxicity test**

test to estimate the potential harmful effects of either single or multiple exposures, during a period of less than 24 hours, to devices, materials and/or

their extracts, in an animal model.

*noun*, toxicology

ISO

Notes: These tests are appropriate where contact allows potential absorption of toxic leachables and degradation products.

**acute toxicity**

adverse effects occurring after administration of a single dose or of multiple doses given within 24 hours of a test sample.

*noun*, toxicology

ISO

**ad libitum ad lib**

as desired.

*adverb*, biology

Williams

Notes: Used in the context of unlimited supply of food and drink to laboratory animals.

**adaptation**

1. the correct packing of a dental filling material into a prepared cavity.

*noun*, dentistry

2. the correct fitting of a denture.

*noun*, dentistry

Heinemann Dental

**addition polymer**

polymer formed by the simple combination of monomer units, without evolution of low molecular weight by-products.

*noun*, polymer science

Szycher's Biomaterials

**addition polymerisation** (addition polymerization)

*chain polymerisation*

polymerisation process in which monomers are directly linked together without the splitting off of water or other molecules and which involves the opening of a double bond.

*noun*, polymer science

ASTM

**additive**

1. any substance added to a food, raw material or recipe to modify flavour, colour or texture or to keep properties or nutritional content.

*noun*, general

Larousse Science

2. substance added to polymers to alter certain properties.

*noun*, polymer science

Szycher's Biomaterials

**adduct**

1. compound formed by an addition reaction.

*noun*, chemistry

Oxford Science

2. to draw toward the median plane or (in the digits) toward the axial line of a limb.

*verb*, medicine

Dorland Medical

**adductor**

muscle that draws a limb or other part of the body inwards, or towards another part.

*noun*, anatomy

Larousse Science

**adenocarcinoma**

malignant growth of glandular tissue.

*noun*, medicine

Black's Medical

**adenoma**

benign epithelial tumour in which the cells form recognisable glandular structures or in which the cells are derived from glandular epithelium.

*noun*, medicine

Dorland Medical

**adenopathy**

enlargement of glands, especially of the lymph nodes.

*noun*, medicine

Dorland Medical

**adenosine**

purine nucleoside consisting of adenine and ribose.

*noun*, biology

Dorland Medical

**adenosine diphosphate ADP**

a nucleotide, the 5' - pyrophosphate of adenosine, involved in energy metabolism, produced by the hydrolysis of adenosine triphosphate (ATP) and converted back to ATP by the metabolic processes oxidative phosphorylation and substrate-level phosphorylation.

*noun*, biology

Dorland Medical

**adenosine triphosphate ATP**

a nucleotide that is of fundamental importance as a carrier of chemical energy in all living organisms.

*noun*, biology

Oxford Science

**adhesion**

1. physiochemical state by which two surfaces are held together by interfacial forces, which may consist of covalent forces, mechanical interlocking, or a combination of both.

*noun*, material science

Szycher's Biomaterials

2. phenomenon by which the bonding of materials is achieved with adhesives (glues, cements, binders etc).

*noun*, material science

Larousse Science

3. abnormal union of two normally separate tissues, occurring as a result of inflammation, injury or surgery.

*noun*, medicine

Black's Medical

4. tissue that forms an abnormal union between two normally separate part of the body.

*noun*, medicine

Heinemann Dental

**adhesion molecules**

cell surface proteins involved in cell-cell contact, especially between leucocytes and other leucocytes, between leucocytes and endothelial and epithelial cells, and between cells and their extracellular matrix.

*noun*, biology

Larousse Science

**adhesive**

1. substance used for joining surfaces together.

*noun*, general

Oxford Science

2. characterised by adhesion.

*adjective*, general

Heinemann Dental

**adhesive bonding**

fastening together of two or more solids by the use of glue, cement or other adhesive.

*noun*, engineering

McGraw-Hill Engineering

**adhesive failure**

rupture of an adhesive bond, such that the separation of two components is determined to originate at an adhesive-substrate interface.

*noun*, material science

Szycher's Biomaterials

**adhesive strength**

the strength of an adhesive bond, usually measured as a force required to separate two objects of standard bonded area, by either shear or tensile stress.

*noun*, material science

McGraw-Hill Engineering

**adhesive wear**

mechanism of wear due to the joining together and subsequent shearing off of the contact areas between two surfaces sliding over one another.

*noun*, engineering

Larousse Science

**adipocyte**

fat cell.

*noun*, biology

Dorland Medical

**adipose**

fatty.

*adjective*, biology

Heinemann Dental

**adipose tissue**

a loose variety of fibrous tissue, in the meshes of which lie cells, each of which is distended by collections of fat.

*noun*, medicine

Black's Medical

**adjustable band**

orthodontic band that has some form of screw or other mechanism whereby its size can be altered.

*noun*, dentistry

Heinemann Dental

**adjustment**

modification of a denture or appliance after it has been fitted in the mouth.

*noun*, dentistry

Heinemann Dental

**adjuvant**

1. assisting or aiding.

*adjective*, general

Dorland Medical

2. any substance which non-specifically enhances the immune response to antigen.

*noun*, immunology

Roitt Immunology

**adjuvant therapy**

therapy provided to enhance the effect of a primary therapy.

*noun*, medicine

IRB Guidebook

**adnexa**

appendage or accessory structure of an organ, as the appendages of the eye.

*noun*, medicine

Dorland Medical

**adrenal**

adjacent to the kidney.

*adjective*, anatomy

Dorland Medical

**adrenal cortex**

outer, firm layer comprising the larger part of the adrenal gland.

*noun*, anatomy

Dorland Medical

**adrenal gland**

one of two organs each situated on the upper end of a kidney which elaborate steroid hormones and epinephrine.

*noun*, medicine

Black's Medical

**adrenaline epinephrine**

the secretion of the adrenal medulla.

*noun*, medicine

Black's Medical

**adsorb**

to attract and retain another substance on the surface of a material.

*verb*, medicine

Dorland Medical

**adsorbent**

1. substance, either solid or liquid, on whose surface adsorption of another substance takes place.

*noun*, chemistry

Larousse Science

2. a material that has the ability to attract strongly other materials, substances or particles to its surface.

*noun*, material science

**adsorption**

formation of a layer of a gas, liquid, or solid on the surface of a solid or, less frequently, of a liquid.

*noun*, chemistry

Oxford Science

**adsorption isotherm**

relation between the amount of a substance adsorbed onto a surface and its pressure or concentration in solution, at constant temperature.

*noun*, chemistry

Larousse Science

**adventitia**

the outer coat of an organ or structure, especially the outer coat of an artery.

*noun*, anatomy  
Dorland Medical

**adventitious**

1. accidental or acquired; not natural or hereditary.  
*adjective*, medicine  
Dorland Medical
2. describing organs or other structures that arise in unusual positions.  
*adjective*, biology  
Oxford Science
3. relating to the superficial layers of the wall of a blood vessel.  
*adjective*, anatomy  
Larousse Science

**adverse effect**

1. change in morphology, physiology, growth development or life span of an organism which results in impairment of functional capacity or which increases susceptibility to the harmful effects of other environmental influences.  
*noun*, medicine  
Holland, 1996
2. undesirable and unintended, although not necessarily unexpected, result of therapy or other intervention.  
*noun*, clinical practice  
IRB Guidebook  
Notes: For example, headache following spinal tap or intestinal bleeding associated with aspirin therapy.

**adverse event**

any specific, clinically detectable episode, that is undesirable and unintended, which occurs as a result of a therapeutic or other intervention.  
*noun*, clinical practice  
Williams

**advisory notice**

notice issued to provide information and/or to advise on what action should be taken in the use, modification, disposal or return of a medical device.  
*noun*, regulatory affairs  
CEN

**aerobe**

micro-organism that lives and grows in the presence of free oxygen.  
*noun*, biology  
Dorland Medical

**aerobic**

living and growing in the presence of free oxygen.  
*adjective*, biology  
Larousse Science

**aetiology** (etiology)

study of causes, especially the causes of medical conditions.  
*noun*, medicine  
Oxford Science

**afferent**

conducting toward a centre or specific site of reference.  
*adjective*, general  
Dorland Medical

**afferent nerve**

any nerve that transmits impulses from the

periphery toward the central nervous system.  
*noun*, anatomy  
Dorland Medical

**affinity**

1. attraction; a tendency to seek out or unite with another object or substance.  
*noun*, general  
Dorland Medical
2. extent to which a compound or a functional group is reactive with a given reagent.  
*noun*, chemistry
3. strength of interaction or binding between antigen and antibody or between a receptor and its ligand.  
*noun*, immunology  
Larousse Science

**affinity chromatography**

type of adsorption chromatography in which ligands, coupled to the solid, stationary phase, have a specific affinity for the substance to be isolated.  
*noun*, biology  
Larousse Science

**agammaglobulinaemia** (agammaglobulinemia)

absence of all classes of immunoglobulins in the blood.  
*noun*, medicine  
Dorland Medical

**agar**

dried hydrophilic, colloidal polysaccharide extracted from various species of red algae.  
*noun*, biology  
Dorland Medical  
Notes: Used in solid culture media for bacteria and other micro-organisms, as a bulk laxative, in making emulsions, and as a supporting medium for immunodiffusion and immunoelectrophoresis.

**ageing** (aging)

1. process by which gradual structural changes occur with the passage of time, that are not due to disease or accident.  
*noun*, medicine  
Dorland Medical
2. slow deterioration in polymer products due to oxygen or ozone cracking, increase in crystallinity, relaxation of internal stress etc.  
*noun*, polymer science
3. stage of hardening in metal alloys producing an increase in strength and hardness, due to precipitation of second phase particles from supersaturated solid solution.  
*noun*, metallurgy  
Larousse Science

**agglutination**

1. the coalescing of small suspended particles to form larger masses, which are usually precipitated.  
*noun*, chemistry
2. the process whereby red blood cells, bacteria, or other small particles clump together, forming a visible precipitate.  
*noun*, biology  
Larousse Science  
Notes: Usually involves antibodies binding antigenic determinants present on the particles.

**agglutinin**

constituent of the blood plasma of one individual which causes agglutination by reacting with a specific receptor in the red cells of the blood of another individual.

*noun*, medicine  
Larousse Science

**aggregation**

1. massing or clumping of materials together.
2. clumped mass of material.

*noun*, chemistry  
Dorland Medical

**agnathia**

complete failure of development of the mandible or of the maxilla.

*noun*, embryology  
Heinemann Dental

**agonist**

1. prime mover.
2. drug that has an affinity for and stimulates physiological activity at cell receptors.

*noun*, pharmacology  
Dorland Medical

**agonistic muscle**

a muscle opposed in action by another muscle (the antagonist).

*noun*, anatomy  
Dorland Medical

**air embolism**

sudden blocking of a blood vessel due to air bubbles entering the veins after trauma or surgical procedures.

*noun*, medicine  
Dorland Medical

**airway**

medical device inserted into the pharynx through the mouth to provide a patent opening.

*noun*, medical device technology  
Szycher's Medical Devices

**airway connector**

device used to connect a breathing-gas source to a tracheal tube, tracheotomy tube or mask.

*noun*, medical device technology  
Szycher's Medical Devices

**alanine Ala**

a non-essential amino acid  $\text{CH}_3\text{C}(\text{NH}_2)\text{COOH}$  occurring in proteins and also free in plasma.

*noun*, biology  
Dorland Medical

**albicans**

white.  
*adjective*, general  
Dorland Medical

**albumin**

any protein that is soluble in water.

*noun*, biology  
Dorland Medical

Notes: This generic term distinguishes proteins that are soluble in water from those soluble in saline or other solvents.

Specific albumins are designated by their source, e.g. egg albumin and serum albumin.

**alcohol**

class of organic compound where one or more hydroxyl (OH) groups are present in a hydrocarbon molecule, with no more than one hydroxyl group attached to a single carbon atom.

*noun*, chemistry  
Szycher's Biomaterials

**alginate**

1. principal carbohydrate component, with their esters and metallic salts, of the brown seaweeds *Ascophyllum*, *Laminaria*, and *Macrocystis*.

*noun*, biology  
Larousse Science

2. any salt of alginic acid, especially the calcium, sodium or potassium salts.

*noun*, medicine  
Dorland Medical

Notes: Certain alginates have been used as foam, clot or gauze for absorbable surgical dressings, as materials for dental impressions and as vehicles for drug delivery.

**algorithm**

a set of rules which specify a sequence of actions to be taken to solve a problem.

*noun*, general  
Larousse Science

**alimentary canal**

musculomembranous digestive tube extending from the mouth to the anus.

*noun*, anatomy  
Dorland Medical

**aliphatic**

pertaining to a hydrocarbon that does not contain an aromatic ring.

*adjective*, chemistry  
Dorland Medical

**aliphatic ether**

any molecule containing the ether group and which does not contain an aromatic ring.

*noun*, chemistry  
Brett-Strong Plastics

**alkali metal**

one of the elements of Group 1 of the Periodic Table: lithium, sodium, potassium, rubidium, caesium and francium.

*noun*, chemistry  
Oxford Science

**alkaline earth metal**

one of the elements calcium, strontium, barium or radium, all divalent metals in Group 2 of the Periodic Table.

*noun*, chemistry  
Larousse Science

**alkaline phosphatase AP, ALP**

enzyme that catalyses the hydrolytic cleavage of inorganic phosphate from esters under alkaline conditions.

*noun*, biology  
Larousse Science

Notes: The enzyme is commonly conjugated with antibodies for use in indirect immunoassay; it catalyses a reaction which deposits dye at the site of the bound antibody.

**alkalinity**

extent to which a solution is alkaline.

*noun*, chemistry  
Larousse Science

**alkalosis**

decrease in hydrogen ion concentration in blood and tissue.

*noun*, medicine  
Larousse Science

**alkyd resin**

any polyester thermoset derived from glycerol and phthalic anhydride.

*noun*, polymer science  
Larousse Science

**alkyl**

general term for monovalent aliphatic hydrocarbon radicals.

*noun*, chemistry  
Larousse Science

**allele**

any variant of a polymorphic gene at a given genetic locus.

*noun*, genetics  
Roitt Immunology

**allelic exclusion**

phenomenon whereby, following successful rearrangement of one allele of an antigen receptor gene, rearrangement of the other parental allele is suppressed, thereby ensuring each lymphocyte expresses only a single specificity of antigen receptor.

*noun*, immunology  
Roitt Immunology

**allene**

one of a series of non-conjugated and di-olefinic hydrocarbons, consisting mostly of colourless liquids with strong garlic odour.

*noun*, chemistry  
Larousse Science

**allergen**

antigenic substance which provokes an allergic response.

*noun*, immunology  
Larousse Science

**allergic**

reacting in an abnormally sensitive manner to a substance.

*adjective*, medicine  
Larousse Science

**allergic contact sensitisation** (allergic contact sensitization)

allergic response involving immunological systems that have been activated by prior exposure.

*noun*, immunology  
ISO

Notes: There is often some confusion over the use of the terms sensitivity and sensitisation; this ISO definition should more correctly refer to sensitivity.

**allergy**

1. IgE-mediated hypersensitivity.

*noun*, immunology

**Roitt Immunology**

Notes: Includes asthma, eczema, hayfever and food allergy.

2. reaction of the body to a substance to which it has become sensitive, characterised by oedema, inflammation and destruction of tissue.

*noun*, medicine  
Larousse Science

**alloantigen** *isoantigen*

antigen existing in alternative forms, thus inducing an immune response when one form is transformed to members who lack it.

*noun*, immunology  
Williams

**allogeneic**

said of individuals of the same species, or cell lines, that are not genetically identical.

*adjective*, biology  
Larousse Science

**allograft** *homograft*

graft taken from another individual of the same species as the recipient.

*noun*, surgery  
ESB Consensus Conference I

**allomerism**

similarity in crystalline form between polymers with different chemical compositions.

*noun*, polymer science  
Szycher's Biomaterials

**alloplast**

foreign body used for implantation into tissue.

*noun*, medicine  
Dorland Medical

Notes: This generic term was used in the early days of reconstructive surgery. Due to the increased sophistication of biomaterials and the complexity of their classification, this term now has limited value and its use should be discontinued.

**allotropy**

existence of an element in two or more solid, liquid or gaseous forms.

*noun*, chemistry  
Larousse Science

**allotype**

an allelic variant of an antigen which, because it is not present in all individuals, may be immunogenic in those members of the same species which have a different version of the allele.

*noun*, immunology  
Roitt Immunology

**alloy**

1. mixture of atomic species exhibiting metallic properties and usually prepared by adding other metals or non-metals to solvent metal in the liquid state.

*noun*, metallurgy  
2. process of making an alloy.  
*verb*, metallurgy  
Larousse Science

**alloy steel**

steel to which elements not present in carbon steel have been added, or in which the content of manganese or silicon is increased above that in carbon steel.

*noun*, metallurgy  
Larousse Science

**allyl resin**

one of the polymers formed by the addition polymerisation of compounds containing the group ( $-\text{CH}_2\text{:CHCH}_2-$ ).

*noun*, polymer science  
Szycher's Biomaterials

**alternative complement pathway**

1. pathway of complement activation initiated by a variety of factors other than those initiating the classical pathway.

*noun*, immunology  
Dorland Medical

Notes: Activation of the alternative pathway is caused by polysaccharides of bacteria and yeast cell walls, fragments of plant cell walls, protozoa and some biomaterials.

2. activation pathway of complement involving components C3, Factor B, Factor D, and Properdin which, in the presence of a stabilising activator surface such as microbial polysaccharide, generate the alternative pathway C3 convertase C3bBb.

*noun*, immunology  
Larousse Science

Notes: This is a more detailed version of definition (1).

**alumina** *aluminium oxide*

aluminium oxide,  $\text{Al}_2\text{O}_3$ , a hard ceramic.

*noun*, material science  
Larousse Science

Notes: Used as highly crystalline ceramic, typically polycrystalline, in biomaterials applications such as total joint prostheses and dental implants. Also exists as the abrasive carborundum and, in single crystal form, as sapphire.

**aluminium** (aluminum) **Al**

Silver-white metallic element, at no. 13.

*noun*, chemistry  
Larousse Science

**aluminium alloy** (aluminum alloy)

alloy in which aluminium is the parent (i.e. predominant) metal.

*noun*, metallurgy  
Larousse Science

**aluminium bronze** (aluminum bronze)

copper-aluminium alloys which contain 4-11% aluminium, and may also contain up to 5% each of iron and nickel.

*noun*, metallurgy  
Larousse Science

**aluminium oxide** (aluminum oxide) *alumina*

$\text{Al}_2\text{O}_3$ , a hard ceramic.

*noun*, material science  
Larousse Science

**alumino-silicate**

any compound of alumina, silica and bases, with water of hydration in some cases.

*noun*, material science  
Larousse Science

Notes: Used in the form of glasses or glass-ceramics as components in the preparation of certain dental cements and filling materials.

**aluminosis**

pneumoconiosis due to the presence of aluminium-bearing dust in the lungs.

*noun*, medicine  
Dorland Medical

**alveolar**

relating to the alveolus.

*adjective*, dentistry  
Heinemann Dental

**alveolar arch**

the bow shape of the alveolar process of either the maxilla or the mandible.

*noun*, dentistry  
Heinemann Dental

**alveolar bone**

bone which normally contains a degree of porosity, particularly that bone within the mandible and maxilla in which tooth roots are located.

*noun*, biology  
Williams

**alveolar canal** *dental canal*

any one of the canals in the maxilla or in the mandible which afford passage to the vessels or nerves supplying teeth.

*noun*, dentistry  
Heinemann Dental

**alveolar cleft**

cleft in the alveolar process, sometimes seen in association with cleft lip and palate.

*noun*, dentistry  
Heinemann Dental

**alveolar crest**

one of the highest points on the alveolar process, between the tooth sockets.

*noun*, dentistry  
Heinemann Dental

**alveolar macrophage**

one of the rounded granular, mononuclear phagocytes within the alveoli of the lungs that ingest inhaled particulate matter.

*noun*, anatomy  
Dorland Medical

**alveolar ridge**

the crest remaining in an edentulous mouth after the resorption of the alveolar process.

*noun*, dentistry  
Heinemann Dental

**alveolectomy**

surgical correction of bone deformity and removal of bone in the alveolar process.

*noun*, dentistry  
Heinemann Dental

**alveoloplasty**

surgical alteration and improvement of the alveolar ridges for denture construction.

*noun*, dentistry  
Heinemann Dental

**alveolus**

1. bony socket in which the tooth is held.

*noun*, dentistry  
Heinemann Dental

2. minute divisions of glands and the air sacs of the lungs.

*noun*, anatomy  
Black's Medical

**Alzheimer's disease**

progressive degenerative disease of the brain, of unknown cause, and characterised by diffuse atrophy throughout the cerebral cortex.

*noun*, medicine  
Dorland Medical

**amalgam**

an alloy of mercury with another metal or metals.

*noun*, material science  
Heinemann Dental

**amalgam alloy**

metallic substance intended to be mixed with mercury to form filling material for treatment of dental caries.

*noun*, dentistry  
CFR

**amalgam carrier**

syringe-like instrument used to transfer small quantities of amalgam to a prepared cavity in a tooth.

*noun*, dentistry  
Heinemann Dental

**amalgam carver**

specially designed type of carver with a sharp blade used for contouring amalgam restorations.

*noun*, dentistry  
Heinemann Dental

**amalgam condenser**

instrument used to condense amalgam in a tooth cavity.

*noun*, dentistry  
Heinemann Dental

**amalgam tattoo**

area of pigmentation of the oral tissues as a result of the accidental implantation of amalgam restorative materials.

*noun*, dentistry  
Heinemann Dental

**amalgamation**

1. the bringing together of components, ideas or other entities.

*noun*, general  
Larousse Science

2. the formation of an amalgam.

*noun*, material science  
Heinemann Dental

**ambient**

1. relating to the immediate surroundings.

*adjective*, general

2. relating to the temperature and other environmental conditions normally found in a laboratory.

*adjective*, general  
Williams

**ambulatory**

walking or able to walk.

*adjective*, medicine  
Dorland Medical

**ameloblast** *enamel cell*

one of the germ cells developed from the epithelium, from which the enamel organ is formed.

*noun*, embryology  
Heinemann Dental

**ameloblastoma**

usually benign but locally invasive neoplasm of tissue of the type characteristic of the enamel organ, and derived from odontogenic epithelium.

*noun*, medicine  
Dorland Medical

**amelodentinal junction**

line marking the join between the enamel and the dentine.

*noun*, dentistry  
Heinemann Dental

**amelogenesis**

formation of dental enamel.

*noun*, dentistry  
Dorland Medical

**amelogenesis imperfecta**

hereditary defect in enamel formation characterised by a brown colouring, caused by improper differentiation of ameloblasts.

*noun*, dentistry  
Heinemann Dental

**American Society for Testing Materials** ASTM

U.S. society for developing and publishing agreed standards relating to materials and material components.

*noun*, engineering  
Larousse Science

**Ames Test**

*in vitro* test for mutagenicity involving the exposure of test materials or their extracts to specific strains of bacteria.

*noun*, toxicology  
Williams

**amide**

organic compound containing a —CONH<sub>2</sub> group.

*noun*, chemistry  
Szycher's Biomaterials

**amide group**

the —CONH<sub>2</sub>— group.

*noun*, chemistry  
Larousse Science

**amine**

organic derivative of ammonia NH<sub>3</sub> in which one or more hydrogen atoms are replaced by organic radicals.

*noun*, chemistry  
Larousse Science

**amino**

prefix denoting the presence of an —NH<sub>2</sub> or —NH group.

*prefix*, chemistry  
Szycher's Biomaterials

**amino acid**

one of a class of organic compounds containing the

amino (NH<sub>2</sub>) and the carboxyl (COOH) groups, the basic chain unit of proteins and polypeptides.

*noun*, biology  
Dorland Medical

**amnion**

tough fibrous membrane which lines the cavity of the womb during pregnancy.

*noun*, medicine  
Black's Medical

**amniotic fluid**

liquid within the amnion that bathes the developing foetus and protects it from mechanical injury.

*noun*, medicine  
Dorland Medical

**amorphous**

1. having no definite form; shapeless.

*adjective*, general  
Dorland Medical

2. term describing a material without the periodic, ordered structure of crystalline solids.

*adjective*, material science  
Larousse Science

**amorphous metal**

material with good conductivity, electrical and thermal, and with other metallic properties but with atomic arrangements that are not periodically ordered as in crystalline metallic solids.

*noun*, metallurgy  
Larousse Science

**amorphous polymer**

macromolecular material having polymer chains which either cannot crystallise due to chain irregularity or have been cooled from the melt so quickly as to inhibit crystallisation.

*noun*, polymer science  
Larousse Science

**amorphous region**

zone in partly crystalline polymers which has not crystallised.

*noun*, polymer science  
Larousse Science

**amorphous silica**

solid version of silicon dioxide that exists without crystalline form.

*noun*, chemistry  
Williams

Notes: Used as a filler in polymers, especially silicone polymers; the distinction between amorphous and crystalline forms is important from the biological/toxicological point of view.

**amphipathic**

term describing an unsymmetrical molecular group, one end being hydrophilic and the other hydrophobic.

*adjective*, chemistry  
Larousse Science

**amphoteric**

said of substances having the capacity to behave either as acids or bases.

*adjective*, chemistry  
Szycher's Biomaterials

**amphotericin B**

antibiotic derived from strains of *Streptomyces nodosus*.

*noun*, pharmacology  
Dorland Medical

**ampicillin**

semi-synthetic, acid-resistant, penicillinase-sensitive penicillin used as an antibacterial against many gram-negative and gram-positive bacteria.

*noun*, pharmacology  
Dorland Medical

**amplification**

process by which multiple copies of genes or DNA sequences are formed.

*noun*, biology  
Larousse Science

**amplify**

to strengthen a signal by increasing its amplitude or by raising its level.

*verb*, general  
McGraw-Hill Engineering

**ampoule (ampule)**

small, sealed glass capsule for holding measured quantities of vaccines, drugs, serums etc. ready for use.

*noun*, pharmacology  
Larousse Science

**amputation**

removal of a limb or other appendage of the body.

*noun*, surgery  
Dorland Medical

**amylase**

enzyme that catalyses the hydrolysis of starch into simpler compounds.

*noun*, biology  
Dorland Medical

**amylose**

linear, water-soluble glucan.

*noun*, biology  
Dorland Medical

**AN-69 dialysis membrane**

trade name of a hydrophobic acrylonitrile-based copolymer used as a dialysis membrane.

*noun*, biomaterials science  
Williams

**anabolism**

constructive process by which living cells convert simple substances into more complex compounds.

*noun*, biology  
Dorland Medical

**anaemia (anemia)**

condition characterised by inadequate red blood cells and/or haemoglobin in the blood.

*noun*, medicine  
Black's Medical

**anaerobe**

organism that lives and grows in the absence of molecular oxygen.

*noun*, medicine  
Dorland Medical

**anaerobic**

1. living in the absence of oxygen.  
*adjective*, biology  
Larousse Science
2. said of polymers that only solidify when kept out of contact with air.  
*adjective*, polymer science  
Szycher's Biomaterials

**anaerobic adhesives**

adhesives based on monomers that will only polymerise (i.e. cure) in the absence of oxygen.  
*noun*, polymer science  
Larousse Science

**anaerobic polymerisation (anaerobic polymerization)**

free radical polymerisation processes that are inhibited by oxygen.  
*noun*, polymer science  
Brett-Strong Plastics  
Notes: Used especially for certain types of adhesives.

**anaesthesia (anesthesia)**

loss of sensation or feeling.  
*noun*, medicine  
Black's Medical

**anal**

relating to the anus.  
*adjective*, medicine  
Dorland Medical

**analeptic**

restorative medicine, or one which acts as a stimulant of the central nervous system.  
*noun*, pharmacology  
Black's Medical

**analgesia**

absence of sensibility to pain.  
*noun*, medicine  
Dorland Medical

**analgesic**

1. relieving pain.  
*adjective*, medicine  
Dorland Medical
2. drug which relieves pain.  
*noun*, pharmacology  
Larousse Science

**analogue (analog)**

1. chemical compound having a structure similar to that of another but differing from it in respect to a certain component.  
*noun*, chemistry
2. part or organ having the same function as another, but of different evolutionary origin.  
*noun*, medicine  
Dorland Medical

**analysis of covariance**

partition of the total variation in a set of observations into components corresponding to differences between and within subclassifications of the data, after adjustment for the effect of other, possibly related, variables (covariates).  
*noun*, statistics  
Larousse Science

**analysis of variance**

partition of the total variation in a set of observations into components corresponding to differences between and within subclassifications of the data, used as method of comparing subclassification means.  
*noun*, statistics  
Larousse Science

**analytical sensitivity**

lower limit of detection of an analyte by an assay system.  
*noun*, chemistry  
Witkin

**anaphase**

stage in mitotic or meiotic nuclear division when the chromosomes or half-chromosomes move away from the equatorial plate to the poles of the spindle.  
*noun*, biology  
Larousse Science

**anaphylatoxin**

substance produced in blood serum during complement fixation which serves as a mediator of inflammation by inducing mast cell degranulation and histamine release.  
*noun*, medicine  
Dorland Medical  
Notes: Usually C3a, C4a or C5a.

**anaphylaxis**

often fatal hypersensitivity reaction, triggered by IgE or anaphylatoxin-mediated mast cell degranulation, leading to anaphylactic shock due to vasodilation and smooth muscle contraction.  
*noun*, immunology  
Roitt Immunology

**anaplasia**

loss of the differentiation of a cell associated with proliferative activity.  
*noun*, medicine  
Larousse Science

**anastomosis**

1. surgical, traumatic, or pathological formation of an opening between two normally distinct spaces or organs.  
*noun*, medicine  
Dorland Medical
2. an artificial communication, made by operation, between any two parts of the alimentary canal or of the vascular system.  
*noun*, surgery  
Larousse Science

**anatomical root**

portion of a tooth which is covered by cementum.  
*noun*, dentistry  
Heinemann Dental

**anchor band *orthodontic band***

band placed on one tooth to serve as anchorage for the movement of another in orthodontic treatment.  
*noun*, dentistry  
Heinemann Dental

**anchorage**

structures or other means used to provide support and resistance with an orthodontic regulating appliance, or other dental device.

*noun*, dentistry  
Heinemann Dental

**anchorage dependence**

function of a cell that is dependent on the attachment of the cell to a substrate.

*adjective*, biology  
Longmans

**anecdotal**

based on case histories rather than on controlled clinical trials.

*adjective*, clinical practice  
Dorland Medical

**anecdotal case reports**

reports of phenomena concerned with individual patients, often unsubstantiated by thorough medical or scientific data, that do not form part of a series and have no controls, but which nevertheless may be used to provide circumstantial evidence of medical conditions.

*noun*, clinical practice  
Williams

**anelasticity**

1. deviation from a proportional relationship between stress and strain.

*noun*, material science  
McGraw-Hill Engineering

2. any structural inhomogeneity or discontinuity which would dampen or attenuate an elastic wave propagating in a body.

*noun*, physics  
Larousse Science

**anergy**

potentially reversible specific immunological tolerance in which the lymphocyte becomes functionally non-responsive.

*noun*, immunology  
Roitt Immunology

**aneurysm**

sac formed by localised dilatation of the wall of an artery, a vein, or the heart.

*noun*, medicine  
Dorland Medical

**aneurysm clip**

device used to occlude an intracranial aneurysm to prevent it from bleeding or bursting.

*noun*, medical device technology  
CFR

**angina pectoris**

paroxysmal pain in the chest, often radiating to the arms, particularly the left, usually due to interference with the supply of oxygen to the heart muscle.

*noun*, medicine  
Dorland Medical

**angiocardigraphy**

radiography of the heart and great vessels after introduction of an opaque contrast medium into a blood vessel or a cardiac chamber.

*noun*, medicine  
Dorland Medical

**angioplasty**

procedure for elimination of areas of narrowing in blood vessels, such as by inflation of a balloon within the vessel or by laser vaporisation of an occlusion within a vessel.

*noun*, medicine  
Dorland Medical

**angiosarcoma**

malignant neoplasm arising from vascular endothelial cells.

*noun*, medicine  
Dorland Medical

Notes: The term may be used generally or may denote a subtype, such as haemangiosarcoma.

**angle of the mouth**

angle at the junction of the upper and lower lips on either side of the mouth.

*noun*, dentistry  
Heinemann Dental

**angstrom** Å

a unit of length used for atomic dimensions and electromagnetic wavelengths; equivalent to  $10^{-10}$ m.

*noun*, chemistry  
Dorland Medical

**angulation**

1. deviation from a straight line, as in a badly set bone.

*noun*, medicine

2. formation of a sharp obstructive bend, as in the intestine, ureter, or similar tubes.

*noun*, medicine  
Dorland Medical

**anhydride**

substance, including organic compounds and inorganic oxides, which either combines with water to form an acid or which may be obtained from the latter by the elimination of water.

*noun*, chemistry  
Larousse Science

**anhydrous**

descriptive of an inorganic compound that does not contain water.

*adjective*, chemistry  
Szycher's Biomaterials

**animal**

1. any live non-human vertebrate, excluding foetal or embryonic forms, unless otherwise qualified.

*noun*, regulatory affairs

ISO

2. all vertebrates including fish, amphibians, reptiles, birds and mammals, excluding humans.

*noun*, regulatory affairs  
CEN

**animal derived material**

any biomaterial obtained from an animal source.

*noun*, biomaterials science  
Williams

**animal experiment**

any use of an animal for scientific purposes which

may cause it pain, anxiety, suffering, distress or lasting harm, excluding the least painful methods accepted in modern veterinary or laboratory practice (i.e. "humane" methods) of killing or marking an animal.

*noun*, regulatory affairs

ISO

Note: Although a definition is required for regulatory and legal purposes, this particular definition is unhelpful since experiments with animals do not necessarily cause any of the conditions mentioned. A more appropriate general definition is "any use of an animal for scientific purposes."

#### **animal model**

in medical research, an experimental protocol that involves the use of living animals.

*noun*, medicine

Williams

#### **anion**

negative ion, i.e. atom or molecule which has gained one or more electrons in an electrolyte.

*noun*, chemistry

Larousse Science

#### **anionic polymerisation** (anionic polymerization)

polymerisation using anionic catalyst.

*noun*, polymer science

Larousse Science

#### **anisotropic**

term describing any material whose physical properties depend upon direction relative to some defined axes (e.g. crystalline axes, fibre orientation, draw direction) in the material.

*adjective*, material science

Larousse Science

#### **anisotropy**

phenomenon whereby any property of a substance depends on direction relative to some defined axes in the material.

*noun*, material science

Larousse Science

#### **ankle**

region of the joint between leg and foot; the tarsus.

*noun*, anatomy

Dorland Medical

#### **ankylosing spondylitis**

rheumatoid arthritis of the spine, which may progress to cause complete spinal and thoracic rigidity.

*noun*, medicine

Larousse Science

#### **ankylosis**

1. immobility and consolidation of a joint due to disease, injury, or surgical procedure.

*noun*, medicine

Dorland Medical

2. type of tooth attachment where the tooth is directly connected to the bone, with no intervening soft tissue.

*noun*, dentistry

Heinemann Dental

#### **anneal**

1. to heat in a furnace for a period followed by slow cooling in order to bring about softening or

relaxation of internal stress.

*verb*, material science

Larousse Science

2. to cause the association or reassociation of single-stranded nucleic acids so that double-stranded molecules are formed, often by heating and cooling.

*verb*, biology

Dorland Medical

#### **annealing**

1. form of heat treatment applied to a metal to soften it, relieve internal stresses and instabilities, and make it easier to work or machine.

*adjective*, metallurgy

Oxford Science

2. form of physical treatment of a polymer intended to relieve internal stresses by heating below softening temperatures, and maintaining this temperature for a predetermined period of time.

*adjective*, polymer science

Szycher's Biomaterials

#### **annuloplasty**

repair of a cardiac valve with a prosthesis.

*noun*, surgery

Dorland Medical

#### **annuloplasty ring**

device that is a rigid or flexible ring implanted around the mitral or tricuspid heart valve for reconstructive treatment of valvular insufficiency.

*noun*, surgery

Szycher's Medical Devices

#### **annulus**

small ring or encircling structure.

*noun*, general

Dorland Medical

#### **anode**

1. in a valve or tube, the electrode held at a positive potential with respect to a cathode, and through which positive current generally enters the vacuum or plasma, through collection of electrons.

*noun*, physics

Larousse Science

2. in an electrochemical cell, the electrode at which oxidation occurs (positive in an electrolytic cell and negative in a voltaic cell.)

*noun*, chemistry

Dorland Medical

#### **anodic oxidation**

oxidation, i.e. removal of electrons from a substance, by placing it in the anodic region of an electrolytic cell.

*noun*, chemistry

Larousse Science

#### **anodic polarisation** (anodic polarization)

separation of charges at the anode of an electrochemical cell, the measurement of which is used to predict corrosion behaviour.

*noun*, metallurgy

Williams

#### **anodic protection**

system for passivating a metal by making it the anode in a protective circuit.

*noun*, engineering  
Larousse Science

**anodised** (anodized)

said of a metal surface that has been protected by chemical or electrolytic action.  
*adjective*, material science  
Larousse Science

**anodising** (anodizing)

electrolytic process which increases the thickness of the layer of oxide on the surface of metals and alloys when these form the anode of the electrolytic cell.  
*noun*, material science  
Larousse Science

**anodontia**

absence of teeth.  
*noun*, dentistry  
Heinemann Dental

**anodyne**

1. relieving pain.  
*adjective*, pharmacology  
2. medicine that eases pain.  
*noun*, pharmacology  
Dorland Medical

**anoplasty**

reparative surgery of the anus.  
*noun*, surgery  
Dorland Medical

**anorganic bone**

bone treated to remove the mineral phase.  
*noun*, biology  
Williams

**anoxia**

absence of oxygen supply to tissues despite adequate perfusion of the tissue by blood.  
*noun*, medicine  
Dorland Medical

**antagonism**

opposition or contrariety between similar things, as between muscles, medicines, or organisms.  
*noun*, medicine  
Dorland Medical

**antagonist**

1. muscle that counteracts the action of another muscle, its agonist.  
*noun*, anatomy  
2. tooth in one jaw that articulates with one in the other jaw.  
*noun*, dentistry  
3. drug that binds to a cell receptor for a hormone, a neurotransmitter, or another drug, and thus blocks the action of the other substance without producing any physiological effect itself.  
*noun*, pharmacology  
Dorland Medical

**anterior chamber of eye**

part of the aqueous-containing space of the eyeball between the cornea and the iris.  
*noun*, ophthalmology  
Dorland Medical

**anterior cruciate ligament**

one of the cross-shaped ligaments of the knee.  
*noun*, anatomy  
Williams

**anti-**

counteracting; effective against.  
*prefix*, general  
Dorland Medical

**anti-inflammatory agent**

agent that counteracts or suppresses inflammation.  
*noun*, pharmacology  
Dorland Medical

**antiarrhythmic**

1. preventing or alleviating cardiac arrhythmias.  
*adjective*, medicine  
2. drug that acts to prevent or alleviate cardiac arrhythmias.  
*noun*, pharmacology  
Dorland Medical

**antibacterial**

1. capable of destroying or suppressing growth or reproduction of bacteria.  
*adjective*, biology  
2. substance that is able to destroy or suppress the growth or reproduction of bacteria.  
*noun*, biology  
Dorland Medical

**antibiotic**

any chemical substance, produced by or derived from a micro-organism, that has the capacity in dilute solutions selectively to destroy or inhibit the growth of bacteria, fungi, or other harmful micro-organisms without damaging the host.  
*noun*, biology  
Larousse Science

**antibiotic resistance**

the property of micro-organisms or cells, which can survive high concentrations of a normally lethal antibiotic agent.  
*noun*, biology  
Larousse Science

**antibody**

immunoglobulin with a site able to combine specifically with antigenic determinants on an antigen.  
*noun*, immunology  
Larousse Science

**antibody-dependent cell-mediated cytotoxicity**

**ADCC**

cytotoxic reaction in which an antibody-coated target cell is directly killed by an Fc receptor-bearing leucocyte, e.g. NK cell, macrophage or neutrophil.  
*noun*, immunology  
Roitt Immunology

**anticariogenic**

effective in suppressing caries production.  
*adjective*, dentistry  
Dorland Medical

**anticoagulant**

1. acting to prevent clotting of blood.

*adjective*, medicine

Dorland Medical

2. agent which prevents or delays blood coagulation.

*noun*, biology

ISO

**anticoagulation**

1. prevention of coagulation.

*noun*, medicine

2. use of drugs to render the blood sufficiently incoagulable to discourage thrombosis.

*noun*, medicine

Dorland Medical

**antifouling agent**

any agent used to prevent deposition of contaminating substance or film on the surface of a material or device.

*noun*, chemistry

Williams

**antifungal**

suppressing the growth or reproduction of fungi.

*adjective*, biology

Dorland Medical

**antigen**

any molecule capable of being recognised by an antibody or T-cell receptor.

*noun*, immunology

Roitt Immunology

**antigen processing**

biochemical process by which antigen presenting cells associate foreign antigenic determinants or epitopes with self proteins encoded by the major histocompatibility complex.

*noun*, immunology

Larousse Science

**antigen-binding fragment Fab**

either of two identical fragments, each containing an antigen combining site, obtained by papain cleavage of the immunoglobulin IgG molecule.

*noun*, immunology

Dorland Medical

**antigen-binding site**

region of an antibody molecule that binds to antigens.

*noun*, immunology

Dorland Medical

**antigen-presenting cell APC**

cell which presents foreign antigenic determinants or epitopes to the antigen specific receptors found on lymphocytes.

*noun*, immunology

Larousse Science

**antigenic determinant**

small part of the antigen which has a structure complementary to the recognition site on a T-cell receptor or an antibody.

*noun*, immunology

Larousse Science

**antihaemophilic factor** (antihemophilic factor)

*Factor VIII*

preparation of Factor VIII used for the treatment

of haemophilia or the prevention or treatment of haemorrhage in haemophiliacs.

*noun*, pharmacology

Dorland Medical

**antihistamine**

substance or drug which inhibits the action of histamine by blocking its site of action.

*noun*, pharmacology

Larousse Science

**antihypertensive drug**

one of a group of drugs which are used to treat high blood pressure.

*noun*, pharmacology

Black's Medical

**antimicrobial**

1. capable of killing micro-organisms or suppressing their multiplication or growth.

*adjective*, biology

2. agent capable of killing micro-organisms or suppressing their multiplication or growth.

*noun*, biology

Dorland Medical

**antinuclear antibody ANA**

any antibody produced in response to any cellular nuclear constituent of the host, considered to be a marker of autoimmunity.

*noun*, immunology

Williams

**antioxidant**

substance which delays the oxidation of materials, foods or other substances.

*noun*, chemistry

Larousse Science

**antisense**

any DNA or RNA molecule whose sequence is complementary to the sense strand of RNA transcribed from a target gene.

*adjective*, genetics

Biomedical Engineering Handbook

**antiseptics**

destruction of bacteria or the inhibition of their growth in the field of operation by chemical agents.

*noun*, biology

Larousse Science

**antiseptic**

1. preventing sepsis.

*adjective*, biology

2. substance that inhibits the growth and development of micro-organisms but does not necessarily kill them.

*noun*, medicine

Dorland Medical

**antiserum**

serum from an individual which contains a high titre of antibodies specifically directed against a particular pathogen or foreign protein.

*noun*, immunology

Larousse Science

**antisiphon device**

device implanted to counteract the effects of the hydrostatic column of the outflow catheter.

*noun*, medical device technology  
ASTM

**antithrombin**

any naturally occurring or therapeutically administered substance that neutralises the action of thrombin and thus limits or restricts blood coagulation.

*noun*, medicine  
Dorland Medical

**antithrombin III**

a plasma protein (alpha<sub>2</sub>-globulin) that inactivates thrombin.

*noun*, medicine  
Dorland Medical

**antithromboplastin**

any agent or substance that prevents or interferes with the interaction of blood coagulation factors as they generate prothrombinase (thromboplastin).

*noun*, medicine  
Dorland Medical

**antrum**

natural hollow or cavity.

*noun*, anatomy  
Black's Medical

**anuria**

condition in which no urine is voided.

*noun*, medicine  
Black's Medical

**anus**

opening at the lower end of the bowel.

*noun*, anatomy  
Black's Medical

**aorta**

the great artery arising from the left ventricle, being the main trunk from which the systemic arterial system proceeds.

*noun*, anatomy  
Dorland Medical

**aortic arches**

a series of pairs of vessels arising from the ventral aorta.

*noun*, anatomy  
Larousse Science

**aortic regurgitation AR**

backflow of blood from the aorta into the left ventricle due to insufficiency in the aortic valve.

*noun*, medicine  
Dorland Medical

**aortic sinus**

dilatation between the aortic wall and the semilunar cusps of the aortic valve.

*noun*, medicine  
Dorland Medical

**aortic stenosis AS**

narrowing of the aortic orifice of the heart or of the aorta near the valve.

*noun*, medicine  
Dorland Medical

**aortic valve**

that guarding the entrance to the aorta from the left ventricle.

*noun*, medicine  
Dorland Medical

**aortoplasty**

surgical repair or reconstruction of the aorta.

*noun*, surgery  
Dorland Medical

**apatite**

crystalline substance of general formula  $M_{10}(XO_4)_6Z_2$ , most commonly used for the description of calcium phosphate (M=Ca, X=P, Z=OH) which may also contain varying levels of fluoride, chloride or carbonate ions.

*noun*, chemistry  
Williams

**apatite wollastonite**

ceramic based on calcium hydroxyapatite in which some  $\beta$ -wollastonite is added, giving greater strength than the apatite itself.

*noun*, biomaterials science  
Williams

**apex**

1. pointed end of a conical part; the top of a body, organ, or part.

*noun*, anatomy  
Dorland Medical

2. extreme tip of a tooth root.

*noun*, dentistry  
Heinemann Dental

**aphakia**

absence of the lens of an eye, occurring congenitally or as a result of trauma or surgery.

*noun*, ophthalmology  
Dorland Medical

**aphasia**

defect or loss of the power of expression by speech.

*noun*, medicine  
Dorland Medical

**apheresis**

any procedure in which blood is withdrawn from a donor, a portion (plasma, leucocytes, platelets, etc.) being separated and retained, and the remainder retransfused into the donor.

*noun*, medicine  
Dorland Medical

**aphonia**

loss of voice; inability to produce vocal sounds.

*noun*, medicine  
Dorland Medical

**aphtha** *aphthae*

1. any small ulcer.

*noun*, medicine

2. irregular whitish ulcer occurring in the mouth.

*noun*, medicine  
Heinemann Dental

**apical foramen of tooth**

opening at or near the apex of the root of a tooth, giving passage to the vascular, lymphatic, and neural structures supplying the pulp.

*noun*, dentistry

Dorland Medical

**apicectomy**

surgical removal of the apex of a tooth root.

*noun*, dentistry

Heinemann Dental

**aplasia**

lack of development of an organ or tissue, or of the cellular products from an organ or tissue.

*noun*, embryology

Dorland Medical

**apnoea (apnea)**

cessation of breathing.

*noun*, medicine

Dorland Medical

**apo-**

away.

*prefix*, general

Larousse Science

**apoenzyme**

protein component of an enzyme separable from the prosthetic group (coenzyme) but requiring the presence of the prosthetic group to form the functioning compound.

*noun*, biology

Dorland Medical

**apoprotein**

protein component of a conjugated protein; for example the globin of haemoglobin.

*noun*, biology

Larousse Science

**apoptosis**

form of programmed cell death, characterised by endonuclease digestion of DNA.

*noun*, immunology

Roitt Immunology

**apparatus**

complex of structures associated by a common origin or function.

*noun*, anatomy

Heinemann Dental

**apparent life-threatening episode ALTE**

episode characterised by a combination of apnea, colour change, muscle tone change, choking or gagging.

*noun*, medicine

Biomedical Engineering Handbook

**apparent viscosity**

viscosity of a Newtonian fluid that would require the same pressure difference to produce the same blood flow rate through a circular vessel as the blood.

*noun*, bioengineering

Biomedical Engineering Handbook

**appendicitis**

inflammation of the vermiform appendix.

*noun*, medicine

Dorland Medical

**appendicostomy**

surgical creation of an opening into the vermiform

appendix to irrigate or drain the large bowel.

*noun*, surgery

Dorland Medical

**appendix**

supplementary, accessory, or dependent part attached to a main structure.

*noun*, general

Dorland Medical

**appliance**

any device used in the mouth to move or immobilise the teeth in order to correct or prevent malocclusion, or to supply missing teeth or to serve as an obturator.

*noun*, dentistry

Heinemann Dental

**applied stress**

stress induced in a member under load.

*noun*, engineering

Larousse Science

**approach**

specific surgical procedures by which an organ or part is exposed.

*noun*, surgery

Dorland Medical

**approximal cavity *proximal cavity***

a cavity affecting either a mesial or a distal surface of a tooth.

*noun*, dentistry

Heinemann Dental

**approximal surfaces**

those surfaces of teeth that adjoin each other in the same dental arch.

*noun*, dentistry

Heinemann Dental

**aprismatic enamel**

form of enamel consisting of a solid layer without prisms, found on the outer surface of the tooth and in the initial layers.

*noun*, dentistry

Heinemann Dental

**aqueous chamber**

part of the eyeball filled with aqueous humour.

*noun*, ophthalmology

Dorland Medical

**aqueous humour (aqueous humor)**

fluid produced in the eye and filling the spaces in the front of the lens and its attachments.

*noun*, ophthalmology

Dorland Medical

**arachidonic acid**

unsaturated fatty acid,

$\text{CH}_3(\text{CH}_2)_3(\text{CH}_2\text{CH}=\text{CH})_4(\text{CH}_2)_3\text{COOH}$  that is essential for growth in animals.

*noun*, chemistry

Oxford Science

**arachnodactyly**

extreme length and slenderness of fingers and toes.

*noun*, medicine

Dorland Medical

**aragonite**

rock-forming anhydrous mineral form of orthorhombic crystalline calcium carbonate.

*noun*, material science

Oxford Science

Notes: Close mineral equivalent of coral, used as bone filling material.

**arc welding**

process for joining of metal parts by fusion in which the heat necessary for fusion is produced by an electric arc struck between two electrodes or between an electrode and the metal.

*noun*, engineering

Larousse Science

**arch**

1. structure of bow-like or curved outline.

*noun*, anatomy

Dorland Medical

2. form of orthodontic appliance.

*noun*, dentistry

Heinemann Dental

**arch bar**

orthodontic appliance consisting of a wire extending round the dental arch, to which the intervening teeth may be attached.

*noun*, dentistry

Heinemann Dental

**archwire** *orthodontic wire*

any wire in an orthodontic appliance, that follows closely the lingual or labial outline of the dental arch.

*noun*, dentistry

Heinemann Dental

**areola**

1. any minute space or interstice in a tissue.

*noun*, medicine

2. circular area of a different colour surrounding a central point, as that surrounding the nipple of the breast.

*noun*, anatomy

Dorland Medical

3. in the vertebrate eye, that part of the iris bordering the pupil.

*noun*, ophthalmology

Larousse Science

**areolar tissue**

type of connective tissue consisting of cells separated by a mucin matrix in which are embedded bundles of white and yellow fibres.

*noun*, anatomy

Larousse Science

**argentiferous**

containing silver.

*adjective*, chemistry

Larousse Science

**arginine** Arg. **short form R**

2-amino-5-guanidopentanoic acid

$\text{H}_2\text{NC}(\text{NH})\text{NH}(\text{CH}_2)_3\text{CH}(\text{NH}_2)\text{COOH}$ . An essential amino acid.

*noun*, biology

Larousse Science

**argon** Ar

element which forms no known compound, one of the rare gases, at no. 18.

*noun*, chemistry

Larousse Science

**argyria**

poisoning by silver or its salts marked by a permanent ashen-grey discoloration of the skin, conjunctivae, and internal organs.

*noun*, toxicology

Dorland Medical

**arm**

1. upper extremity from shoulder to elbow; popularly, the entire extremity, from shoulder to hand.

*noun*, anatomy

2. arm-like part, e.g., the portion of the chromatid extending in either direction from the centromere of a mitotic chromosome.

*noun*, biology

Dorland Medical

**aromatic**

denoting a compound containing a resonance-stabilised ring, e.g., benzene or naphthalene.

*adjective*, chemistry

Dorland Medical

**aromatic compound**

organic compound characterised by an unsaturated ring of carbon atoms.

*noun*, chemistry

Szycher's Biomaterials

**aromatic polymer**

any polymer possessing benzene rings either in side groups (e.g. polystyrene) or in the main backbone chain (e.g. polycarbonate).

*noun*, polymer science

Larousse Science

**arrest**

cessation or stoppage, as of a function or a disease process.

*noun*, general

Dorland Medical

**arrhythmia**

variation from the normal rhythm of the heartbeat, encompassing abnormalities of rate, regularity, site of impulse origin, and sequence of activation.

*noun*, medicine

Dorland Medical

**artefact**

1. man-made stone, wood or metal implement.

*noun*, general

Notes: Acceptable alternative spelling of artifact.

2. any apparent structure, particularly a microscopic image that does not represent part of the actual specimen but is due to faulty preparation.

*noun*, biology

Larousse Science

**arterial line blood filter**

medical device used as part of a gas exchange (oxygenator) system to filter non-biological articles and emboli out of the blood, used in the arterial

line of cardiopulmonary bypass.  
*noun*, medical device technology  
Szycher's Medical Devices

**arterial system**

that part of the vascular system which carries the blood from the heart to the body.  
*noun*, anatomy  
Larousse Science

**arteriography**

radiography of an artery or arterial system after injection of a contrast medium into the bloodstream.  
*noun*, medicine  
Dorland Medical

**arteriole**

minute arterial branch.  
*noun*, anatomy  
Dorland Medical

**arterioplasty**

surgical repair or reconstruction of an artery.  
*noun*, surgery  
Dorland Medical

**arteriosclerosis** AS

a group of diseases characterised by thickening and loss of elasticity of the arterial walls.  
*noun*, medicine  
Dorland Medical

**arteriovenous fistula**

a permanent communication between an artery and an adjacent vein, created surgically, leading to the formation of a dilated vein segment which can be punctured transcutaneously with large bore needles so as to allow connection of the circulatory system to an extracorporeal blood processing unit.  
*noun*, surgery  
Biomedical Engineering Handbook

**arteriovenous shunt**

any connection made directly between an artery and a vein, primarily for chronic access to the circulatory system in, for example, dialysis patients.  
*noun*, surgery  
Williams

**arteritis**

inflammation of an artery.  
*noun*, medicine  
Larousse Science

**artery**

vessel in which blood flows away from the heart.  
*noun*, medicine  
Dorland Medical

**arthralgia**

pain in a joint.  
*noun*, medicine  
Dorland Medical

**arthrectomy**

excision of a joint.  
*noun*, surgery  
Larousse Science

**arthritis**

inflammation of a joint.  
*noun*, medicine  
Dorland Medical

**arthrodesis**

operation for fixing a joint in a given position, from which it cannot be moved.  
*noun*, surgery  
Larousse Science

**arthrography**

radiography of a joint after injection of opaque contrast material.  
*noun*, medicine  
Dorland Medical

**arthropathy**

any joint disease.  
*noun*, medicine  
Dorland Medical

**arthroplasty**

prosthetic repair of a joint.  
*noun*, surgery  
Dorland Medical

**arthroscope**

electrically powered endoscope intended to make visible the interior of a joint for diagnostic purposes, which with accessories may also be intended to perform therapeutic procedures within a joint.  
*noun*, medical device technology  
CFR

**arthroscopy**

examination of the interior of a joint with an arthroscope.  
*noun*, medicine  
Dorland Medical

**arthrosis**

1. joint or articulation.  
*noun*, anatomy  
2. disease of a joint.  
*noun*, medicine  
Dorland Medical

**arthrotomy**

surgical incision into a joint.  
*noun*, surgery  
Larousse Science

**articular**

pertaining to a joint.  
*adjective*, medicine  
Dorland Medical

**articular capsule** *joint capsule*

sac-like envelope enclosing the cavity of a synovial joint.  
*noun*, anatomy  
Szycher's Biomaterials

**articular cartilage**

lining of the articular surface of synovial joints.  
*noun*, anatomy  
Dorland Medical

**articulate**

1. to divide into or unite so as to form a joint.  
*verb*, anatomy  
2. to adjust or place the teeth in their proper relation to each other in making an artificial denture.  
*verb*, dentistry  
Dorland Medical

**articulating joint**

joint of the musculo-skeletal system where movement occurs by sliding and/or rotation of surfaces of articular cartilage.  
*noun*, anatomy  
Williams

**articulation**

1. connection of two parts in such a way as to permit relative movement.  
*noun*, engineering  
Larousse Science  
2. place of union or junction between two or more bones of the skeleton.  
*noun*, anatomy  
3. contact relationship of the occlusal surfaces of the teeth while in action.  
*noun*, dentistry  
Dorland Medical

**articulation paper**

paper coated with an ink dye that is placed between the upper and lower teeth when the teeth are in the bite position, used to locate uneven or high areas.  
*noun*, dentistry  
Szycher's Medical Devices

**articulator**

mechanical device used to simulate movements of a patient's upper and lower jaw.  
*noun*, dentistry  
Szycher's Medical Devices  
Notes: Plaster casts of the patient's teeth and gums are placed in the device to reproduce the occlusion and articulation of the patient's jaws, used to fit dentures or provide orthodontic treatment.

**artificial larynx**

reed actuated by the air passing through an opening in front of throat to assist the speech of a person who has undergone a tracheotomy operation.  
*noun*, medical device technology  
Larousse Science

**artificial eye**

device resembling the anterior portion of the eye, usually made of glass or plastic, intended to be inserted in a patient's eye socket anterior to an orbital implant, or the eviscerated eyeball, for cosmetic purposes.  
*noun*, medical device technology  
CFR

**artificial heart**

any device which functionally replaces the mechanical activity of the heart.  
*noun*, medical device technology  
Williams  
Notes: An artificial heart may be implantable or located externally to the body with access lines to relevant parts of the vascular system

**artificial kidney**

blood purification device based on the removal of toxic substances through semi-permeable membranes washed out by an acceptor solution which can safely be discarded.  
*noun*, medical device technology  
Biomedical Engineering Handbook

**artificial lung**

device which allows for continuous exchange of oxygen and carbon dioxide between circulating blood and a controlled gas atmosphere.  
*noun*, medical device technology  
Biomedical Engineering Handbook

**artificial organ**

medical device that replaces, in part or in whole, the function of one of the organs of the body.  
*noun*, medical device technology  
ESB Consensus Conference I

**artificial tooth**

prefabricated element designed for use on a dental prosthesis to represent a natural crown.  
*noun*, dentistry  
Heinemann Dental

**as-cast**

any product or specimen that is prepared by casting and which receives no subsequent mechanical or thermal treatment.  
*adjective*, material science  
Williams

**asbestos**

naturally occurring, fine (~ 5 µm diameter) mineral fibres derived from chrysotile and the amphiboles actinolite, amosite, anthophyllite and crocidolite (blue asbestos).  
*noun*, chemistry  
Larousse Science

**asbestosis**

pneumoconiosis caused by inhaled asbestos fibres, characterised by interstitial fibrosis and associated with pleural mesothelioma and bronchogenic carcinoma.  
*noun*, medicine  
Dorland Medical

**ascorbic acid** *Vitamin C*

water-soluble vitamin found in many vegetables and fruits.  
*noun*, biology  
Dorland Medical

**asepsis**

1. freedom from infection.  
*noun*, medicine  
2. prevention of contact with micro-organisms.  
*noun*, medicine  
Dorland Medical

**aseptic**

pertaining to the absence of viable organisms.  
*adjective*, medicine  
Larousse Science

**aseptic loosening**

clinically detectable loosening of a joint replacement prosthesis that is not caused by

infection.  
*noun*, surgery  
Williams

**aseptic necrosis**

necrosis without infection.  
*noun*, medicine  
Dorland Medical

**asparagine Asn, short form N**

$\text{NH}_2\text{COCH}_2\text{CH}(\text{NH}_2)\text{COOH}$ , the monoamide of aspartic acid.  
*noun*, chemistry  
Larousse Science

**aspartate transaminase**

enzyme normally present in body tissues, especially in the heart and liver.  
*noun*, biology  
Dorland Medical

**aspartic acid Asp, short form D**

2-aminobutanedioic acid.  
 $\text{HOOCCH}_2\text{CH}(\text{NH}_2)\text{COOH}$ . An amino acid formed by the hydrolysis of asparagine.  
*noun*, biology  
Larousse Science

**aspect ratio**

ratio of the length of a fibre or wire to its width or diameter.  
*noun*, material science  
Larousse Science

**asperity**

slightly raised part of a surface which forms one of the actual points of contact between two surfaces at a microscopic level, elastically and plastically flattened under load.  
*noun*, engineering  
Larousse Science

**aspiration**

removal by suction, as the removal of fluid or gas from a body cavity or the procurement of biopsy specimens.  
*noun*, medicine  
Dorland Medical

**aspirin**

acetylsalicylic acid,  $\text{C}_9\text{H}_8\text{O}_4$ , an analgesic, antipyretic, and antirheumatic.  
*noun*, pharmacology  
Dorland Medical

**assay**

determination of the amount of a particular constituent of a mixture, or of the potency of a drug.  
*noun*, chemistry  
Dorland Medical

**Association Française de Normalisation**

**AFNOR**

French national organisation for the preparation and issue of standard specifications.  
*noun*, regulatory affairs  
Williams

**asthma**

chronic disease characterised by difficulty in

breathing, accompanied by wheezing and difficulty in expelling air from the lungs.

*noun*, medicine  
Larousse Science

**astigmatism**

unequal curvature of the refracting surfaces of the eye, which prevents the focusing of light rays to a common point on the retina.  
*noun*, ophthalmology  
Larousse Science

**astrigent**

1. substance having the power to constrict or contract organic tissues.  
*noun*, medicine  
Larousse Science  
2. causing contraction, usually locally after topical application.  
*adjective*, medicine  
Dorland Medical

**astrocyte**

neuroglial cell of ectodermal origin, characterised by fibrous, protoplasmic, or plasmatofibrous processes.  
*noun*, anatomy  
Dorland Medical

**astrocytoma**

tumour composed of astrocytes; the most common type of primary brain tumour and also found throughout the central nervous system.  
*noun*, medicine  
Dorland Medical

**asymptomatic**

1. presenting no symptoms of disease.  
*adjective*, clinical practice  
Longmans  
2. relating to the condition of a patient in which an implanted medical device is performing with no clinically detectable adverse symptoms.  
*noun*, medical device technology  
Williams

**atactic polymer**

any polymer with molecular backbones in which pendant groups are arranged randomly.  
*noun*, polymer science  
Szycher's Biomaterials

**ataxia**

incoordination of muscles due to lesions in the nervous system, leading to irregular and uncontrolled movements.  
*noun*, medicine  
Larousse Science

**atelocollagen**

collagen molecule without the telopeptides.  
*noun*, biology  
Biomedical Engineering Handbook

**atherectomy**

removal of an atherosclerotic plaque from an artery by means of a rotary cutter introduced through a special catheter under radiographic guidance.  
*noun*, medicine  
Dorland Medical

**atheroma** *atherosclerosis*

thickening of and increased rigidity of the intima of the arteries, caused by a deposition of plaque.

*noun*, medicine  
Larousse Science

**atherosclerosis** *atheroma*

form of arteriosclerosis in which atheromas containing cholesterol, lipid material, and lipophages are formed within the intima and inner media of large and medium-sized arteries.

*noun*, medicine  
Dorland Medical

**atherosclerotic plaque**

deposit that forms on the lumen of arteries, consisting of fatty deposits invaded by cells from the vessel wall and by platelets, which is responsible for atherosclerosis.

*noun*, medicine  
Williams

**athymic**

pertaining to the genetic lack of a functional thymus gland.

*adjective*, immunology  
Larousse Science

**atlas**

the first cervical vertebra.

*noun*, anatomy  
Dorland Medical

**atom**

smallest particle of an element which can take part in a chemical reaction.

*noun*, chemistry  
Larousse Science

**atomic absorption spectroscopy** AAS

analytical technique in which a sample is vaporised and the non-excited atoms absorb electromagnetic radiation at characteristic wavelengths.

*noun*, chemistry  
Oxford Science

**atomic force microscope** AFM

device for mapping surface atomic structure by measuring the force acting on the tip of a sharply pointed wire or other object that is moved over the surface.

*noun*, material science  
McGraw-Hill Engineering

**atomic structure**

arrangement of the parts of an atom.

*noun*, physics  
Larousse Science

**atomisation** (atomization)

mechanical subdivision of a bulk liquid or meltable solid, such as certain metals, to produce drops, which vary in diameter depending on the process from under 10 to over 1000 micrometers.

*noun*, engineering  
McGraw-Hill Engineering

**atomised powder** (atomized powder)

powder produced by the dispersion of molten metal or other material by spraying under conditions such that the material breaks down into powder.

*noun*, material science

Larousse Science

**atomiser** (atomizer)

nozzle through which a liquid is sprayed under pressure.

*noun*, engineering  
Larousse Science

**atopic allergy**

IgE-mediated hypersensitivity, i.e. asthma, eczema, hay-fever and food allergy.

*noun*, immunology  
Roitt Immunology

**atrial fibrillation**

atrial arrhythmia marked by rapid randomised contractions of small areas of the atrial myocardium, causing a totally irregular, rapid ventricular rate.

*noun*, medicine  
Williams

**atrioventricular junction** AV junction

part or all of the region comprising the atrioventricular node and the bundle of His.

*noun*, anatomy  
Dorland Medical

**atrioventricular node** AVN

highly specialised cluster of neuromuscular cells at the lower portion of the right atrium leading to the interventricular septum.

*noun*, biology

Biomedical Engineering Handbook

Notes: The AV node delays sinoatrial, (SA) node-generated electrical impulses momentarily and then conducts the depolarisation wave to the bundle of His and its bundle branches.

**atrium**

1. chamber affording entrance to another structure or organ, especially the upper, smaller cavity on either side of the heart.

*noun*, anatomy  
Dorland Medical

2. anterior part of the nasal tract.

*noun*, anatomy  
Larousse Science

**atrophy**

wasting away; a diminution in the size of a cell, tissue, organ, or part.

*noun*, medicine  
Dorland Medical

**atropine**

anticholinergic alkaloid.

*noun*, pharmacology  
Dorland Medical

Notes: Used as a smooth muscle relaxant, to relieve tremor and rigidity in Parkinsonism, to increase the heart rate by blocking the vagus nerve and as an antidote to organophosphate poisoning.

**attached gingiva**

part of the gingiva which is attached both to the alveolar bone and to the cementum of a tooth.

*noun*, dentistry  
Heinemann Dental

**attachment**

any clasp, hook or cap used to fasten a partial denture or an appliance to a natural tooth.

*noun*, dentistry  
Heinemann Dental

**attachment apparatus**

supporting tissues of a tooth, including the alveolar bone, periodontal ligament and gingiva.

*noun*, dentistry  
Heinemann Dental

**attenuated total reflectance - fourier transform infrared spectroscopy ATR-FTIR**

variation of fourier transform infrared spectroscopy used to obtain infrared spectra of surfaces and to perform depth profiling.

*noun*, chemistry  
Szycher's Biomaterials

**attenuation**

lessening of the capacity of a pathogen to cause disease.

*noun*, biology  
Larousse Science

**attributable risk**

proportion of disease incidence or other outcome in exposed individuals that can be attributed to a specific exposure.

*noun*, medicine  
Witkin

**atypical**

irregular, not conformable to the type.

*adjective*, general  
Dorland Medical

**atypical connective tissue disease**

term given to a collection of symptoms which are similar to those found in certain autoimmune connective tissue diseases such as scleroderma, but which do not have all of the biological markers or clinical indicators to allow for such a diagnosis.

*noun*, medicine  
Williams  
Notes: The term has been used in attempts to relate symptoms in patients with breast implants to autoimmunity putatively caused by the implants.

**audiometer**

instrument composed of an oscillator, amplifier and attenuator, used to measure hearing acuity.

*noun*, medical device technology  
McGraw-Hill Engineering

**Auger effect**

ejection of an electron from an atom without the emission of an X- or gamma-ray photon, as a result of the de-excitation of an excited electron within the atom.

*noun*, physics  
Oxford Science

**Auger spectroscopy**

form of surface analysis in which a focussed beam of electrons causes the emission of Auger electrons from the surface.

*noun*, chemistry  
Williams

**augmentation**

1. increase in size or volume of a part of the body.

*noun*, surgery  
Williams

2. correction of bony defects with tissue graft or biomaterial.

*noun*, surgery  
Heinemann Dental

3. alteration to the size and/or form of the breast by means of an implantable device, or injection of a substance, or other surgical procedure.

*noun*, surgery  
Williams

**aural**

route of administration of a drug or device through the ear.

*adjective*, medicine  
Szycher's Biomaterials

**auricle**

flap of the ear.

*noun*, anatomy  
Dorland Medical

**auscultation**

act of listening for sounds within the body.

*noun*, medicine  
Dorland Medical

**ausforming**

relating to the working of an alloy steel in the metastable austenite condition.

*adjective*, metallurgy  
Larousse Science

**austempering**

process of heating a steel to transform it to austenite, followed by cooling rapidly to a temperature above the martensitic change point, but below the critical range, so that the austenite isothermally transforms to bainite, which has properties resembling a quenched and tempered steel of the same composition.

*noun*, metallurgy  
Larousse Science

**austenite**

the higher density, high-temperature, face-centred cubic,  $\gamma$  form of iron and of solid solutions based on it.

*noun*, metallurgy  
Larousse Science

**austenitic**

form of steel that contains sufficient amounts of nickel, possibly in combination with other elements, to retain austenite at ambient temperature.

*adjective*, metallurgy  
Larousse Science

**aut(o)-**

self.

*prefix*, general  
Dorland Medical

**authorised representative**

any natural or legal person established in the European Community who, explicitly designated by the manufacturer, acts and may be addressed by

authorities and bodies in the Community instead of the manufacturer with regard to the latter's obligations under a relevant Directive.

*noun*, regulatory affairs

EU Directive

Notes: See entry under designated agent for U.S. equivalent.

#### **auto-oxidation**

1. spontaneous, self-catalysed oxidation of a substance occurring in the presence of air; usually involving a free-radical mechanism.

*noun*, chemistry

Szycher's Biomaterials

2. the most common process by which fats are oxidised.

*noun*, biology

Larousse Science

#### **autoantibody**

antibody formed in response to, and reacting against, an antigenic constituent of one's own tissues.

*noun*, immunology

Dorland Medical

#### **autoantigen**

antigen that, despite being a normal tissue constituent, is the target of a humoral or cell-mediated immune response, as in autoimmune disease.

*noun*, immunology

Dorland Medical

#### **autocatalysis**

catalysis in which a product of the reaction hastens the catalysis.

*noun*, chemistry

Dorland Medical

#### **autoclave**

1. airtight vessel for heating and sometimes agitating its contents under high steam pressure; used for industrial processing, sterilising, and cooking with moist or dry heat at high temperatures.

*noun*, engineering

McGraw-Hill Engineering

2. apparatus for the sterilisation of materials by steam under pressure.

*noun*, medical device technology

Dorland Medical

#### **autograft**

graft taken from a source in the individual who receives it; that is, the donor and recipient are the same.

*noun*, surgery

ESB Consensus Conference I

#### **autohaemolysis (autohemolysis)**

haemolysis of an individual's blood cells by his own serum.

*noun*, medicine

Dorland Medical

#### **autoimmune**

directed against the body's own tissue.

*adjective*, immunology

Dorland Medical

#### **autoimmune disease**

any of a group of disorders in which tissue injury is associated with humoral or cell-mediated responses to the body's own constituents.

*noun*, medicine

Dorland Medical

Notes: Includes rheumatoid arthritis, systemic lupus erythematosus and scleroderma.

#### **autoimmunity**

condition in which T or B lymphocytes capable of recognising 'self' constituents are present and activated so as to cause damage by cell-mediated immunity or to release autoantibodies and so to cause autoimmune diseases.

*noun*, immunology

Larousse Science

#### **autokeratoplasty**

grafting of corneal tissue from one eye to the other.

*noun*, surgery

Dorland Medical

#### **autologous**

1. belonging to the same organism.

*adjective*, medicine

Dorland Medical

2. relating to a product used in the treatment of a patient that is wholly derived from the tissues or fluids of that patient.

*adjective*, medical device technology

Williams

Notes: As for example, with any product derived from the patient's own blood.

#### **autologous fat**

fatty tissue transplanted from one site to another in a patient to provide for augmentation at the recipient site.

*noun*, surgery

Williams

#### **autolysis**

spontaneous disintegration of cells or tissues by autologous enzymes, as occurs after death and in some pathologic conditions.

*noun*, medicine

Dorland Medical

#### **autonomic nerve**

any of the parasympathetic or sympathetic nerves of the autonomic nervous system.

*noun*, anatomy

Dorland Medical

#### **autonomic nervous system**

functional division of the nervous system that innervates most glands, the heart, and smooth muscle tissue in order to maintain the internal environment of the body.

*noun*, anatomy

Biomedical Engineering Handbook

#### **autoplasty**

replacement or reconstruction of diseased or injured parts with tissues taken from another region of the patient's own body.

*noun*, medicine

Dorland Medical

#### **autopsy necropsy**

1. examination of a body after death.

*noun*, medicine  
Dorland Medical

2. examination by dissection of the body of an individual to determine cause of death and other medically relevant facts.

*noun*, medicine  
IRB Guidebook

#### **autoradiography**

making of a radiograph of an object or tissue by recording on a photographic plate the radiation emitted by radioactive material within the object.

*noun*, biology  
Dorland Medical

#### **autoregulation**

process occurring when some mechanism within a biological system detects control and adjusts for changes within the system.

*noun*, biology  
Dorland Medical

#### **autosome**

any non-sex determining chromosome.

*noun*, genetics  
Dorland Medical

#### **avascular**

without a blood supply.

*adjective*, medicine  
Black's Medical

#### **avascular necrosis**

death of a tissue because the blood supply has been cut off.

*noun*, medicine  
Black's Medical

#### **avidin**

protein which binds very strongly to biotin which can be labelled by fluorescence or by attachment of enzymes, and is used to reveal antibodies to which biotin has been conjugated.

*noun*, immunology  
Larousse Science

#### **avidity *functional affinity***

a measure of the strength of binding between an antigen and antibody.

*noun*, immunology  
Larousse Science

#### **avulsion**

1. tearing away of a structure or part.

*noun*, medicine  
Dorland Medical

2. complete detachment of a tooth from its socket through trauma.

*noun*, dentistry  
Heinemann Dental

#### **avulsion fracture**

separation of a small fragment of bone cortex at the site of attachment of a ligament or tendon.

*noun*, medicine  
Dorland Medical

#### **axial compression fracture**

fracture of a vertebra by excessive vertical force so that pieces of it move out in horizontal directions.

*noun*, medicine  
Dorland Medical

#### **axis**

line through the centre of a body, or about which a structure revolves.

*noun*, anatomy  
Dorland Medical

#### **axon**

process of a neurone by which impulses travel away from the cell body.

*noun*, medicine  
Dorland Medical

#### **az-, azo-**

denoting nitrogen.

*prefix*, chemistry  
Larousse Science

#### **B-lymphocyte *B-cell***

lymphocyte derived from precursors in the bone marrow which does not undergo differentiation in the thymus.

*noun*, immunology  
Larousse Science

#### **B-memory cell**

a resting B-cell which is derived from a B-cell that has been stimulated by a specific antigen in a germinal centre so as to multiply without going on to secrete antibody.

*noun*, immunology  
Larousse Science

#### **B-cell *B-lymphocyte***

lymphocyte derived from precursors in the bone marrow which does not undergo differentiation in the thymus.

*noun*, immunology  
Larousse Science

Notes: They make immunoglobulins, which are present at the cell surface and act as specific receptors for antigens and when stimulated, B lymphocytes manufacture and secrete large amounts of their characteristic immunoglobulin into the circulation.

#### **bacillus**

1. any rod shaped bacterium.

*noun*, biology  
Oxford Science

2. genus of bacteria (family bacillaceae), including gram-positive, spore-forming bacteria.

*noun*, medicine  
Dorland Medical

#### **backing**

metal plate in a denture or an artificial crown which protects or supports a tooth or tooth-facing.

*noun*, dentistry  
Heinemann Dental

#### **backscattered electron imaging**

mode of scanning electron microscopy in which the capture of back scattered electrons allows the visualisation of areas of different atomic number, hence facilitating identification of chemical species.

*noun*, material science  
Williams

#### **bacteraemia (bacteremia)**

condition characterised by the transient presence

of bacteria in the bloodstream.

*noun*, medicine  
Heinemann Dental

**bacteria**

large group of unicellular or multi-cellular organisms, lacking chlorophyll, multiplying rapidly by simple fission, the principle members of the prokaryotes.

*noun*, biology  
Larousse Science

**bacterial**

relating to or characterised by bacteria.

*adjective*, biology  
Heinemann Dental

**bacterial adhesion**

process in which bacteria attach themselves to the surfaces of biomaterials.

*noun*, biomaterials science  
Williams

**bacterial endocarditis** *infectious endocarditis*

infectious endocarditis caused by various bacteria, including streptococci, staphylococci, enterococci, gonococci, gram-negative bacilli, etc.

*noun*, medicine  
Dorland Medical

**bacterial toxin**

any toxin produced by bacteria, including exotoxins, endotoxins, and toxic enzymes.

*noun*, toxicology  
Dorland Medical

**bactericidal**

destructive to bacteria.

*adjective*, biology  
Dorland Medical

**bactericide**

substance which destroys bacteria.

*noun*, biology  
Larousse Science

**bacteriolysis**

destruction or disintegration of bacteria.

*noun*, biology  
Heinemann Dental

**bacteriostasis**

process of prevention or hindrance of growth of bacteria.

*noun*, biology  
Heinemann Dental

**bacteriostat**

substance or phenomenon which prevents the normal growth of micro-organisms.

*noun*, biology  
Larousse Science

**bacteriostatic**

preventing bacterial growth and cell division.

*adjective*, biology  
Black's Medical

**bacterium** bacteria

in general, any of the unicellular prokaryotic micro-organisms that commonly multiply by cell

division, lack a nucleus or membrane-bound organelles, and possess a cell wall.

*noun*, biology  
Dorland Medical

**Bacteroides**

genus of gram-negative, anaerobic, rod-shaped bacteria, which are normal inhabitants of the oral, respiratory, intestinal, and urogenital cavities of humans and animals.

*noun*, medicine  
Dorland Medical

**bacteruria**

presence of bacteria in the urine.

*noun*, medicine  
Larousse Science

**bainite**

microstructural product formed in steels when cooled from the austenite state at rates or transformation temperatures intermediate between those which form pearlite and martensite.

*noun*, metallurgy  
Larousse Science

**bake**

to harden by means of heat, as in the production of dental porcelain.

*verb*, material science  
Heinemann Dental

**Baker score**

classification of the extent of capsular contraction associated with breast implants.

*noun*, medical device technology  
Williams

**ball valve**

single non-return valve consisting of a ball resting on a cylindrical seating.

*noun*, engineering  
Larousse Science

Notes: The first generation of prosthetic heart valves were largely ball valves.

**ball-and-socket joint**

1. joint between two rods, permitting considerable relative angular movement in any plane.

*noun*, engineering

2. joint in which the hemispherical end of one bone is received into the socket of another.

*noun*, anatomy

Larousse Science

Notes: Primarily includes hip and shoulder joint.

**balloon angioplasty**

technique for the removal or displacement of atherosclerotic plaque by means of a catheter, inserted into the affected artery, the catheter having a balloon at its proximal end that can be inflated and drawn over the affected area.

*noun*, medical device technology

Williams

**balloon catheter**

indwelling catheter retained in the bladder by a balloon that is inflated with liquid.

*noun*, medical device technology  
ASTM

**bandage**

1. strip of gauze, muslin or other soft material, which may be in the form of a roll, triangular or tailed, bound round a part to hold dressings in place, to support or immobilise a part, or to apply pressure.

*noun*, medicine  
Heinemann Dental

2. to cover an area of the body by wrapping with a strip of gauze, muslin or other soft material.

*verb*, medicine  
Dorland Medical

**banding**

any of several techniques of staining chromosomes so that a characteristic pattern of transverse dark and light bands becomes visible, permitting identification of individual chromosome pairs.

*noun*, genetics  
Dorland Medical

**bar**

1. material of uniform cross-section, which may be cast, rolled or extruded.

*noun*, engineering  
Larousse Science

2. metal rod or wire used either in prosthetics or orthodontics as part of an appliance.

*noun*, dentistry  
Heinemann Dental

3. unit of pressure equal to  $10^5$  Pascals, or  $10^5$  Newtons per square meter, or  $10^6$  dynes per square centimeter.

*noun*, physics  
McGraw-Hill Engineering

**bar attachment**

bar linking two or more teeth or tooth roots to support and retain a denture.

*noun*, dentistry  
Heinemann Dental

**bar clasp**

type of clasp in which the arms are a direct extension of the connector bars of a denture.

*noun*, dentistry  
Heinemann Dental

**bar code**

unique bar code in the symbology of the Universal Product Code (UPC), the Health Industry Business Communications Council (HIBCC) or the European Article Number (EAN) assigned to a medical device by the manufacturer.

*noun*, regulatory affairs  
Canadian Medical Devices

**bar connector**

bar or strip that connects the parts of a partial denture.

*noun*, dentistry  
Heinemann Dental

**barbiturate**

salt or derivative of barbituric acid used for hypnotic and sedative effect.

*noun*, pharmacology  
Dorland Medical

**barium Ba**

heavy element in the second group of the periodic system, an alkaline earth metal, at no. 56.

*noun*, chemistry  
Larousse Science

**barium meal**

mixture of barium sulphate administered to render the alimentary canal opaque to X-rays.

*noun*, medicine  
Larousse Science

**barium sulphate** (barium sulfate)

insoluble white solid,  $\text{BaSO}_4$ .

*noun*, chemistry  
Oxford Science

Notes: A suspension of the sulphate in water is used in medicine to provide a contrast medium for X-rays of the stomach and intestine, and as an additive in plastics to render them radiopaque.

**barrier contraceptive**

contraceptive device that physically prevents spermatozoa from entering the endometrial cavity and fallopian tubes.

*noun*, medical device technology  
Dorland Medical

**basal**

relating to a base.  
*adjective*, general  
Heinemann Dental

**basal ganglia**

localised concentration of grey matter deep in the cerebral hemispheres and the midbrain.

*noun*, anatomy  
Larousse Science

**basal lamina**

thin sheet of extracellular matrix underlying epithelia, containing collagen, other proteins and the glycoprotein laminin.

*noun*, anatomy  
Larousse Science

**base**

1. the foundation on which a structure rests or is built.

*noun*, general  
Heinemann Dental

2. substance which tends to donate an electron pair or co-ordinate an electron.

*noun*, chemistry  
Larousse Science

**base metal**

any of the common metals, toward the electronegative end of the electrochemical series.

*noun*, chemistry  
Larousse Science

**base metal alloy**

alloy of base metals, such as nickel and chromium, that is used in the fabrication of a custom-made dental device.

*noun*, dentistry  
Szycher's Medical Devices

**base pair**

a purine and a pyrimidine, linked by hydrogen bonds, and found within double-stranded nucleic

acid.  
*noun*, genetics  
Larousse Science

**base plane**

imaginary plane used to estimate the retention in the construction of artificial dentures.  
*noun*, dentistry  
Heinemann Dental

**base plate** *denture base*

1. acrylic plate, part of an orthodontic appliance, which is fitted to the mucosa and the necks of the teeth, and holds the springs or clasps.  
*noun*, dentistry  
2. that part of a denture which rests on the alveolar ridges, and which may extend over the palate, and to which the artificial teeth are attached.  
*noun*, dentistry  
Heinemann Dental

**basement membrane**

extracellular matrix lying between epithelial cells and the underlying connective tissue.  
*noun*, anatomy  
Larousse Science

**basophil**

1. any structure, cell, or histologic element staining readily with basic dyes.  
*noun*, biology  
2. granular leucocyte with an irregularly shaped, relatively pale-staining nucleus that is partially constricted into two lobes, and with cytoplasm containing coarse bluish black granules of variable size.  
*noun*, biology  
Dorland Medical

**basophil leucocyte**

cell present in the blood with properties similar to mast cells which binds IgE and can release histamine and other mediators on contact with specific antigen. So called because its granules bind basic dyes.  
*noun*, immunology  
Larousse Science

**basophilia**

1. reaction of relatively immature erythrocytes to basic dyes whereby the stained cells appear blue, grey, or greyish-blue, or bluish granules appear.  
*noun*, medicine  
2. abnormal increase of basophilic leucocytes in the blood.  
*noun*, medicine  
Dorland Medical

**batch lot**

1. quantity of material that consists of a homogeneous mixture of common ingredients or a quantity of devices processed and controlled as an integral production run.  
*noun*, engineering  
ASTM  
2. one or more components or finished devices that consist of a single type, model, class, size, composition, or software version that are manufactured under essentially the same

conditions and that are intended to have uniform characteristics and quality within specified limits.  
*noun*, regulatory affairs  
CFR

**batch process**

any process or manufacture in which operations are completely carried out on specific quantities or a limited number of articles, as contrasted to continuous or mass-production.  
*noun*, engineering  
Larousse Science

**BCNU**

carmustine, a cytotoxic alkylating agent of the nitrosourea group, used as an antineoplastic agent.  
*noun*, pharmacology  
Dorland Medical

**bearing**

support provided to locate a revolving or reciprocating shaft.  
*noun*, engineering  
Larousse Science

**bearing metal**

metals or alloy used for that part of a bearing which is in contact with the journal.  
*noun*, engineering  
Larousse Science

**becquerel Bq**

unit of radioactivity, defined as the quantity of a radionuclide that undergoes one decay per second.  
*noun*, medicine  
Dorland Medical  
Notes: One curie equals  $3.7 \times 10^{10}$  becquerels.

**bed**

supporting structure or tissue.  
*noun*, general  
Dorland Medical

**bedding in**

process of accurately fitting a bearing to its shaft by scraping the former until contact occurs uniformly over the surface.  
*noun*, engineering  
Larousse Science

**Begg appliance**

orthodontic light wire appliance used to tip tooth crowns.  
*noun*, dentistry  
Heinemann Dental

**bench test**

complete functional test of a piece of apparatus, when new or after repair, carried out in a workshop or laboratory.  
*noun*, engineering  
Larousse Science

**bend radius**

the radius corresponding to the curvature of a bent specimen or part, as measured at the inside surface of the bend.  
*noun*, engineering  
McGraw-Hill Engineering

**bending moment**

at any transverse section of a beam, the algebraic sum of the moments of all the forces to either side of the section.

*noun*, engineering  
Larousse Science

**bending moment diagram**

diagram representing the variation of bending moment along a beam.

*noun*, engineering  
Larousse Science

**bending strength**

ability of a beam, or other structural member, to resist a bending moment.

*noun*, engineering  
Larousse Science

**bending stress**

internal tensile or compressive longitudinal stress developed in a beam in response to curvature induced by an external load.

*noun*, engineering  
McGraw-Hill Engineering

**bending test**

test made on a beam to determine its deflection and strength under bending load.

*noun*, engineering  
Larousse Science

**beneficence**

ethical principle that entails an obligation to protect persons from harm, expressed in two general rules: (1) do not harm; and (2) protect from harm by maximising possible benefits and minimising possible risks of harm.

*noun*, clinical practice  
IRB Guidebook

Notes: This principle was developed in the Belmont Report, a statement of basic ethical principles governing research involving human subjects issued by the US National Commission for the Protection of Human Subjects in 1978.

**benign**

not malignant or recurrent; not endangering life or health.

*adjective*, medicine  
Heinemann Dental

Notes: Generally describes a locally controlled growth or lesion, generally encapsulated, which does not produce metastases.

**bentonite**

clay, similar in its properties to Fuller's earth, formed by decomposition of volcanic glass, under water.

*noun*, chemistry  
Larousse Science

**benzalkonium chloride**

mixture of alkyl dimethylbenzylammonium chlorides.

*noun*, chemistry  
Szycher's Biomaterials

Notes: Used as an antiseptic, fungicide, preservative and detergent.

**benzene**

$C_6H_6$ . A solvent and intermediate in the production of phenolics, epoxies, styrene, and nylon.

*noun*, chemistry  
Szycher's Biomaterials

**benzene formula** *benzene ring*

generally recognised formula for benzene, established by Kekulé, representing a closed chain of six carbon atoms, to each of which a hydrogen atom is attached, the carbon atoms being linked alternately by single and double bonds.

*noun*, chemistry  
Larousse Science

**benzene ring** *benzene formula*

six carbon atoms forming a closed hexagon in the benzene molecule.

*noun*, chemistry  
Szycher's Biomaterials

**benzocaine**

white crystalline powder of ethyl para-aminobenzoate.

*noun*, pharmacology  
Larousse Science

Notes: Used as a local anaesthetic and for internal treatment of gastritis.

**benzoyl peroxide**

$C_6H_5COOOCOC_6H_5$ , bleaching agent and catalyst for free radical reactions.

*noun*, chemistry  
Larousse Science

Notes: Used widely as a catalyst for self-curing acrylic polymers used in dentistry and orthopaedics.

**beryllium** **Be**

light, white metallic element, at no.4.

*noun*, chemistry  
Larousse Science

Notes: Highly toxic, carcinogenic metal, occasionally found as impurity or minor alloying addition in some dental alloys.

**beta rays**

electrons ejected from radioactive substances with velocities as high as 0.98 of the velocity of light.

*noun*, physics  
Dorland Medical

**beta rhythm**

electroencephalographic waves having a frequency of 18 to 30 per second, typical during periods of intense activity of the nervous system.

*noun*, medicine  
Dorland Medical

**beta-adrenoceptor-blocking drug**

any drug that antagonises the beta effects of the sympathetic nervous system, particularly affecting the heart, bronchi, pancreas, liver and peripheral vasculature.

*noun*, pharmacology  
Black's Medical

Notes: Popularly referred to as a beta-blocker.

**betamethasone**

corticosteroid which has an action comparable to that of prednisolone, but in much lower dosage.

*noun*, pharmacology  
Black's Medical

**bevel**

1. outward inclination of the enamel edges of a prepared tooth cavity.

*noun*, dentistry  
Heinemann Dental

2. slanted patient end of the tracheal tube.

*noun*, medical device technology  
ASTM

**bias**

trend in the collection, analysis, interpretation, publication or review of data that can lead to conclusions that are systematically different from the truth.

*noun*, statistics  
Witkin

**biaxial**

said of a crystal having two optical axes.

*adjective*, chemistry  
Larousse Science

**biaxial stress**

condition in which there are three mutually perpendicular principal stresses; two act in the same plane and one is zero.

*noun*, engineering  
McGraw-Hill Engineering

**bicarbonate**

hydrogen carbonate, the acid salt of carbonic acid, the aqueous solution containing the ion (HCO<sub>3</sub>)<sup>-</sup>.

*noun*, chemistry  
Larousse Science

**bicep**

muscle with two insertions.

*noun*, anatomy  
Larousse Science

**biconcave**

having two concave surfaces.

*adjective*, general  
Heinemann Dental

**biconcave lens**

lens that is concave on both faces.

*noun*, physics  
Dorland Medical

**biconvex**

having two convex surfaces.

*adjective*, general  
Heinemann Dental

**biconvex lens**

lens that is convex on both faces.

*noun*, physics  
Dorland Medical

**bicuspid**

having two cusps.

*noun*, anatomy  
Heinemann Dental

Notes: A premolar tooth is bicuspid.

**bifurcate**

forked, as the roots of molar or other teeth.

*adjective*, anatomy  
Heinemann Dental

**bifurcation**

point at which the division of a structure into two branches occurs.

*noun*, anatomy  
Dorland Medical

Notes: Seen in blood vessels, teeth, etc.

**bilateral**

1. having, or pertaining to, two sides.

*noun*, general  
Larousse Science

2. occurring on both sides of the body.

*adjective*, medicine  
Black's Medical

**bile**

fluid secreted by the liver, concentrated in the gallbladder, and passed into the small intestine via the bile ducts.

*noun*, biology  
Dorland Medical

**bile duct**

duct formed by the junction of the hepatic duct and the cystic duct that leads to the intestine.

*noun*, anatomy  
Larousse Science

**bileaflet valve**

mechanical heart valve constructed with two semicircular leaflets, typically made of carbon, that are attached to an annulus and which open simultaneously to a fully open position that is essentially perpendicular to the valve orifice.

*noun*, medical device technology  
Williams

**biliary catheter**

flexible tubular device used for temporary or prolonged drainage of the biliary tract, for splinting of the bile duct during healing, or for preventing stricture of the bile duct.

*noun*, medical device technology  
CFR

**biliary endoprosthesis**

hollow stent inserted into a bile duct to allow biliary drainage across an obstruction.

*noun*, medical device technology  
Dorland Medical

**bilirubin**

reddish pigment occurring in bile formed as a breakdown product of haemoglobin.

*noun*, medicine  
Larousse Science

**billet**

semi-finished solid product which has been hot-worked by extrusion, forging and rolling.

*noun*, engineering  
Larousse Science

**bimodal**

pattern of distribution of a variable in which there are two peaks of maximum intensity.

*adjective*, statistics  
Williams

Notes: Used especially with respect to the particle size of distribution in a powder used in the formulation of a composite material such as a dental composite restorative material.

**binary**

1. composed of two elements.

*adjective*, general

2. divided into two branches or parts.

*adjective*, anatomy  
Heinemann Dental

**binder**

adhesive material used for holding particles of dry substances together.

*noun*, material science  
Szycher's Biomaterials

**binocular convergence**

response of a single neuron to the same location in the visual field of each eye.

*noun*, biology  
Biomedical Engineering Handbook

**bio -**

life; living.  
*prefix*, general  
Dorland Medical

**bioabsorbable**

capable of being degraded or dissolved and subsequently metabolised within an organism.

*adjective*, biomaterials science  
Williams

**bioactive**

pertaining to a material that displays bioactivity.

*adjective*, biomaterials science  
Williams

**bioactive glass**

1. any glass or glass ceramic that displays characteristics of bioactivity.

*noun*, biomaterials science  
Williams

Notes: Normally used with respect to glassy materials used for bone reconstruction.

2. amorphous solid that is not intrinsically adhesive and that is capable of forming a cohesive bond with both hard and soft tissue when exposed to appropriate *in vivo* or *in vitro* environments, such as simulated body fluid or tris-hydroxymethylaminomethane buffer, by developing a surface layer of hydroxycarbonate apatite by release of ionic species from the bulk material.

*noun*, biomaterials science  
ASTM

Notes: This definition is highly specific: the more general definition 3 is preferred.

3. any glass or glass ceramic that is used, either by itself or as a coating, to achieve a bond to mineralised tissue associated with the transfer of ion species and the formation of an apatitic layer at their interface.

*noun*, biomaterials science  
Williams

**bioactive glass-ceramic**

amorphous-derived crystalline solid that is not intrinsically adhesive and that is capable of forming a cohesive bond with bone and soft tissue when exposed to appropriate *in vivo* or *in vitro* environments, such as simulated body fluid or tris-hydroxymethylaminomethane buffer, by developing a surface layer of hydroxycarbonate apatite by release of ionic species from the bulk material.

*noun*, biomaterials science  
ASTM

Notes: There is little value in differentiating between glass and glass ceramic in this context and definition 3 of bioactive glass is preferred.

**bioactive material**

1. material which has been designed to induce specific biological activity.

*noun*, biomaterials science  
ESB Consensus Conference I

2. biomaterial that is designed to elicit or modulate biological activity.

*noun*, biomaterials science  
ESB Consensus Conference II

Notes: Definition 1 was refined in order to confine its use to biomaterials and to remove reference to the specificity of the activity.

**bioactivity**

phenomenon by which a biomaterial elicits or modulates biological activity.

*noun*, biomaterials science  
ESB Consensus Conference II

**bioadhesion**

adhesion of cells and/or tissue to the surface of a material.

*noun*, biomaterials science  
ESB Consensus Conference I

**bioadhesive**

1. adhesive derived from a natural organism.

*noun*, biology

2. adhesive used in a medical application.

*noun*, biomaterials science  
Williams

Notes: Definition 1 is the preferred definition.

**bioassay**

1. quantitative determination of a substance by measuring its biological effect.

*noun*, biology

2. determination of the power of a drug or of a biological product by testing its effect on an animal of standard size.

*noun*, pharmacology  
Larousse Science

**bioattachment**

fastening of cells and/or tissue to the surface of a material, including mechanical interlocking.

*noun*, biomaterials science  
ESB Consensus Conference I

**bioavailability**

extent and rate at which the active substance in a drug is taken up by the body.

*noun*, pharmacology  
Larousse Science

**bioburden**

total amount of organic matter contained within a defined space or product.

*noun*, biology  
Williams

**bioceramic**

1. any ceramic, glass or glass ceramic that is used as a biomaterial.

*noun*, biomaterials science  
Williams

Notes: The ESB Consensus Conference determined that, in common with the terms biometal and biopolymer, the term bioceramic should not be used to describe a ceramic biomaterial since it implies that the ceramic is living. However, common usage has determined that this definition is now generally accepted.

2. ceramic which upon implantation is transformed

into less soluble minerals.

*noun*, biomaterials science

ISO

Notes: Although forming part of an ISO Technical Report, the use of this definition is not recommended since the term should not convey the necessity to transform or dissolve.

### **biochemistry**

the chemistry of living organisms.

*noun*, biology

Heinemann Dental

### **biocidal**

pertaining to an agent that kills or inhibits the growth of micro-organisms.

*adjective*, biology

Williams

### **biocide**

agent that kills or inhibits the growth of micro-organisms such as bacteria, moulds, and fungi.

*noun*, biology

Szycher's Biomaterials

### **biocompatibility**

1. the ability of a material to perform with an appropriate host response in a specific application.

*noun*, biomaterials science

ESB Consensus Conference I

Notes: This is the preferred definition. Commonly referred to as the Williams' definition of biocompatibility.

2. the quality of not having toxic or injurious effects on biological systems.

*noun*, biomaterials science

Dorland Medical

Notes: This definition is typical of many attempts to related biocompatibility solely to the absence of harmful effects. This type of definition is not recommended since it does not address the positive or desired component of interactions between biomaterials and host tissue.

3. comparison of the tissue response produced through the close association of the implanted candidate material to its implant site within the host animal to that tissue response recognised and established as suitable with control materials.

*noun*, biomaterials science

ASTM

Notes: This definition is not recommended since it refers solely to implanted devices and the local tissue response.

### **biocompatible**

adjectival form of biocompatibility, often used to characterise a biomaterial.

*adjective*, biomaterials science

Williams

Notes: The use of this term is not recommended since it cannot place the biocompatibility of the material in the context of the application and since no material can perform with an appropriate response in all situations.

### **biocomposite**

1. one of the composite materials which occur in and are made by living organisms, such as bone or leather.

*noun*, anatomy

2. one of the composite materials which replace the function of living tissues or organs such as carbon fibre/epoxy resin artificial limbs.

*noun*, biomaterials science

Larousse Science

Notes: This definition is not recommended since it implies the composites are living, and should be replaced with the term composite biomaterial. (See note on bioceramic).

### **biodegradation**

1. gradual breakdown of a material mediated by specific biological activity.

*noun*, biomaterials science

ESB Consensus Conference I

2. breakdown of a material mediated by a biological system.

*noun*, biomaterials science

ESB Consensus Conference II

Notes: Definition 1 was refined in order to eliminate reference to a gradual process and to remove reference to the specificity of the activity.

3. alteration undergone by the biomaterial or medical device involving loss of their integrity or performance when exposed to a physiological or simulated environment.

*noun*, biomaterials science

ISO

Notes: Although forming part of an ISO Technical Report, the use of this definition is not recommended since it is not specific with respect to biological activity.

4. series of processes by which living systems render chemicals less noxious to the environment.

*noun*, biology

Dorland Medical

### **biodeterioration**

process of change in characteristics of a substance, material or object that arise from its presence in a biological environment and which cause an undesirable reduction in overall quality.

*noun*, material science

Williams

### **bioengineering**

1. application of engineering knowledge to the fields of medicine and biology.

*noun*, bioengineering

McGraw-Hill Engineering

2. engineering methods of achieving biosynthesis of animal and plant products, e.g. for fermentation processes.

*noun*, bioengineering

Larousse Science

Notes: In this context the term is equivalent to the preferred term biotechnology.

### **bioerodible polymer**

water-insoluble polymer that is converted under physiological conditions into water-soluble material(s) without regard to the specific mechanism involved in the erosion process.

*noun*, biomaterials science

Williams

### **bioerosion**

1. removal of matter from the surface of a biomaterial following implantation in the body without regard to the specific mechanism involved.

*noun*, biomaterials science

Williams

2. dissolution or fragmentation of a biomaterial implanted in the body occurring as a result of surface reactions.

*noun*, biomaterials science

ISO

Notes: Although forming part of an ISO Technical Report, the use of this definition is not recommended in view of the implication that specific mechanisms are involved.

### **bioethics**

branch of applied ethics which studies the value implications of practices and developments in the life sciences.

*noun*, general  
Medline

#### **biofeedback**

procedures whereby subjects are given information about physiological functions that are not normally available to conscious experience (e.g. heart rate, blood pressure etc.) with the object of gaining some conscious control over them.

*noun*, medicine  
Larousse Science

#### **biofilm**

an adherent layer that forms on materials exposed to certain biological environments and which consists of a three dimensional assembly of cellular material (usually including micro-organisms), extracellular polysaccharides and other debris.

*noun*, biomaterials science  
Williams

#### **bioglass**

1. glass based on SiO<sub>2</sub> which has a specific surface reactivity that enhances the interaction with surrounding tissue due to the action of additives, primarily alkali oxides.

*noun*, biomaterials science  
ISO

2. Trade name for series of bioactive glasses that have compositions in the range 40-55 wt % SiO<sub>2</sub>, 12-25 wt % CaO, 19-25 wt % Na<sub>2</sub>O and 6 wt % P<sub>2</sub>O<sub>5</sub>.

*noun*, biomaterials science  
Williams

#### **bioinert**

term used rather loosely to characterise materials than are considered to be inert in a biological environment.

*adjective*, biomaterials science  
Williams

#### **bioinformatics**

*noun*, general  
Notes: NEED DEF.

#### **biologic**

any therapeutic serum, toxin, anti-toxin, or analogous microbial product applicable to the prevention, treatment, or cure of diseases or injuries.

*noun*, regulatory affairs  
IRB Guidebook

#### **biological environment**

1. any environment that is capable of supporting living organisms.

*noun*, biomaterials science  
Williams

Notes: This term is used very loosely to denote a test environment which is generically similar to the environment in which a biomaterial may operate. In view of the vagueness, the term has little meaning and its use is not recommended.

2. conditions encountered within a human or animal body.

*noun*, biomaterials science  
Jonathan Black

Notes: The same comments for definition 1 apply.

#### **biological performance**

interaction between materials and living systems.

*noun*, biomaterials science  
Jonathan Black

#### **bioluminescence**

production of light by living organisms.

*noun*, biology  
Larousse Science

#### **biomass**

1. organic matter (mostly from plants) harvested as a source of energy.

*noun*, general

2. total dry mass of an animal or plant population.

*noun*, biology  
Larousse Science

#### **biomaterial**

1. non-viable material used in a medical device, intended to interact with biological systems.

*noun*, biomaterials science  
ESB Consensus Conference I

2. material intended to interface with biological systems to evaluate, treat, augment or replace any tissue, organ or function of the body.

*noun*, biomaterials science  
ESB Consensus Conference II

Notes: Definition 1 was refined to remove reference to non-viability and to make more explicit the intended functions of biomaterials.

3. synthetic, natural or modified natural material intended to be in contact and interact with the biological system.

*noun*, biomaterials science  
ISO

Notes: Although forming part of an ISO Technical Report, the use of this definition is not recommended since it implies that living natural materials (i.e. tissues) are biomaterials, which they are not, and because of the ambiguity over the phrase 'in contact'.

4. any substance (other than a drug), synthetic or natural, that can be used as a system or part of a system that treats, augments, or replaces any tissue, organ, or function of the body.

*noun*, biomaterials science  
Dorland Medical

Notes: This definition is not recommended since it does not contain reference to an interface with tissues; this definition would encompass the power supply or any microelectronic component of a pacemaker, which would not normally be considered to be biomaterials.

5. solid materials which occur in and are made by living organisms, such as chitin, fibrin or bone.

*noun*, biology  
Larousse Science

Notes: Although this is a sensible definition etymologically, it is not of any practical value since the examples given could be included in definition (2) above, and its use serves only to confuse the subject.

#### **biomaterials science**

1. the study of the structure and properties of biomaterials, the mechanisms by which they interact with biological systems and their performance in clinical use.

*noun*, biomaterials science  
Williams

Notes: The preferred definition.

2. the study and the knowledge of the interaction between living and non-living materials.

*noun*, biomaterials science

Jonathan Black

**biomechanics**

application of the laws of mechanics to the structures of the human body.

*noun*, bioengineering  
Heinemann Dental

**biomedical engineering**

application of electrical, mechanical, chemical, optical, and other engineering principles to understand, modify, or control human and animal systems.

*noun*, bioengineering  
Biomedical Engineering Handbook

Notes: Includes the design and manufacture of products that can monitor physiologic functions and assist in the diagnosis and treatment of patients.

**biomedical material**

material intended to interface with biological systems to evaluate, treat, augment or replace any tissue, organ or function of the body.

*noun*, biomaterials science  
Williams

Notes: In this context the term is synonymous with biomaterial.

**biomedical polymer**

any polymer that is used as a biomaterial.

*noun*, biomaterials science  
Williams

Notes: This includes synthetic polymer-based materials such as plastics, elastomers, fibres, textiles and gels. Should not be confused with 'biopolymer'.

**biomer B**

trade name for a polyurethane urea.

*noun*, biomaterials science  
Williams

**biomimetic coating**

any surface coating applied to a biomaterial that is structurally or chemically analogous to a tissue component and which is designed to generate a specific host response on the basis of the normal properties of that component.

*noun*, biomaterials science  
Williams

**biomimetic material**

any material that is structurally or chemically analogous to a component of plant or animal tissue and which can be incorporated into any product whose use is based on the characteristics of that tissue component.

*noun*, engineering  
Williams

**biomolecule**

molecule produced by living cells.

*noun*, biology  
Williams

Notes: Includes proteins, carbohydrates, lipids, nuclei acids.

**biomolecular product**

any product that is used in the prevention, treatment or cure of diseases or injuries that is derived from one or more biomolecules and produced by cells under any appropriate condition and subsequently processed and purified.

*noun*, medicine

Williams

**bionics**

1. science of systems whose function is based on living systems or which have characteristics of, or resemble, living systems or their analogues.

*noun*, bioengineering  
See note.

Notes: This term was coined by Jack Steele of the US Air Force in 1958 and confirmed in 1960 at a meeting at Wright-Patterson Air Force Base in Dayton Ohio.

2. the study of systems, particularly electronic systems, which function after the manner of living systems.

*noun*, bioengineering  
McGraw-Hill Engineering

**biopolymer**

naturally occurring long-chain molecules e.g. polysaccharides, proteins, DNA.

*noun*, biology  
Larousse Science

**bioprosthesis**

implantable prosthesis that consists totally or substantially of non-viable, treated, donor tissue.

*noun*, medical device technology  
ESB Consensus Conference I

**bioprosthetic valve**

artificial cardiac valve composed of biological tissue, usually porcine.

*noun*, medical device technology  
Dorland Medical

**biopsy**

removal of a sample of tissue from a living body and its subsequent microscopic examination, generally for purposes of diagnosis.

*noun*, medicine  
Heinemann Dental

**bioreactor**

any device, equipment or apparatus which is designed to contain structures, both cellular and molecular, that are capable of taking part in a specific biological process and from which the products of the process can be harvested or extracted.

*noun*, biology  
Williams

**bioresorption**

1. process of removal by cellular activity and/or dissolution of a material in a biological environment.

*noun*, biomaterials science  
ESB Consensus Conference I

2. process by which biomaterials are degraded in the physiological environment and the by-product eliminated or completely bioabsorbed.

*noun*, biomaterials science  
ISO

Notes: Although forming part of an ISO Technical Report, the use of this definition is not recommended since the term is not uniquely reserved for biomaterials.

**biosafety**

general term used to describe the relative absence of adverse effects associated with the use of a biomaterial.

*noun*, biomaterials science

Williams

Notes: The use of this term is no longer recommended in view of its vagueness and lack of objectivity.

### **biosensor**

device that uses an immobilised biological agent to detect or measure a chemical compound.

*noun*, chemistry

Oxford Science

### **biostability**

1. capacity of a material to resist chemical or structural degradation within a biological environment.

*noun*, biomaterials science

Williams

Notes: This is a relative term since all materials undergo some change over time in biological environments. In practice, it refers to situations where there are not clinical consequences associated with such change.

2. quality of a biomaterial or a medical device of which the physical, chemical and mechanical or other changes are not modified with respect to its behaviour, function or performance within the biological environment.

*noun*, biomaterials science

ISO

Notes: Although forming part of an ISO Technical Report, the use of this definitions is not recommended since it is too general and refers to events which are not material-specific.

### **biostable**

said of a material (usually a polymer) which resists chemical or structural degradation within a biological environment.

*adjective*, biomaterials science

Williams

Notes: See notes under biostability.

### **biosynthesis**

synthesis of complex organic molecules using enzymes and biological structures like ribosomes and chromosomes, either within or without the cell.

*noun*, biology

Larousse Science

### **biotechnology**

use of organisms or their components in industrial or commercial processes, and the development of associated techniques.

*noun*, biology

Larousse Science

### **biotelemetry**

use of telemetry techniques, especially radio waves, to study behaviour and physiology of living things.

*noun*, bioengineering

McGraw-Hill Engineering

### **biotin**

member of the vitamin B complex.

*noun*, medicine

Dorland Medical

### **biotinylation**

labelling of a probe with conjugated biotin, whose high affinity for avidin or anti-biotin antibodies is exploited to mark the spot to which the probe binds by indirect immunoassay.

*noun*, immunology

Larousse Science

### **biotransformation**

1. conversion of xenobiotic substances to their metabolites or to modified forms within living organisms.

*noun*, biology

Szycher's Biomaterials

2. any change which a biomaterial undergoes in the body due to the interaction between the material and the physical, chemical and mechanical or other changes that are not modified with respect to its behaviour, function or performance within the biological environment.

*noun*, biomaterials science

ISO

Notes: Although part of an ISO Technical Report, this definition should be avoided as it takes no account of established nomenclature and confuses material properties with biochemical reactions.

### **biphasic calcium phosphate**

any calcium phosphate material in which two of the crystalline forms co-exist.

*noun*, biomaterials science

Williams

### **bipolar**

1. having two poles.

*adjective*, general

2. having an axon at each end, as some nerve cells

*adjective*, biology

Larousse Science

### **birefringence** *double refraction*

phenomenon involving the splitting of incident light into two refracted rays vibrating at right angles to each other, causing two images to appear.

*noun*, physics

Larousse Science

### **birefringent**

said of a material that exhibits birefringence.

*adjective*, material science

Williams

Notes: A material has to be crystalline to be birefringent, the effect being caused by the anisotropic refractive index of certain crystal structures.

### **bis-GMA**

viscous aromatic dimethacrylate monomer, 2,2-bis[4-(2-hydroxy-3-methacryloyloxypropoxy)phenyl] propane used in the preparation of the matrix of some dental composite filling materials.

*noun*, biomaterials science

Williams

### **biscuit**

porcelain or other ceramic after it has been baked once, but before it has been glazed.

*noun*, material science

Heinemann Dental

### **bisphenol A**

intermediate in the production of epoxy, polycarbonate and phenolic resins.

*noun*, chemistry

Szycher's Biomaterials

### **bite**

1. wound or puncture made by a living organism.

*noun*, medicine

Dorland Medical

2. to grasp or to cut anything with the teeth.  
*verb*, dentistry  
3. impression, in some plastic material, of the teeth or the gums in occlusion, to show their relationship.  
*noun*, dentistry  
Heinemann Dental

**bitewing**

form of individual X-ray film, held in place in the mouth by a central wing or tab on which the teeth can close, which shows the crowns of both the upper and lower teeth on one film.  
*noun*, dentistry  
Heinemann Dental

**Black's classification**

classification of cavities in teeth based on tooth type, and sites or surfaces involved.  
*noun*, dentistry  
Heinemann Dental

**bladder**

membranous sac, such as one serving as a receptacle for a secretion, especially the urinary bladder.  
*noun*, anatomy  
Dorland Medical

**bladder stimulator**

any implantable device that is used to apply a stimulus to some part of the bladder in order to improve urine retention.  
*noun*, medical device technology  
Williams

**blade endosseous implant**

flat, blade-shaped design of dental implant, most commonly metal, inserted into a surgically prepared vertical channel in bone, used for the treatment of partial edentulousness.  
*noun*, dentistry  
Heinemann Dental

**blank**

the extraction vehicle not containing the specimen under test which is used for comparison with the extract liquid.  
*noun*, biomaterials science  
ASTM

**blast**

immature stage in cellular development before the appearance of the definitive characteristics of the cell.  
*noun*, biology  
Dorland Medical

**blastoma**

neoplasm composed of embryonic cells.  
*noun*, medicine  
Dorland Medical

**bleach**

1. to whiten teeth surfaces by means of chemicals.  
*verb*, dentistry  
2. any agent used for whitening surfaces.  
*noun*, chemistry  
Heinemann Dental

**bleb**

small vesicle containing clear fluid.  
*noun*, biology  
Larousse Science

**bleeder**

1. one who bleeds freely.  
*noun*, medicine  
2. any blood vessel cut during surgery that requires clamping, ligature, or cautery.  
*noun*, surgery  
Dorland Medical

**bleeding**

1. the escape of blood, as from an injured vessel.  
*noun*, medicine  
2. letting of blood for therapeutic or diagnostic purposes.  
*verb*, medicine  
Dorland Medical

**blend**

1. a uniform combination of two or more materials.  
*noun*, material science  
Szycher's Biomaterials  
2. physical mixture of thermoplastic polymers.  
*noun*, material science  
Larousse Science

**blepharism**

spasm of the eyelids.  
*noun*, ophthalmology  
Larousse Science

**blepharitis**

inflammation of the eyelids.  
*noun*, ophthalmology  
Dorland Medical

**blepharoplasty**

plastic surgery of the eyelids.  
*noun*, ophthalmology  
Dorland Medical

**blind study design** *masked study design*

study design comparing two or more interventions in which either the investigators, the subjects, or some combination thereof do not know the treatment group assignments of individual subjects.  
*noun*, statistics  
Witkin

**blindness**

lack or loss of ability to see; lack of perception of visual stimulation.  
*noun*, ophthalmology  
Dorland Medical

**blister**

1. vesicle, especially a bulla.  
*noun*, medicine  
Dorland Medical  
2. in sheet plastics, an imperfection, a rounded elevation of the surface, with boundaries that may be more or less sharply defined, somewhat resembling in shape a blister on the human skin.  
*noun*, polymer science  
ASTM

**block**

1. an obstruction or stoppage.

*noun*, medicine  
2. regional anaesthesia.  
*noun*, medicine  
Dorland Medical

**block copolymer**

essentially linear copolymer in which there are repeated sequences of polymeric segments of different chemical structure.  
*noun*, polymer science  
ASTM

**blockade**

1. blocking of the effect of a neurotransmitter or hormone by a drug.  
*noun*, pharmacology  
2. in histochemistry, a chemical reaction that modifies certain chemical groups and blocks a specific staining method.  
*noun*, medicine  
Dorland Medical

**blocking antibody**

antibody which combines preferentially with an antigen so as to prevent it from combining with IgE on mast cells, and thereby prevents type I allergic reactions.  
*noun*, immunology  
Larousse Science

**blood**

fluid circulating through the heart, arteries, capillaries, and veins, carrying nutrients and oxygen to body cells, and removing waste products and carbon dioxide.  
*noun*, medicine  
Dorland Medical

**blood bag**

any container used to store blood or certain blood products after collection from a donor and before re-infusion into a recipient.  
*noun*, medical device technology  
Williams  
Notes: Blood bags have been traditionally made from plasticised PVC.

**blood brain barrier BBB**

selective barrier separating the blood from the parenchyma of the central nervous system.  
*noun*, medicine  
Dorland Medical

**blood clot**

solid or semi-solid mass formed of blood, either in or out of the body.  
*noun*, medicine  
Dorland Medical

**blood component**

any part of a single-donor unit of blood separated by physical or mechanical means.  
*noun*, regulatory affairs  
CFR

**blood corpuscle**

cell normally contained in suspension in the blood.  
*noun*, medicine  
Larousse Science

**blood count**

the number of red or white corpuscles in the blood.  
*noun*, medicine  
Larousse Science

**blood donor**

volunteer who donates blood for administration to others.  
*noun*, medicine  
Larousse Science

**blood group**

erythrocytic allotype (or phenotype) defined by one or more cellular antigenic groupings controlled by allelic genes.  
*noun*, medicine  
Dorland Medical

**blood pressure**

pressure exerted by the blood on the artery walls.  
*noun*, medicine  
Heinemann Dental  
Notes: This is dependent on the force of the heart action, the elasticity of the vessel walls, capillary resistance, and the volume and viscosity of the blood and is normally measured by sphygmomanometry.

**blood reservoir**

device used in conjunction with short-term, extracorporeal circulation devices to hold a reserve supply of blood in the bypass circulation.  
*noun*, medical device technology  
Szycher's Medical Devices

**blood substitutes**

substances such as plasma, albumin and dextran, when used to substitute volume for loss of blood.  
*noun*, medicine  
Larousse Science

**blood transfusion *transfusion***

operation of transferring the blood (or any required constituent of it) of one person into the veins of another, either to make good any loss or to counteract deficiency.  
*noun*, medicine  
Larousse Science

**blood vessel**

one of the vessels conveying the blood throughout the body comprising arteries, capillaries, and veins.  
*noun*, anatomy  
Dorland Medical

**blood-clotting factor**

one of an internationally agreed scale of discernible factors concerned in blood-clotting, indicated by roman numerals.  
*noun*, medicine  
Larousse Science

**blood-material interaction**

general term used to denote any interaction that takes place between a biomaterial or medical device component and blood.  
*noun*, biomaterials science  
Williams

**blood/device interaction**

any interaction between blood or any component of blood and a medical device resulting in effects on the blood, or on any organ or tissue, or on the

device itself.  
*noun*, biomaterials science  
ISO

#### **bloom**

visible exudation or efflorescence of a performance additive on the surface of a material.  
*noun*, polymer science  
ASTM

#### **blow moulding** (blow molding)

method of fabricating hollow plastic objects, such as bottles, by forcing a parison into a mould cavity and shaping by internal air pressure.  
*noun*, engineering  
McGraw-Hill Engineering

#### **blow-out fracture**

fracture of the orbital floor caused by a sudden increase of intra-orbital pressure due to traumatic force.  
*noun*, ophthalmology  
Dorland Medical

#### **body centred cubic structure** (body centered cubic structure) **b.c.c.**

crystal lattice with a cubic unit cell, the centre of which is identical in environment and orientation to its vertices.  
*noun*, material science  
Larousse Science

#### **body centred tetragonal structure** (body centered tetragonal structure)

a distorted form of body-centred cubic structure in a crystal.  
*noun*, material science  
Larousse Science

#### **body fluid**

any of the liquids within the body and necessary for its normal functioning.  
*noun*, anatomy  
Heinemann Dental

#### **body orifice**

1. any natural opening in the body, as well as the external surface of the eyeball, or any permanent artificial opening, such as a stoma.  
*noun*, regulatory affairs  
EU Directive  
2. a natural opening or a permanent artificial opening of the body, such as a stoma.  
*noun*, regulatory affairs  
Canadian Medical Devices

#### **bolus**

rounded mass of food or pharmaceutical preparation ready to swallow, or such a mass passing through the gastrointestinal tract.  
*noun*, medicine  
Dorland Medical

#### **bond**

1. that which provides the attachment of one substance or component to another substance or component.  
*noun*, general  
Williams  
2. the link between atoms, considered to be

electrical and arising from the distribution of electrons around the nuclei of the bonded atoms.  
*noun*, physics  
Larousse Science

#### **bond angle**

angle between the lines connecting the nucleus of one atom to the nuclei of two other atoms bonded to it.  
*noun*, physics  
Larousse Science

#### **bond length**

distance between bonded atoms in a molecule.  
*noun*, chemistry  
Larousse Science

#### **bond strength**

1. bond dissociation energy, or the energy needed to separate a pair of bonded atoms from their equilibrium position to infinity.  
*noun*, chemistry  
Larousse Science  
2. degree of adhesion between bonded surfaces, measured in terms of the stress required to separate a layer of material from the base to which it is bonded.  
*noun*, engineering  
McGraw-Hill Engineering

#### **bonded strain gage**

strain gage in which the resistance element is a fine wire usually in zigzag form, embedded in an insulating backing material which is cemented to the pressure-sensing element.  
*noun*, engineering  
McGraw-Hill Engineering

#### **bonding**

1. interactions between individual atoms and molecules.  
*noun*, chemistry  
Larousse Science  
2. process of attaching one object securely to another object or surface, either by the use of chemical reactions or with an adhesive.  
*noun*, general  
Heinemann Dental

#### **bone**

1. the hard, rigid form of connective tissue constituting most of the skeleton of vertebrates, composed chiefly of calcium salts embedded in collagen fibre.  
*noun*, anatomy  
Notes: This definition refers to bone as a material.  
2. any distinct piece of the skeleton of the body.  
*noun*, medicine  
Dorland Medical  
Notes: This definition refers to bones as discrete structures.

#### **bone bonding**

the establishment, by physico-chemical processes, of continuity between an implant and bone matrix  
*noun*, biomaterials science  
ESB Consensus Conference II

#### **bone cap**

mushroom-shaped implantable medical device used to cover the severed end of a long bone, such as the

humerus or tibia, to control bone overgrowth in juvenile amputees.

*noun*, medical device technology  
CFR

**bone cement**

material made from polymethylmethacrylate or copolymers containing polymethylmethacrylate intended for use in arthroplastic procedures of the hip, knee, and other joints for the fixation of prosthetic implants to the living bone.

*noun*, medical device technology  
Szycher's Medical Devices

**bone conduction**

conduction of sound waves from the bones of the skull to the inner ear, rather than through the ossicles from, the outer ear.

*noun*, medicine  
Larousse Science

**bone defect filler**

any substance that is used to pack a defect or cavity within bone with the intention of integrating with the surrounding bone and restoring continuity.

*noun*, biomaterials science  
Williams

Notes: The substance may either be retained within the defect or be replaced by host bone.

**bone densitometer**

device intended to measure bone density and mineral content by X-ray or gamma ray transmission measurements through the bone and adjacent tissues.

*noun*, medicine  
CFR

**bone fixation cerclage**

implantable medical device that consists of a metallic ribbon or flat sheet or a wire which is wrapped around the shaft of a long bone, anchored to the bone with wire or screws, and used in the fixation of fractures.

*noun*, medical device technology  
CFR

**bone fixation fastener**

smooth or threaded metallic device that may be smooth on the outside, fully or partially threaded, straight or U-shaped; and may be either blunt pointed, sharp pointed, or have a formed, slotted head on the end, used for fixation of bone fractures, for bone reconstructions, as a guide pin for insertion of other implants, or implanted through the skin so that a pulling force (traction) may be applied to the skeletal system.

*noun*, medical device technology  
CFR

**bone graft**

piece of bone used to take the place of a removed bone or bony defect.

*noun*, surgery  
Dorland Medical

**bone ingrowth**

ingress of newly formed bone into the micro- or macro-porosity of a biomaterial placed in intimate

contact with any part of the skeletal system.

*noun*, biomaterials science  
Williams

**bone lacuna**

small cavity within the bone matrix, containing an osteocyte.

*noun*, anatomy  
Dorland Medical

**bone marrow**

soft tissue filling some bone cavities.

*noun*, anatomy  
Larousse Science

**bone marrow grafting**

transplantation of bone marrow from patients with healthy bone marrow to patients with bone marrow failure.

*noun*, medicine  
Larousse Science

**bone plate**

device intended to stabilise fractured bone structures.

*noun*, medical device technology  
CFR

**bone remodelling** (bone remodeling)

absorption of bone tissue and simultaneous deposition of new bone.

*noun*, medicine  
Dorland Medical

Notes: In normal bone the two processes are in dynamic equilibrium. In certain disease and conditions, including conditions associated with the presence of implanted medical devices, the absorption process predominates, leading to deficiencies in their volume or density of the bone. (See disuse atrophy).

**bone trabeculae**

anastomosing bony spicules in cancellous bone which form a meshwork of intercommunicating spaces that are filled with bone marrow.

*noun*, anatomy  
Dorland Medical

**bony ankylosis**

complete joint fixation through bone fusion.

*noun*, medicine  
Heinemann Dental

**border**

edge or boundary round an organ or tissue mass.

*noun*, anatomy  
Heinemann Dental

**boron B**

amorphous yellowish-brown element, at no. 5.

*noun*, chemistry  
Larousse Science

**boron carbide BC**

very hard material, used as an abrasive in cutting tools where extreme hardness is required.

*noun*, material science  
Larousse Science

**boron nitride BN**

compound isoelectronic with elemental carbon, and having two polymorphs, one similar to graphite and the other (borazon) similar to diamond.

*noun*, material science  
Larousse Science

**borosilicate glass**

family of glasses based on silica and borax.  
*noun*, material science  
Larousse Science

**bound state**

quantum mechanical state of a system in which the energy is discrete and the wavefunction is localised, as with an electron in an atom, where transitions between the bound states give rise to atomic spectral lines.  
*noun*, physics  
Larousse Science

**boundary friction**

friction between surfaces that are neither completely dry nor completely separated by a lubricant.  
*noun*, engineering  
McGraw-Hill Engineering

**boundary layer**

surface layer of gas or liquid across which molecular movement is diffusion limited.  
*noun*, physics  
Larousse Science

**boundary lubrication**

state of partial lubrication which may exist between two surfaces in the absence of a fluid oil film, due to the existence of adsorbed monomolecular layers of lubricant on the surfaces.  
*noun*, engineering  
Larousse Science

**bovine serum albumin BSA**

albumin derived from bovine serum that is used in biological experiments and in some drug formulations.  
*noun*, biology  
Williams

**bovine spongiform encephalopathy *mad cow disease* BSE**

infectious degenerative brain disease of cattle, originally caused by cattle feed processed from scrapie-infected sheep remains.  
*noun*, medicine  
Larousse Science  
Notes: Since a number of implantable medical devices have utilised tissues derived from cattle, BSE has focussed attention on the possibility that transmissible infective agents derived from animal tissues may cause disease in the human recipient.

**Bowman's membrane**

thin layer of cornea between the outer layer of stratified epithelium and the substantia propria.  
*noun*, ophthalmology  
Dorland Medical

**box**

that portion of a compound cavity of a tooth, excluding the occlusal surface, which has four surfaces.  
*noun*, dentistry  
Heinemann Dental

**boxing**

process of building up walls round a dental impression to produce a cast of the desired size and form, and to preserve the principal landmarks of the impression.  
*noun*, dentistry  
Heinemann Dental

**brace**

1. any orthodontic appliance, especially one with bands or wires across the anterior teeth.  
*noun*, dentistry  
Heinemann Dental  
2. device intended for medical purposes that is worn on the upper or lower extremities to support, to correct, or to prevent deformities or to align body structures for functional improvement.  
*noun*, medical device technology  
CFR

**bracket**

type of hook or clip on an orthodontic tooth band, used to attach ribbon archwire to banded teeth.  
*noun*, dentistry  
Heinemann Dental

**bradycardia**

slowness of the heartbeat, as evidenced by slowing of the pulse rate to less than 60.  
*noun*, medicine  
Dorland Medical

**bradykinesia**

abnormal slowness of the movements of the body.  
*noun*, medicine  
Larousse Science

**bradykinin**

inflammatory mediator formed from kininogen by the action of kallikrein that causes dilation of blood vessels and changes in vascular permeability, partly by increasing the release of arachidonic acid and production of prostaglandins.  
*noun*, biology  
Larousse Science

**brain**

that part of the central nervous system contained within the cranium.  
*noun*, anatomy  
Dorland Medical

**brain death**

irreversible coma.  
*noun*, medicine  
Dorland Medical

**brain stem**

stem-like portion of the brain connecting the cerebral hemispheres with the spinal cord.  
*noun*, anatomy  
Dorland Medical

**branch**

offshoot from the main trunk or stem, as of blood vessels and nerves.  
*noun*, anatomy  
Heinemann Dental

**branched polymer**

polymer in which the molecules are branched or have side chains.

*noun*, polymer science  
Szycher's Biomaterials

**branching**

growth of a new polymer chain from an active site on an established chain, in a direction different from the original chain.

*noun*, polymer science  
Szycher's Biomaterials

**brass**

alloy of copper and zinc.  
*noun*, engineering  
Larousse Science

**brazing**

process of joining two pieces of metal by fusing a layer of brass, spelter or brazing solder between the adjoining surfaces.

*noun*, engineering  
Larousse Science

**breakdown potential**

electrical potential that causes breakdown of an oxide film on a metal surface.

*noun*, metallurgy  
Williams

**breaking load** *ultimate load*

the load which, when steadily applied to a structural member, is just sufficient to break or rupture it.

*noun*, engineering  
McGraw-Hill Engineering

**breaking strength**

ability of a material to resist breaking or rupture.

*noun*, engineering  
McGraw-Hill Engineering

**breaking stress**

stress required to fracture a material, whether by compression, tension, or shear.

*noun*, engineering  
McGraw-Hill Engineering

**breast**

the front of the chest, especially its modified glandular structure, the mamma.

*noun*, anatomy  
Dorland Medical

**breast augmentation**

alteration to the size and/or form of the breast by means of an implantable device, or injection of a substance, or other surgical procedure.

*noun*, surgery  
Williams

**breast implant**

implantable device used to replace or augment breast tissue.

*noun*, medical device technology  
Williams

**breathing**

respiration.

*noun*, general  
Heinemann Dental

**bred animal**

animal specially bred for use in experiments in facilities accredited by, or registered with, the appropriate authority.

*noun*, regulatory affairs  
ISO

**bridge**

1. structure connecting two separate points, including parts of an organ.

*noun*, general  
Dorland Medical

2. an appliance, attached to remaining natural teeth, designed to restore aesthetics and function where teeth have been removed or failed to erupt.

*noun*, dentistry  
Heinemann Dental

**Brinell hardness number** **BHN**

a hardness rating obtained from the Brinell test; expressed in kilograms per square millimetre.

*noun*, engineering  
McGraw-Hill Engineering

**Brinell hardness test**

method of measuring the hardness of a material by measuring the area of indentation produced by a hard steel ball under standard conditions of loading.

*noun*, engineering  
Larousse Science

**British Standards Institution** **BSI.**

UK national organisation for the preparation and issue of standard specifications.

*noun*, regulatory affairs  
Larousse Science

**brittle**

1. easily broken.

*adjective*, general  
Longmans

2. unable to deform plastically before fracture

*adjective*, material science  
Williams

**brittle fracture**

fracture which occurs with no discernible plastic deformation.

*noun*, material science  
Larousse Science

**brittle temperature**

temperature at which a material changes in fracture behaviour, from ductile to brittle.

*noun*, material science  
Larousse Science

**brittleness**

that property of a material manifested by fracture without appreciable prior plastic deformation.

*noun*, material science  
McGraw-Hill Engineering

**broach**

fine tapered hand instrument, either smooth or barbed, used to remove tooth pulp in the treatment of infected root canals and as a reamer to enlarge root canals.

*noun*, dentistry  
Heinemann Dental

**bromocriptine**

dopamine agonist, an ergot alkaloid used as the mesylate salt to suppress prolactin secretion and thereby to inhibit lactation and stimulate ovulation.

*noun*, pharmacology

Dorland Medical

Notes: It is also used in the treatment of Parkinson's disease

**bronchial**

relating to or affecting the bronchi.

*adjective*, anatomy

Heinemann Dental

**bronchitis**

inflammation of the bronchial tubes.

*noun*, medicine

Heinemann Dental

**bronchodilator**

any agent causing dilatation of the bronchi.

*noun*, pharmacology

Heinemann Dental

**bronchoplasty**

plastic surgery of a bronchus including the surgical closure of a bronchial fistula.

*noun*, surgery

Dorland Medical

**bronchoscope**

instrument for inspecting the interior of the tracheobronchial tree and carrying out endobronchial diagnostic and therapeutic manoeuvres.

*noun*, medicine

Dorland Medical

**bronchoscopy**

examination of the bronchi through a bronchoscope.

*noun*, medicine

Dorland Medical

**bronchospasm**

spasmodic contraction of the bronchial tubes.

*noun*, medicine

Heinemann Dental

**bronchus**

one of a pair of large air passages connecting the trachea with the lungs.

*noun*, anatomy

Heinemann Dental

**bronze**

alloy primarily of copper and tin.

*noun*, material science

Larousse Science

**bruise** *contusion*

superficial injury caused by a blow, with no laceration but with discoloration of the skin and subcutaneous tissue produced by an accumulation of blood.

*noun*, medicine

Heinemann Dental

**brush border**

region of surface epithelium that possesses densely packed microvilli.

*noun*, anatomy

Oxford Science

**bruxism**

grinding or gnashing of the teeth, usually during sleep.

*noun*, dentistry

Heinemann Dental

**bubble oxygenator**

blood-gas transfer device in which a large exchange surface is obtained by the dispersion of oxygen bubbles in a venous blood stream, followed by coalescence of the foam and venting of excess gas or by spreading the venous blood over a continuously renewed column of foam generated by bubbling oxygen at the bottom of a reservoir.

*noun*, medical device technology

Biomedical Engineering Handbook

**bucca**

the cheek, especially the inner side of the mouth.

*noun*, anatomy

Heinemann Dental

**buccal**

relating to the mouth or inside of the cheek.

*adjective*, medicine

Black's Medical

**buccogingival**

relating to the cheek and the gums.

*adjective*, anatomy

Heinemann Dental

**buccolingual**

relating to the buccal and lingual surfaces of a tooth.

*noun*, dentistry

Heinemann Dental

**buckminsterfullerene** *buckyball*

form of carbon composed of clusters of 60 carbon atoms bonded together in a polyhedral structure composed of pentagons and hexagons.

*noun*, material science

Larousse Science

**buffer solution**

solution whose pH value is not appreciably changed by additions of acid or alkali.

*noun*, chemistry

Larousse Science

**buffing**

grinding down of a surface to remove extrusions or to expose the underlying material.

*noun*, engineering

Larousse Science

**bulbous**

resembling a bulb in either shape or nature.

*adjective*, anatomy

Heinemann Dental

**bulk material**

1. unit material used as load bearing implant.

*noun*, material science

ASTM

Notes: This definition is not recommended since it cannot only relate to load bearing devices.

2. the substantial mass of a solid structure from which most properties are derived.

*noun*, material science

Williams

Notes: Usually used to differentiate those properties which are derived for the bulk and those controlled by the surface.

### **bulk modulus $K$**

one of the four basic elastic constants for elastically isotropic materials, defined as the ratio of the applied, uniform triaxial stress (e.g. hydrostatic stress) to volumetric strain in a body.

*noun*, material science

Larousse Science

### **bullae**

1. projecting, rounded structure.

*noun*, anatomy

Heinemann Dental

2. blister; a circumscribed, fluid-containing, elevated lesion of the skin.

*noun*, medicine

Dorland Medical

### **bundle**

collection of fibres or strands, as of muscle fibres, or a fasciculus or band of nerve fibres.

*noun*, anatomy

Dorland Medical

### **bundle bone**

that part of the bony wall of a tooth socket into which Sharpey's fibres are embedded.

*noun*, dentistry

Heinemann Dental

### **bundle of His**

bundle of small specialised conducting muscle fibres extending from the wall of the right atrium to the septum between the ventricles; responsible for transmitting electrical impulses from atrium to ventricle.

*noun*, anatomy

Larousse Science

### **bur, burr**

1. form of drill used for creating openings in bone or similar hard material.

*noun*, surgery

Dorland Medical

2. rotary cutting instrument used in a dental handpiece for the preparation of cavities in teeth and the trimming of dental restorations.

*noun*, dentistry

Heinemann Dental

Notes: Burs are named according to the shape and pattern of the heads, or the purpose for which they are used.

### **burn**

injury to tissues caused by the contact with heat, flame, chemicals, electricity, or radiation.

*noun*, medicine

Dorland Medical

Notes: First degree burns show redness; second degree burns show vesication; third degree burns show necrosis through the entire thickness of the skin.

### **burnish**

to smooth or polish by friction either to obtain a high gloss or to secure the adaptation of two corresponding substances at a join.

*verb*, engineering

Heinemann Dental

### **burr hole cover**

plastic or metal device used to cover or plug holes drilled into the skull during surgery and to reattach cranial bone removed during surgery.

*noun*, surgery

CFR

### **bursa**

fluid-filled sac or sac-like cavity situated in places in tissues where friction occurs.

*noun*, medicine

Dorland Medical

### **bursa of Fabricius**

a primary lymphoid organ in avian species, located at the cloacal-hind gut junction.

*noun*, immunology

Roitt Immunology

Notes: The site of B-cell maturation.

### **bursitis**

inflammation of a bursa.

*noun*, medicine

Dorland Medical

### **bush**

cylindrical sleeve, usually inserted in a machine part to form a bearing surface for a pin or shaft.

*noun*, engineering

Larousse Science

### **butt welding**

joining of two plates or surfaces by placing them together, edge to edge, and welding along the seam thus formed.

*noun*, engineering

Larousse Science

### **butyl**

the radical  $C_4H_9$ .

*noun*, chemistry

Szycher's Biomaterials

### **butylene plastic**

plastic based on resins made by the polymerisation of butene or copolymerisation of butene with one or more unsaturated compounds, the butene being in greatest amount by weight.

*noun*, polymer science

ASTM

### **butyric acid**

any four-carbon carboxylic acid, either n-butyric acid or isobutyric acid.

*noun*, chemistry

Dorland Medical

### **bypass**

any surgically created pathway circumventing the normal anatomical pathway

*noun*, surgery

Dorland Medical

Notes: For example, an aortoiliac, a jejunal bypass or a coronary artery graft.

### **C-terminal**

the end of the peptide chain carrying the free alpha carboxyl group of the last amino acid, conventionally written to the right.

*noun*, biology  
Dorland Medical

**C1**

plasma protein involved in the recognition phase of complement activation, consisting of three sub-units C1q, C1r and C1s which are held together by calcium ions.

*noun*, immunology  
Williams

**C1 esterase**

complex that arises from the activation of C1 and which remains bound to the target cell surface.

*noun*, immunology  
Williams

**C1a inhibitor**

an inhibitor of activated esterase formed from complement C1.

*noun*, immunology  
Larousse Science

**C3a**

peptide fragment which is split off from complement protein C3 during its conversion to an enzymically active form.

*noun*, immunology  
Larousse Science

**C3b receptor**

receptor present on cell membranes which can bind C3b, the activated form of complement C3, or its breakdown products, C3bi or C3d.

*noun*, immunology  
Larousse Science

**C4a**

Small peptide derived from complement protein C4 by the action of C1 esterase in the classical activation pathway.

*noun*, immunology  
Williams

**C5a**

peptide fragment which is split off from complement protein C5 during its conversion to an enzymically active form.

*noun*, immunology  
Larousse Science

**cabbage coronary artery bypass graft**

a construction of new blood conduits between the aorta (or other major arteries) and segments of coronary arteries beyond lesions which partially or totally obstruct the lumen of those vessels, for the purpose of providing an increased blood supply to regions of the myocardium made ischemic by those lesions.

*noun*, surgery  
Biomedical Engineering Handbook

**cadaver**

1. a dead body; generally applied to a human body preserved for anatomical study.

*noun*, anatomy  
Dorland Medical

2. the body of a deceased person.

*noun*, medicine  
IRB Guidebook

**cadmium Cd**

white metallic element, at. no. 48.

*noun*, chemistry  
Larousse Science

**caecostomy** (cecostomy)

procedure to form an artificial opening into the caecum.

*noun*, surgery  
Larousse Science

**caecum**

the dilated commencement of the large intestine lying in the right lower corner of the abdomen.

*noun*, anatomy  
Black's Medical

**Caesarean section** (Cesarean section)

operation used to deliver a baby through its mother's abdominal wall.

*noun*, surgery  
Black's Medical

**caesium Cs**

metallic element, at. no. 55.

*noun*, chemistry  
Larousse Science

**caged-ball valve**

heart valve prosthesis comprising a sewing ring attached to a cage composed of curved struts that contains a free-floating ball.

*noun*, medical device technology  
Dorland Medical

**calcareous**

relating to or containing calcium or calcium salts.

*adjective*, anatomy  
Heinemann Dental

**calcific**

pertaining to the presence of calcium.

*adjective*, biology  
Williams

**calcification**

1. the deposition of calcium salts in a tissue.

*noun*, medicine  
Dorland Medical

Notes: This may be a normal process within tissue development or an abnormal, pathological process.

2. the deposition of calcium salts onto the surface or within the structure of biomaterials within the human body.

*noun*, biomaterials science  
Williams

**calcified**

hardened by the deposition of calcium salts.

*adjective*, medicine  
Heinemann Dental

**calcination**

reduction of a substance to powder, or the removal of volatile constituents from a compound by heat.

*noun*, material science  
Heinemann Dental

**calcine**

to reduce to powder, to roast or to dry, by heat.

*verb*, material science

Heinemann Dental

**calcined powder**

powder produced or modified by heating to a high temperature.

*noun*, material science  
Larousse Science

**calcite**

the commonest crystalline form of calcium carbonate, showing trigonal symmetry and a great variety of crystal habits.

*noun*, material science  
Larousse Science

**calcitonin**

polypeptide hormone secreted by cells of the thyroid gland, which lowers calcium and phosphate concentration in plasma and inhibits bone resorption.

*noun*, medicine  
Dorland Medical

**calcium Ca**

soft grey metallic element, at. no. 20.

*noun*, chemistry  
Larousse Science

Notes: Never used in the metallic form but is an essential element for living organisms.

**calcium alginate**

calcium salt of alginic acid that forms a hydrocolloid in water.

*noun*, biomaterials science  
Williams

Notes: Used as a dental impression material and in wound dressings.

**calcium carbonate**

insoluble salt,  $\text{CaCO}_3$ , occurring naturally in shells, limestone, and chalk.

*noun*, chemistry  
Dorland Medical

**calcium channel**

'pore' through a cell membrane that specifically allows the passage of calcium ions.

*noun*, biology  
Larousse Science

**calcium channel blocking drug**

any of a group of drugs which interfere with intracellular calcium flux.

*noun*, pharmacology  
Larousse Science

**calcium hydroxide cavity liner**

material intended to be applied to the interior of a prepared dental cavity before insertion of restorative material, such as amalgam, to protect the pulp of a tooth.

*noun*, dentistry  
CFR

**calcium hydroxyapatite**

a common form of apatite, of ideal chemical formula  $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ .

*noun*, biomaterials science  
Williams

Notes: As with all apatites, it is usually non-stoichiometric and has minor amounts of other ions. It may exist in hexagonal or monoclinic crystal structure, the crystallisation behaviour

being determined by the substitutional nature of other ionic species and processing conditions. Widely used as a biomaterial in orthopaedic and dental/maxillofacial/craniofacial applications.

**calcium phosphate**

one of several salts containing calcium and the phosphate radical.

*noun*, chemistry  
Dorland Medical

Notes: Several calcium phosphates exist as components of hard tissues in mammalian and non-mammalian organisms. Also used in various structures and states as ceramic biomaterials.

**calcium pump**

mechanism of active transport of calcium ( $\text{Ca}^{2+}$ ) across a cell membrane, as of the sarcoplasmic reticulum of muscle cells, against a concentration gradient.

*noun*, biology  
Dorland Medical

Notes: The mechanism is driven by enzymatic hydrolysis of ATP.

**calcium stearate**

a stabiliser and lubricant.

*noun*, chemistry  
Szycher's Biomaterials

**calculus**

abnormal concretion, occurring in the body, generally in the urinary system, bile duct, gall bladder, or salivary glands.

*noun*, medicine  
Heinemann Dental

Notes: It usually contains calcium salts.

**calendaring**

process of forming sheets or coatings by passing thermoplastic resins through a series of heated rolls.

*noun*, polymer science  
Szycher's Biomaterials

**calix**

cup-shaped organ or cavity.

*noun*, anatomy  
Dorland Medical

**calliper splint (caliper splint)**

splint fitted to a weak or injured leg so that the patient may walk without any pressure on the foot, the weight of the body being taken by the hip bone.

*noun*, medicine  
Larousse Science

**callipers (calipers)**

instrument, similar to a pair of compasses, having curved legs, and used to measure diameters of cylindrical bodies.

*noun*, engineering  
Heinemann Dental

**callosity**

thickening of the skin as a result of irritation or friction.

*noun*, medicine  
Larousse Science

**callus**

1. tissue consisting of large, thin-walled parenchymatous cells developing as a result of injury, as in wound healing and grafting or in

tissue culture.

*noun*, medicine

Larousse Science

2. a disorganised network of woven bone formed about the ends of a broken bone, which is absorbed as repair is completed.

*noun*, medicine

3. localised hyperplasia of the horny layer of the epidermis due to pressure or friction.

*noun*, medicine

Dorland Medical

### **calomel**

mercury (I) chloride, Hg<sub>2</sub>Cl<sub>2</sub>.

*noun*, chemistry

Larousse Science

Notes: Used as a reference electrode in certain electrochemical cells.

### **calvarium**

dome-like superior portion of the cranium, comprising the superior portions of the frontal, parietal, and occipital bones.

*noun*, medicine

Dorland Medical

### **Calvé-Perthes disease**

osteochondrosis of capitular epiphysis of femur.

*noun*, medicine

Dorland Medical

### **Canada Balsam**

yellowish liquid, of pine-like odour, soluble in ethoxyethane, trichloromethane, benzene.

*noun*, biology

Larousse Science

### **canal**

relatively narrow tubular passage or channel.

*noun*, anatomy

Dorland Medical

### **canaliculus**

any small channel.

*noun*, anatomy

Larousse Science

Notes: Examples are: in the liver, an intercellular bile channel; in bone, one of the ramified passages uniting the lacunae; in nerve cells, a fine channel penetrating the cytoplasm of the cell-body.

### **canalisation (canalization)**

the formation of canals, natural or pathological.

*noun*, medicine

Dorland Medical

Notes: For example, the formation of a new channel in a clot that is blocking the lumen of a blood vessel.

### **cancellous**

having a spongy structure, with obvious interstices.

*adjective*, anatomy

Larousse Science

### **cancellous bone**

any bone having a lattice-like, spongy structure.

*noun*, anatomy

Larousse Science

Notes: Typically seen within the epiphyses of long bones and within the alveolar bone of mandible and maxilla.

### **cancer**

general term used to refer to a malignant tumour,

irrespective of the tissue of origin.

*noun*, medicine

Black's Medical

### **Candida**

genus of yeast-like fungi, commonly found in the normal flora of the skin, mouth and intestinal tract.

*noun*, medicine

Heinemann Dental

Notes: Often associated with the microbial contamination of dentures, treated by drugs such as nystatin.

### **candidiasis**

infection by fungi of the genus *Candida*, generally *C. albicans*, most commonly involving the skin, oral mucosa (thrush), respiratory tract, and vagina.

*noun*, medicine

Dorland Medical

### **canine**

pertaining to, or characteristic of a dog.

*adjective*, biology

Dorland Medical

### **canine fossa**

a depression on the external surface of the maxilla superolateral to the canine tooth socket.

*noun*, dentistry

Dorland Medical

### **canine tooth**

a single-cusped tooth, resembling that of a dog, found between the lateral incisor and the first molar or premolar.

*noun*, dentistry

Heinemann Dental

### **canker**

an ulceration, especially of the lip or oral mucosa.

*noun*, medicine

Dorland Medical

### **cannula**

tube for insertion into the body for the injection or removal of fluids or gases.

*noun*, medical device technology

Larousse Science

### **canthus**

angle at either end of the fissure between the eyelids.

*noun*, ophthalmology

Dorland Medical

### **cantilever**

1. beam or member securely fixed at one end and hanging free at the other end.

*noun*, engineering

2. in an atomic force microscope a very small beam that has a tip attached to its free end, the deflection of the beam being used to measure the force acting on the tip.

*noun*, physics

McGraw-Hill Engineering

### **cantilever bridge**

in dentistry, a bridge of which only one end is attached to an abutment and the other is seated on the alveolar ridge.

*noun*, dentistry

Heinemann Dental

**cap**

any substance or structure covering an exposed pulp in a tooth.

*noun*, dentistry

Heinemann Dental

**cap splint**

cast metal dental splint fitting accurately over the crowns and occlusal surfaces of the teeth and cemented into place.

*noun*, dentistry

Heinemann Dental

**capillary**

1. any very fine tube.

*noun*, general

Heinemann Dental

2. one of the minute vessels connecting the arterioles and venules, the walls of which act as a semi-permeable membrane for interchange of various substances between the blood and tissue fluid.

*noun*, medicine

Dorland Medical

**caprine**

relating to goats.

*adjective*, biology

Williams

**$\epsilon$ -caprolactone**

monomer  $\text{CO}(\text{CH}_2)_5\text{O}$  used in the synthesis of the degradable polymer poly( $\epsilon$ -caprolactone).

*noun*, medicine

Dorland Medical

**capsula cap**

Latin for capsule; used in prescription writing.

*noun*, pharmacology

Heinemann Dental

**capsular**

relating to a capsule.

*adjective*, anatomy

Heinemann Dental

**capsular contracture** *constrictive fibrosis*

uncomfortable or painful condition in patients with breast implants in which the fibrous capsule that forms around the implant becomes dense and oriented such that it shrinks and compresses the device.

*noun*, medical device technology

Williams

**capsule**

1. enclosing structure, as a soluble container enclosing a dose of medicine.

*noun*, general

2. cartilaginous, fatty, fibrous, membranous structure enveloping another structure, organ, or part.

*noun*, anatomy

Dorland Medical

3. fibrous, membranous structure, of varying cellularity and thickness that forms around a biomaterial or medical device after implantation.

*noun*, biomaterials science

Williams

4. elastic envelope covering the lens of the eye.

*noun*, ophthalmology

Larousse Science

**capsulectomy**

excision of a capsule, especially a joint capsule or lens capsule.

*noun*, surgery

Dorland Medical

**capsulotomy**

1. incision of a capsule, as that of the lens or of a joint.

*noun*, surgery

Dorland Medical

2. procedure, either open or closed, for disrupting the capsule that forms around an implanted breast prosthesis, intended to relieve the associated pain.

*noun*, surgery

Williams

**carat**

measure of purity of gold.

*noun*, material science

Heinemann Dental

**carbide**

binary compound of metal with carbon.

*noun*, material science

Larousse Science

**carbide tool**

cutting and forming tool used for hard materials or at high temperatures made of carbides of tungsten, tantalum or other metals held in a matrix of cobalt, nickel etc.

*noun*, engineering

Larousse Science

**carbidopa**

inhibitor of the decarboxylation of levodopa in extracerebral tissues, used in combination with levodopa as an anti-Parkinsonian agent.

*noun*, pharmacology

Dorland Medical

**carbohydrate**

one of a group of organic compounds based on the general formula  $\text{C}_x(\text{H}_2\text{O})_y$ .

*noun*, chemistry

Oxford Science

Notes: Includes sugars, starches, detritins and celluloses.

**carbon C**

amorphous or crystalline element, at. no. 6.

*noun*, chemistry

Larousse Science

**carbon arc welding**

arc welding carried out by means of an arc between a carbon electrode and the material to be welded.

*noun*, engineering

Larousse Science

**carbon fibre** (carbon fiber)

fibre of carbon in which the carbon has an oriented crystal structure, usually made by heating textile fibres.

*noun*, material science

Oxford Science

**carbon fibre reinforced plastic** (carbon fiber reinforced plastic)

class of composite materials comprising a polymeric matrix reinforced with carbon fibre.

*noun*, material science

Larousse Science

Notes: The matrix is usually a thermosetting resin such as an epoxy or phenolic resin, or less frequently a thermoplastic polymer such as PEEK, polysulphone or polyethylene. Their strength-to-weight ratio makes them suitable for many orthotic devices, non-implantable medical devices, while the equivalence of their elastic moduli to those of bone have suggested uses in orthopaedic prosthesis.

**carbon steel**

steel whose properties are determined principally by the amount of carbon present and which contains no other deliberate alloying ingredient except those necessary to ensure deoxidation and physical quality.

*noun*, metallurgy

Larousse Science

**carbonate**

compound containing the acid radical of carbonic acid (CO<sub>3</sub> group).

*noun*, chemistry

Larousse Science

**carbonyl**

carbon monoxide when acting as a radical, —CO.

*noun*, chemistry

Larousse Science

**carboplatin**

antineoplastic agent used in the treatment of ovarian carcinoma.

*noun*, pharmacology

Dorland Medical

**carboxyl group**

the organic group —COOH, present in carboxylic acids.

*noun*, chemistry

Oxford Science

**carboxylase**

enzyme that catalyses the removal of carbon dioxide from the carboxyl group.

*noun*, biology

Dorland Medical

**carboxylic acid**

R—(COOH)<sub>n</sub>. An organic compound having one or more carboxyl radicals.

*noun*, chemistry

Larousse Science

**carboxymethylcellulose**

carbohydrate used to provide mechanical protection and as a vehicle for topical drugs.

*noun*, pharmacology

Heinemann Dental

**carbuncle**

necrotising infection of skin and subcutaneous tissues composed of a cluster of furuncles.

*noun*, medicine

Dorland Medical

**carcino-**

signifying carcinoma.

*prefix*, medicine

Heinemann Dental

**carcinogen**

any substance which causes cancer.

*noun*, medicine

Dorland Medical

**carcinogenesis**

1. in general the production of cancer.

*noun*, medicine

Heinemann Dental

2. the inducement in a biological cell of the change which will eventually cause it to become a cancer.

*noun*, medicine

Larousse Science

**carcinogenicity tumourigenicity**

ability or tendency to produce cancer.

*noun*, medicine

Dorland Medical

Notes: Although tumourigenicity is a better term technically since all cancers involve tumours but not all involve carcinomas, carcinogenicity is the preferred term because of the greater common usage.

**carcinogenicity test**

test to determine the carcinogenic or tumourigenic potential of devices, materials and/or their extracts from either a single or multiple exposures or contacts over a period of the total life-span of the test animal.

*noun*, biomaterials science

ISO

Notes: These tests may be designed in order to examine both chronic toxicity and tumourigenicity in a single experimental study. Carcinogenicity tests should be conducted only if there are suggestive data from other sources. These tests should be appropriate for the route and duration of exposure or contact.

**carcinoma**

malignant new growth made up of epithelial cells tending to infiltrate surrounding tissues and to give rise to metastases.

*noun*, medicine

Dorland Medical

**carcinosarcoma**

mixed tumour containing characteristics of both carcinoma and sarcoma.

*noun*, medicine

Heinemann Dental

**cardi-, cardio-**

prefix signifying heart.

*prefix*, medicine

Heinemann Dental

**cardiac**

pertaining to the heart.

*adjective*, medicine

Dorland Medical

**cardiac aneurysm**

fibrous dilatation of one or other ventricle due to destruction of cardiac muscle.

*noun*, medicine

Larousse Science

**cardiac arrest**

sudden cessation of the pumping function of the heart with the disappearance of arterial blood

pressure.  
*noun*, medicine  
Dorland Medical

**cardiac catheter**

long, fine catheter designed for passage, usually through a peripheral blood vessel, into the chambers of the heart under radiographic control.  
*noun*, medical device technology  
Dorland Medical

**cardiac catheterisation** (cardiac catheterization)

passage of a small catheter through a vein in an arm or leg or the neck and into the heart, permitting the securing of blood samples, determination of intracardiac pressure, detection of cardiac anomalies, planning of operative approaches, and determination, implementation or evaluation of appropriate therapy.  
*noun*, medicine  
Dorland Medical

**cardiac cycle**

complete cardiac movement, or heart beat, including systole, diastole, and intervening pause.  
*noun*, medicine  
Dorland Medical

**cardiac muscle**

the muscle of the heart, composed of striated but involuntary muscle fibres, comprising the chief component of the myocardium and lining the walls of the adjoining large vessels.  
*noun*, anatomy  
Dorland Medical

**cardiac output**

amount of blood pumped by the heart per minute.  
*noun*, medicine  
Szycher's Biomaterials

**cardiac pacemaker**

implantable device that electrically stimulates the heart at a certain rate, used in absence of normal function of the heart's sino-atrial node.  
*noun*, medical device technology  
Biomedical Engineering Handbook

**cardiac tamponade**

compression of the heart caused by increased intrapericardial pressure due to collection of blood or fluid in the pericardium.  
*noun*, medicine  
Dorland Medical

**cardiogram**

trace produced by electrocardiogram (ECG) showing voltage waveform generated during heart beats.  
*noun*, medicine  
Larousse Science

**cardiology**

the part of medical science concerned with the function and diseases of the heart.  
*noun*, medicine  
Larousse Science

**cardiomegaly**

hypertrophy of the heart.  
*noun*, medicine

Dorland Medical

**cardiomyopathy**

general diagnostic term designating primary non-inflammatory disease of the heart.  
*noun*, medicine  
Dorland Medical

**cardiomyoplasty**

technique in which a segment of skeletal muscle is transposed to a position in which it is intimate contact with the heart and, after electrical stimulation to make it fatigue resistant, is able to assist in the mechanical function of the failing heart.  
*noun*, surgery  
Williams

**cardiopathy**

any disorder or disease of the heart.  
*noun*, medicine  
Dorland Medical

**cardiopulmonary bypass** **CPB**

procedure whereby blood is prevented from circulating through the heart cavities and the lungs but instead is passed through a device that consists of a pump and oxygenator in order to perform the function of heart and lungs during open heart surgical procedures.  
*noun*, medicine  
Biomedical Engineering Handbook

**cardiopulmonary bypass device**

multi-component device designed to perform the dual function of the heart and lungs during open heart surgery.  
*noun*, medical device technology  
Szycher's Biomaterials

**cardiopulmonary resuscitation** **CPR**

artificially replacing heart and respiration function through rhythmic pressure on the chest, intended to restimulate normal function.  
*noun*, medicine  
Biomedical Engineering Handbook

**cardioscope**

device used to provide access, illumination, observation and manipulation of the heart cavities.  
*noun*, medical device technology  
Szycher's Biomaterials

**cardiotomy**

surgical incision of the heart.  
*noun*, surgery  
Dorland Medical

**cardiovascular**

pertaining to the heart and blood vessels.  
*adjective*, medicine  
Larousse Science

**cardioversion**

conversion, by electrical means, of a cardiac tachyarrhythmia to a more normal rhythm that is physiologically tolerable.  
*noun*, medicine  
Szycher's Biomaterials

**cardioverter**

an energy-storage capacitor-discharge type of condenser which is discharged with an inductance to deliver a direct-current shock which restores normal rhythm of the heart.

*noun*, medical device technology  
Dorland Medical

**caries**

decay, as of bone or teeth.

*noun*, medicine  
Dorland Medical

**cariogenic**

pertaining to substance or food which causes tooth decay.

*adjective*, dentistry  
Larousse Science

**carious**

relating to, or characterised by, caries.

*adjective*, dentistry  
Heinemann Dental

**carotid**

pertaining to the carotid artery, the principal artery of the neck.

*adjective*, medicine  
Dorland Medical

**carotid body**

small neurovascular structure lying in the bifurcation of the right and left carotid arteries, containing chemoreceptors that monitor oxygen content in blood and help to regulate respiration.

*noun*, anatomy  
Dorland Medical

**carotid sinus**

dilated portion of the common carotid artery at its division into internal and external branches.

*noun*, medicine  
Larousse Science

**carpal**

pertaining to the carpus.

*adjective*, anatomy  
Dorland Medical

**carpus**

joint between the arm and hand, made up of eight bones; the wrist.

*noun*, anatomy  
Dorland Medical

**carrier**

any molecule which when conjugated to a non-immunogenic molecule (e.g. a hapten) makes the latter immunogenic by providing epitopes for helper T-cells which the hapten lacks.

*noun*, immunology  
Roitt Immunology

**cartilage**

hard but pliant form of connective tissue in which the cells are embedded in a firm matrix of chondroitin or chondrin, extensively distributed in the musculoskeletal system and elsewhere in the body.

*noun*, anatomy  
Larousse Science

Notes: Different forms of cartilage constitute the bearing

surface of synovial joints, the structural component of tubes such as the trachea, the rib cartilage and part of the external ear and nose.

**carver**

any hand instrument used in dentistry for carving and modelling, especially in the making of inlays, crowns and dentures.

*noun*, dentistry  
Heinemann Dental

**cascade**

series (as in a physiological process) that, once initiated, continues to the end, each step being triggered by the preceding one, sometimes with cumulative effect.

*noun*, biology  
Dorland Medical

Notes: Examples include the clotting cascade in blood and complement activation pathways.

**case hardening**

the hardening of the surface layer of steel, or other alloys.

*noun*, metallurgy  
Oxford Science

**case report**

report of a disease or health outcome in a single patient.

*noun*, medicine  
Witkin

**case series**

report of a disease or health outcome in a series of patients.

*noun*, medicine  
Witkin

**case-control study**

observational epidemiologic study in which persons with an outcome of interest or disease (cases) are compared with a group of persons without the outcome or disease (controls).

*noun*, medicine  
Witkin

**caseation**

process of becoming cheese-like, e.g. in tissue infected with tubercle bacillus the cells break down into an amorphous cheese-like mass.

*noun*, medicine  
Larousse Science

**cast**

1. positive copy of an object, e.g. a mould of a hollow organ.

*noun*, general  
Dorland Medical

2. to form a liquid or plastic substance into a fixed shape by letting it cool in the mould.

*verb*, engineering  
McGraw-Hill Engineering

3. stiff dressing or casing, usually made of plaster of Paris, used to immobilise body parts.

*noun*, medicine  
Dorland Medical

**cast film**

film made by depositing a layer of plastic, either molten, in solution, or in a dispersion, onto a

surface, solidifying the deposit and removing the film from the surface.

*noun*, polymer science  
ASTM

**castable glass**

any glass or glass-ceramic that is capable of fabrication by casting.

*noun*, material science  
Williams

**casting**

1. the operation of pouring molten metals into sand or metal moulds in which they solidify.

*noun*, engineering

2. a metallic article cast in the shape required, as distinct from one shaped by working.

*noun*, engineering  
Larousse Science

**catabolism**

any destructive process by which complex substances are converted by living cells into more simple compounds, with release of energy.

*noun*, medicine  
Dorland Medical

**catalase**

an enzyme that catalyses the decomposition of hydrogen peroxide to water and oxygen, protecting cells.

*noun*, medicine  
Dorland Medical

**catalysis**

acceleration or retardation of a chemical reaction by a substance which itself undergoes no permanent chemical change, or which can be recovered when the chemical reaction is completed.

*noun*, chemistry  
Larousse Science

**catalyst**

a substance that increases the rate of a chemical reaction without itself undergoing any permanent chemical change.

*noun*, chemistry  
Oxford Science

**cataract**

opacity of the lens sufficient to cause visual impairment.

*noun*, ophthalmology  
Black's Medical

**catecholamine**

one of a series of compounds derived from dihydroxyphenylalanine (DOPA), dopamine, noradrenaline (norepinephrine) and adrenaline (epinephrine) which function as neurotransmitters.

*noun*, biology  
Larousse Science

**catgut**

strands of collagenous material derived from ovine or bovine intestines that is cleaned, cross-linked and sterilised and formed into absorbable sutures.

*noun*, biomaterials science  
Williams

Notes: Now largely superseded by synthetic absorbable sutures, made from polyglycolic acid or other polyesters.

**catherisation** (catherization)

passage of a catheter into a body channel or cavity.

*noun*, medicine  
Dorland Medical

**catheter**

tubular, flexible surgical instrument that is inserted into a cavity of the body to withdraw or introduce fluid or to facilitate other procedures.

*noun*, medical device technology  
Dorland Medical

**catheter cannula**

device consisting of a hollow tube which is inserted into a vessel or cavity, providing a rigid or semi-rigid structure that can be connected to a tube.

*noun*, medical device technology  
Szycher's Medical Devices

**catheter guide wire**

device consisting of a coiled wire that is designed to fit inside a percutaneous catheter for the purpose of directing the catheter through a blood vessel.

*noun*, medical device technology  
Szycher's Medical Devices

**cathode**

in electrolytic applications, the electrode at which positive ions are discharged, or negative ions formed.

*noun*, chemistry  
Larousse Science

**cathodic protection**

protection of a metal structure against electrolytic corrosion by making it the cathode (electron receiver) in an electrolytic cell, either by means of an impressed emf or by coupling it with a more electronegative metal.

*noun*, metallurgy  
Larousse Science

**cathodoluminescence**

emission of light, usually with an afterglow, from a material when irradiated by an electron beam.

*noun*, physics  
Larousse Science

**cation**

a positively charged ion.

*noun*, chemistry  
Oxford Science

**cationic polymerisation** (cationic polymerization)

polymerisation process using a cationic catalyst such as aluminium chloride.

*noun*, polymer science  
Larousse Science

**caudal**

situated more toward the cauda, or tail, than some specified reference point; toward the inferior (in humans) or posterior (in animals) end of the body.

*noun*, anatomy  
Dorland Medical

**causal relationship**

relationship between two variables where one is the cause and the other the effect.

*noun*, statistics  
Williams

**causality**

principle that effect cannot precede cause.

*noun*, general  
Oxford Science

**caustic**

descriptive of any substance that is destructive or corrosive to living tissue, usually by virtue of its alkalinity.

*adjective*, medicine  
Larousse Science

**cautery**

1. destruction of tissue by burning with a caustic substance or a hot instrument.

*noun*, medicine

2. the substance or instrument used for cauterisation.

*noun*, medicine  
Heinemann Dental

**cavitation**

generation of cavities (e.g. bubbles) in liquids by rapid pressure changes such as those induced by ultrasound.

*noun*, physics  
Larousse Science

**cavity**

1. hollow place or space, or a potential space, within the body or one of its organs.

*noun*, anatomy  
Dorland Medical

2. in a tooth, the space either caused by caries or cut out to remove caries.

*noun*, dentistry  
Heinemann Dental

**cavity angle**

angle formed by the walls of a tooth cavity, named according to the walls that form it.

*noun*, dentistry  
Heinemann Dental

**cavity floor**

that surface of a prepared cavity towards which the restoration is inserted.

*noun*, dentistry  
Heinemann Dental

**cavity liner** *cavity primer*, *cavity varnish*

material used to protect and insulate the tooth tissues after the excavation of caries before the placing of a restoration in a prepared cavity.

*noun*, dentistry  
Heinemann Dental

**cavity varnish** *cavity liner*, *cavity primer*

compound intended to coat a prepared cavity of a tooth before insertion of restorative materials, to prevent penetration of restorative materials, such as amalgam, into the dentinal tissue.

*noun*, dentistry  
CFR

**cavity wall**

any of the walls that form the outline of a tooth cavity.

*noun*, dentistry  
Heinemann Dental

**cavosurface angle**

angle formed between a cavity wall and the surface of a tooth.

*noun*, dentistry  
Heinemann Dental

**CD antigen**

cluster of differentiation designation assigned to leucocyte cell surface molecules which are identified by a given group of monoclonal antibodies.

*noun*, immunology  
Roitt Immunology

Notes: In immunology and cell biology, CD is the accepted and universally used description for cluster of differentiation.

**CD3**

trimeric complex which, together with a homodimer or heterodimer acts as a signal transducing unit for the T-cell receptor.

*noun*, biology  
Roitt Immunology

**CD4**

cell surface glycoprotein, usually on helper T-cells, that recognises MHC class II molecules on antigen-presenting cells.

*noun*, immunology  
Roitt Immunology

**CD8**

cell surface glycoprotein, usually on cytotoxic T-cells, that recognises MHC class I molecules on target cells.

*noun*, immunology  
Roitt Immunology

**CE mark, CE marking**

the indication that a product has successfully undergone all assessment procedures relevant to that class of product and may therefore be freely placed on the market within the European Union.

*noun*, regulatory affairs

Williams  
Notes: The term is derived from the French expression Conformité Européenne. CE marking for medical devices is determined by Directive 93/42/EEC; in vitro diagnostic medical devices are governed by Directive 98/79/EC.

**cecum**

the first part of the large intestine, forming a dilated pouch distal to the ileum and proximal to the colon, and giving off the vermiform appendix.

*noun*, anatomy  
Dorland Medical

**celiotomy**

incision into the abdominal cavity.

*noun*, surgery  
Dorland Medical

**cell**

1. general non-specific term describing a small microscopic mass protoplasm bounded externally by a semi-permeable membrane.

*noun*, biology

ASTM

2. the structural and functional unit, consisting of nucleus, cytoplasm and some other components, of most living organisms.

*noun*, biology

3. system in which two electrodes are in contact with an electrolyte.

*noun*, chemistry  
Oxford Science

**cell adhesion**

process in which cells become attached to a biomaterial surface.

*noun*, biomaterials science  
Williams

**cell adhesion molecule CAM**

molecule on the surface of an animal tissue cell that is involved in intercellular adhesion.

*noun*, biology  
Larousse Science

**cell alteration**

a change in the character of a cell line usually associated with the emergence of an established cell line with alteration of morphology, contact inhibition, karyotype, viral susceptibility, and ability to grow in suspension.

*noun*, biology  
ASTM

**cell centre (cell center) *centrosome***

specialised region of a living cell, situated next to the nucleus, where microtubules are assembled and broken down during cell division.

*noun*, biology  
Oxford Science

**cell culture**

the growing of cells *in vitro* in which the cells are no longer organised into tissues.

*noun*, biology  
ASTM

Notes: Cell cultures are used for a variety of purposes, including the toxicological testing of materials, chemicals and drugs, and for the intentional elaboration of cell products.

**cell cycle**

sequence of stages that a cell passes through between one cell division and the next.

*noun*, biology  
Oxford Science

**cell division**

formation of two or more daughter cells from a single mother cell.

*noun*, biology  
Oxford Science

**cell fusion**

technique of combining two cells from different tissues or species in a cell culture.

*noun*, biology  
Oxford Science

**cell inclusion**

usually lifeless, often temporary, constituent in the cytoplasm of a cell.

*noun*, biology  
Dorland Medical

**cell line**

strictly a cell culture derived from a single progenitor cell with, therefore, a homogeneous genetic constitution.

*noun*, biology

Larousse Science

**cell mediated immunity**

specific immunity which depends on the presence of activated T lymphocytes acting as cytotoxic cells and/or releasing lymphokines which activate monocytes and macrophages.

*noun*, immunology  
Larousse Science

**cell membrane *plasma membrane***

the partially permeable membrane forming the outer limit of a cell.

*noun*, biology  
Oxford Science

**cell senescence**

marked change in any significant feature of growth and/or morphology, indicative of a pronounced lack of cell vitality.

*noun*, biology  
ASTM

**cell strain**

type of cell derived from either a primary culture or from a cell line having specific characteristics, notably biochemical and/or biophysical markers that persist during subsequent culturing.

*noun*, biology  
ASTM

**cell viability**

ability of a cell in culture to sustain normal shape and function.

*noun*, biomaterials science  
Williams

Notes: This is used as a marker of the lack of any toxic effects associated with a biomaterial.

**cell wall**

rigid structure that lies just outside of and is joined to the plasma membrane of plant cells and most prokaryotic cells, which protects the cell and maintains its shape.

*noun*, biology  
Dorland Medical

**cell-cell interaction**

process of communication between cells mediated by contact at specific adhesive sites.

*noun*, biology  
Williams

**cell-seeding**

process of introducing cells onto the surface of a biomaterial with the intention of inducing cell growth and replication, and the resulting development of new tissue.

*noun*, biomaterials science  
Williams

**cell-surface interaction**

process of communication between a cell and the surface of a biomaterial.

*noun*, biomaterials science  
Williams

**cellular**

totally or partially composed of cells.

*adjective*, biology  
Heinemann Dental

**cellular immunity**

acquired immunity in which the role of T lymphocytes is predominant.

*noun*, immunology  
Dorland Medical

**cellular respiration**

the metabolic processes in living cells by which molecular oxygen is taken in, organic substances are oxidised, free energy is released, and carbon dioxide, water, and other oxidised products are released by the cell.

*noun*, biology  
Dorland Medical

**cellulase**

carbohydrate-digesting enzyme that hydrolyses cellulose to sugars.

*noun*, biology  
Oxford Science

**cellulitis**

diffuse inflammation, often purulent, of the intercellular tissue and especially of the subcutaneous tissue.

*noun*, medicine  
Heinemann Dental

**cellulose**

linear homopolymer of glucose,  $(C_6H_{10}O_5)_n$ , a polysaccharide.

*noun*, chemistry  
Larousse Science

**cellulose acetate**

synthetic derivative of cellulose, made by treating it with an acetic anhydride, methylene chloride/sulphuric acid mixture.

*noun*, chemistry  
Larousse Science

**cellulose ester**

generic term for the synthetic derivatives of cellulose where hydroxyl groups on the repeat unit are esterified.

*noun*, chemistry  
Larousse Science

**cellulosic cellulose plastic**

general name of any of the useful man-made materials derived from natural cellulose.

*noun*, polymer science  
Larousse Science

**cellulosic plastic cellulose**

one of a large family of thermoplastics, made by substituting various chemical groups for the hydroxyl groups contained in the cellulose molecule.

*noun*, polymer science  
Szycher's Biomaterials

**cement**

1. substance that produces a solid union between two surfaces.

*noun*, engineering

2. filling material used in dentistry to aid the retention of gold castings and to insulate the tooth pulp.

*noun*, dentistry

Dorland Medical

3. non-metallic material that sets hard, used to secure a biomaterial or implantable device in a cavity.

*noun*, medical device technology

Notes: Examples are dental cements used to secure inlays and bone cement used to secure joint replacement prostheses. The use of a cement does not imply there is any specific adhesion between components.

4. non-metallic substance that will unite two opposed surfaces.

*noun*, engineering  
Heinemann Dental

**cement mantle**

layer of bone cement that envelops a component of a joint replacement prosthesis.

*noun*, surgery  
Williams

**cementation**

process of attaching restorations or fillings with cement.

*noun*, dentistry  
Heinemann Dental

**cemented implant**

any orthopaedic implant that is attached to bone by means of bone cement.

*noun*, medical device technology  
Williams

**cemento-enamel junction**

the line on a tooth where the cementum of the root joins the enamel of the crown.

*noun*, dentistry  
Heinemann Dental

**cementoblast**

large cuboidal cell, found between the fibres on the surface of the cementum, which is active in cementum formation.

*noun*, anatomy  
Dorland Medical

**cementum**

bony tissue, a layer of which surrounds the dentine of the root of a tooth, and provides attachment for the fibres of the periodontal ligament.

*noun*, dentistry  
Heinemann Dental

**centigray CGy**

unit of absorbed radiation dose equal to one hundredth of a grey, or 1 rad.

*noun*, physics  
Dorland Medical

**centimetre (centimeter) cm**

one hundredth of a meter.

*noun*, general  
Dorland Medical

**centipoise cp**

one hundredth of a poise, a unit of viscosity.

*noun*, physics  
Dorland Medical

**centistoke cs**

one hundredth of a stoke, the unit of kinematic viscosity.

*noun*, physics  
Dorland Medical

**central nervous system CNS**

1. the main part of the nervous system that co-ordinates all neural functions.

*noun*, anatomy  
Oxford Science

2. the brain, meninges, spinal cord and cerebrospinal fluid.

*noun*, regulatory affairs  
Canadian Medical Devices

**centre of mass** (center of mass)

point at which the whole mass of a body may be considered to be concentrated.

*noun*, engineering  
Oxford Science

**centrifuge**

device in which solid or liquid particles of different densities are separated by rotating them in a tube in a horizontal circle.

*noun*, chemistry  
Oxford Science

**centrosome** *cell centre*

specialised region of a living cell, situated next to the nucleus, where microtubules are assembled and broken down during cell division.

*noun*, genetics  
Oxford Science

**cephal-, cephalo-**

signifying head.

*prefix*, anatomy  
Heinemann Dental

**cephalic**

pertaining to the head, or to the head end of the body.

*adjective*, anatomy  
Dorland Medical

**cephalometric radiograph**

radiograph taken in a standardised position for the purposes of cephalometric analysis; used in orthodontics and oral surgery.

*noun*, dentistry  
Heinemann Dental

**cephalosporin**

any of a group of broad-spectrum, penicillinase-resistant antibiotics from *Cephalosporium*.

*noun*, pharmacology  
Dorland Medical

**ceramic**

1. objects of clay or similar materials.

*noun*, general  
Larousse Science

2. type of material chemically derived from the combination of one or more metallic elements with one or more non-metallic elements, usually ionically bound but with a contribution from covalent bonding, characterised in the solid state by extreme brittleness.

*noun*, material science  
Williams

Notes: Ceramics may be crystalline or amorphous, in which case they are known as glasses.

**cerclage**

a means to encircle a part of the body with a ring or loop, as for correction of an incompetent cervix uteri or fixation of adjacent ends of a fractured bone.

*noun*, surgery  
Dorland Medical

**cerebellar cortex**

the superficial grey matter of the cerebellum.

*noun*, anatomy  
Dorland Medical

**cerebellar stimulator**

implantable medical device used to stimulate electrically a patient's cerebellar cortex for the treatment of intractable epilepsy, spasticity, and some movement disorders, the stimulator consisting of an implanted receiver with electrodes that are placed on the patient's cerebellum and an external transmitter for transmitting the stimulating pulses across the patient's skin to the implanted receiver.

*noun*, medical device technology  
CFR

**cerebellum**

the part of the metencephalon situated on the back of the brain stem, to which it is attached by three cerebellar peduncles on each side, and which controls and co-ordinates movement.

*noun*, anatomy  
Dorland Medical

**cerebral**

pertaining to the cerebrum.

*adjective*, medicine  
Dorland Medical

**cerebral cortex**

superficial grey matter of the cerebellum, responsible for the control of voluntary movement and senses of vision, hearing and touch.

*noun*, anatomy  
Dorland Medical

**cerebral embolism**

embolism of a cerebral artery.

*noun*, medicine  
Dorland Medical

**cerebrospinal fluid CSF**

fluid contained within the ventricles of the brain, the subarachnoid space, and the central canal of the spinal cord.

*noun*, medicine  
Dorland Medical

**cerebrum**

main portion of the brain, occupying the upper part of the cranial cavity.

*noun*, anatomy  
Dorland Medical

**cermet**

composite material derived from an oxide, carbide or nitride ceramic together with a small amount of a ductile metal that combines the hardness and high temperature characteristics of ceramics with some of the mechanical properties of metal.

*noun*, material science  
Larousse Science

**certified reference material**

reference material, accompanied by a certificate, one or more of whose property values are certified by a procedure which establishes its traceability to an accurate realisation of the unit in which the property values are expressed, and for which each certified value is accompanied by an uncertainty at a stated level of confidence.

*noun*, regulatory affairs  
ISO

**ceruloplasmin**

an  $\alpha_2$ -globulin of plasma believed to function in copper transport.

*noun*, medicine  
Dorland Medical

**cervical**

1. relating to the neck of a tooth, the narrow area at the junction of the tooth root with the crown.

*adjective*, dentistry  
Heinemann Dental

2. relating to the region of the neck.

*adjective*, medicine  
Dorland Medical

**cervix**

1. that part of the spinal column within the neck.

*noun*, anatomy  
Dorland Medical

2. narrow or neck-like part of an organ, such as the uterus or tooth.

*noun*, anatomy  
Oxford Science

3. neck of a tooth; the narrowed part where the tooth enters the gum, at the cemento-enamel junction.

*noun*, dentistry

4. that part of a dental implant connecting the implanted appliance to the abutment through the mucosa.

*noun*, dentistry  
Heinemann Dental

**chain**

a series of linked atoms, generally in an organic molecule.

*noun*, chemistry  
Larousse Science

**chain extender**

1. chemical compound which can react with active chain ends to give much larger polymer molecules.

*noun*, polymer science  
Larousse Science

2. active hydrogen containing compound such as a diol or diamine used to increase the molecular weight of an isocyanate-terminated prepolymer by chemical reaction.

*noun*, polymer science  
ASTM

**chain flexibility**

ease or difficulty of movement of a polymer chain, critically dependant on structure (or configuration) of repeat unit and temperature.

*noun*, polymer science  
Larousse Science

**chain polymerisation** (chain polymerization)

*addition polymerisation*

making high-molecular mass polymer chains by activating a small number of monomer molecules using catalysts such as benzoyl peroxide.

*noun*, polymer science  
Larousse Science

**chain reaction**

reaction that is self-sustaining as a result of the products of one step initiating a subsequent step.

*noun*, chemistry  
Oxford Science

**chain scission**

process in which covalent bonds in the backbone of a polymer molecule are broken.

*noun*, polymer science  
Williams

**chamber**

small or clearly defined cavity.

*noun*, anatomy  
Heinemann Dental

**channel**

pore formed by a protein molecule in a cell membrane that aids the diffusion of certain substances into and out of the cell, usually charged ions or lipid-insoluble molecules.

*noun*, biology  
Oxford Science

**charge**

1. quantity of unbalanced electricity in a body or chemical structure, i.e. excess or deficiency of electrons, giving the body or molecule negative or positive electrical character.

*noun*, physics  
Larousse Science

2. a property of some elementary particles that gives rise to an interaction between them.

*noun*, physics  
Oxford Science

3. amount of a substance placed in a chamber, reaction vessel or furnace to take part in a chemical or metallurgical process.

*noun*, engineering  
Larousse Science

**charge carrier**

entity that transports electric charge in an electric current.

*noun*, physics  
Oxford Science

**charge density**

electric charge per unit volume of a medium or body.

*noun*, physics  
Oxford Science

**Charpy test**

flexed beam, notched-specimen, impact test.

*noun*, engineering  
Larousse Science

Notes: Both ends of a notched specimen are supported and a striker carried on a pendulum impacts the specimen centrally

on the face opposite the notch; the energy absorbed in fracture is then calculated from the height to which the pendulum rises as it continues its swing.

**cheilitis**

inflammation of the lips.  
*noun*, medicine  
Dorland Medical

**chelate**

an inorganic complex in which a ligand is coordinated to a metal ion at two (or more) points, so that there is a ring of atoms.  
*noun*, chemistry  
Oxford Science

**chelating agent**

chemical agent which combines with unwanted metal ions.  
*noun*, chemistry  
Larousse Science

**chemabrasion**

superficial destruction of the epidermis and the dermis by application of a cauterant to the skin.  
*noun*, medicine  
Dorland Medical

**chemFET**

shortened name for a chemically sensitive field effect transistor which may be used as sensor for certain chemical species.  
*noun*, chemistry  
Williams

**chemical bond**

the electric force linking atoms in molecules or non-molecular solid phases.  
*noun*, chemistry  
Larousse Science

**chemical compound**

substance composed of two or more elements in definite proportions by weight, which are independent of its mode of preparation.  
*noun*, chemistry  
Larousse Science

**chemical functionality**

characteristic chemical properties of a substance, especially organic substances, defined by the nature of the functional groups that are present.  
*noun*, chemistry  
Williams

**chemical potential  $\mu$**

measure of the (Gibbs) free energy associated with a given uncharged chemical species under given conditions and hence of its relative ability to perform work.  
*noun*, chemistry  
Larousse Science

**chemical reaction**

process in which the structure of a chemical is changed to form another substance which retains the nuclei of the original chemical or chemicals but with a different configuration or content of atoms, energy, etc.  
*noun*, chemistry  
Larousse Science

**chemical vapour deposition CVD**

the deposition of solid material, usually as a thin film, from precursors in the gas phase.  
*noun*, chemistry  
Larousse Science

**chemically defined medium**

medium (media) composed entirely of known chemical components in which cells may be cultured without any undefined additives.  
*noun*, biology  
ASTM

**chemiluminescence *chemoluminescence***

process in which visible light is produced in a chemical reaction.  
*noun*, chemistry  
Larousse Science

**chemisorption**

irreversible adsorption in which the absorbed surface is held on the substance by chemical forces.  
*noun*, chemistry  
Larousse Science

**chemoattractant**

chemotactic agent that induces an organism or a cell to migrate toward it.  
*noun*, biology  
Dorland Medical

**chemokine**

a cytokine that stimulates leucocyte chemotaxis.  
*noun*, biology  
Larousse Science

**chemokinesis**

random movement of cells such as leucocytes stimulated by substances in the environment.  
*noun*, biology  
Larousse Science

**chemoluminescence *chemiluminescence***

luminescence produced by direct transformation of chemical energy into light energy.  
*noun*, chemistry  
Dorland Medical

**chemostat**

a culture vessel in which steady state growth is maintained by appropriate rates of harvest and addition of nutrients.  
*noun*, biology  
Larousse Science

**chemosurgery**

destruction of a tissue by chemical means for therapeutic purposes.  
*noun*, surgery  
Dorland Medical

**chemotaxis**

stimulation of movement by a cell towards or away from substances producing a concentration gradient in the environment.  
*noun*, biology  
Larousse Science

**chemotherapy**

1. treatment of disease by chemicals which affect the pathogenic organism without harming the

patient.  
*noun*, pharmacology  
2. treatment of malignant neoplasia by chemical means.  
*noun*, pharmacology  
Heinemann Dental

**chest**  
the thorax, especially its anterior aspect.  
*noun*, anatomy  
Dorland Medical

**chi-squared test**  
statistical test used to determine the goodness of fit of observed sample data and expected theoretical population.  
*noun*, statistics  
Larousse Science

**chiasma**  
point at which paired homologous chromosomes remain in contact as they begin to separate during the first prophase of meiosis, forming a cross shape.  
*noun*, genetics  
Oxford Science

**chimaera**  
organism composed of tissues that are genetically different.  
*noun*, biology  
Oxford Science

**chin prosthesis**  
device intended to be implanted to augment or reconstruct the chin.  
*noun*, medical device technology  
CFR

**chinese hamster ovary CHO**  
type of cell used in culture for certain types of biological testing.  
*noun*, biomaterials science  
Williams

**chiral**  
pertaining to a molecule whose configuration is not identical with its mirror image.  
*adjective*, chemistry  
Biomedical Engineering Handbook

**chirality**  
absence of symmetry of a molecule with its mirror image, involving reflection or inversion.  
*noun*, chemistry  
Larousse Science

**chitin**  
insoluble, linear polysaccharide forming the principal constituent of arthropod exoskeletons and found in some plants, particularly fungi.  
*noun*, biology  
Dorland Medical  
Notes: Derivatives of chitin are currently under consideration for medical applications, for example in wound healing.

**chlorhexidene**  
antibacterial effective against a wide variety of gram-negative and gram-positive organisms.  
*noun*, pharmacology  
Dorland Medical

**chlorine Cl**  
halogen element, at. no. 17.  
*noun*, chemistry  
Larousse Science

**chlorofluorocarbon plastic**  
plastic based on polymers made with monomers composed of chlorine, fluorine, and carbon only.  
*noun*, polymer science  
ASTM

**chlorofluorohydrocarbon plastic**  
plastic based on polymers made with monomers composed of chlorine, fluorine, hydrogen, and carbon only.  
*noun*, polymer science  
ASTM

**chloroplatinic acid**  
a reddish crystalline compound,  $H_2PtCl_6$ , made by dissolving platinum in aqua regia.  
*noun*, chemistry  
Oxford Science  
Notes: Used as a catalyst in some polymerisation reactions.

**cholecystectomy**  
surgical removal of the gall-bladder.  
*noun*, surgery  
Black's Medical

**cholecystitis**  
inflammation of the gall-bladder.  
*noun*, medicine  
Black's Medical

**cholelithiasis**  
presence of gall-stones in the bile ducts and/or in the gall-bladder.  
*noun*, medicine  
Black's Medical

**cholesterol**  
a eukaryotic sterol that is the precursor of bile acids and steroid hormones and a key constituent of cell membranes.  
*noun*, biology  
Dorland Medical

**cholic acid**  
one of the primary bile acids in humans.  
*noun*, medicine  
Dorland Medical

**choline**  
quaternary amine, a member of the B vitamin complex, which occurs in phosphatidylcholine and acetylcholine, is an important methyl donor in intermediary metabolism, and prevents the deposition of fat in the liver.  
*noun*, medicine  
Dorland Medical

**cholinergic**  
describing a nerve fibre that either releases acetylcholine when stimulated or is itself stimulated by acetylcholine.  
*adjective*, medicine  
Oxford Science

**cholinergic receptors**  
cell-surface receptor molecules that bind the

neurotransmitter acetylcholine and mediate its action on postjunctional cells.

*noun*, medicine  
Dorland Medical

**cholinesterase** *acetylcholinesterase*

an enzyme that hydrolyses the neurotransmitter acetylcholine to choline and acetate.

*noun*, biology  
Oxford Science

**chondr-, chondro-**

signifying cartilage.

*prefix*, biology  
Heinemann Dental

**chondral**

pertaining to cartilage.

*adjective*, anatomy  
Larousse Science

**chondroblast**

cartilage producing cell.

*noun*, anatomy  
Larousse Science

**chondrocostal**

pertaining to the ribs and costal cartilages.

*adjective*, anatomy  
Dorland Medical

**chondrocyte**

mature cartilage cell embedded in a lacuna within the cartilage matrix.

*noun*, anatomy  
Dorland Medical

**chondrogenesis**

process of formation of cartilage.

*noun*, biology  
Dorland Medical

**chondroitin sulphate** (chondroitin sulfate)

a glycosaminoglycan that predominates in connective tissue, particularly cartilage, bone, and blood vessels, and in the cornea.

*noun*, biology  
Dorland Medical

**chondromalacia**

abnormal softening of cartilage.

*noun*, medicine  
Dorland Medical

**chondrosarcoma**

malignant tumour derived from cartilage cells or their precursors.

*noun*, medicine  
Dorland Medical

**chordotomy**

cutting of nerve fibres in the spinal cord for relief of severe pain.

*noun*, surgery  
Larousse Science

**chori(o)-**

signifies a membrane.

*prefix*, medicine  
Dorland Medical

**chorion**

the outermost of the foetal membranes, composed of trophoblast lined with mesoderm.

*noun*, anatomy  
Dorland Medical

**choroid**

the middle, vascular coat of the eye, between the sclera and the retina.

*noun*, ophthalmology  
Dorland Medical

**choroid plexus**

membrane rich in blood vessels that lines the ventricles of the brain.

*noun*, anatomy  
Oxford Science

**Christmas factor** *Factor IX*

plasma thromboplastin component of the clotting cascade.

*noun*, medicine  
Dorland Medical

**chrom-, chromo-**

signifying colour.

*prefix*, general  
Heinemann Dental

**chromatid**

either of two parallel, spiral filaments joined at the centromere which make up a chromosome.

*noun*, genetics  
Dorland Medical

**chromatin**

substance of which eukaryotic chromosomes are composed, consisting of proteins (principally histones), DNA, and small amounts of RNA.

*noun*, genetics  
Oxford Science

**chromatogram**

record obtained by chromatography.

*noun*, biology  
Oxford Science

**chromatography**

technique for analysing or separating mixtures of gases, liquids, or dissolved substances.

*noun*, chemistry  
Oxford Science

**chromatophore**

an atom or group of atoms that imparts a characteristic colour to a substance.

*noun*, chemistry  
Szycher's Biomaterials

**-chrome**

signifying colour.

*suffix*, general  
Williams

**chrome-cobalt alloy** *cobalt-chromium alloy*

hard and corrosion-resistant alloy of cobalt and chromium.

*noun*, biomaterials science  
Heinemann Dental

Notes: A general term, evolved through common usage, to denote alloys used in dentistry for partial dentures and implants and in orthopaedics for some implantable devices. The continued use of this term is not recommended since the

alloys are cobalt rich and contain several other alloying additions. 'Cobalt-chromium alloy' is preferred.

**chromium Cr**

metallic element, at. no. 24.

*noun*, chemistry  
Larousse Science

**chromium carbide**

a carbide of chromium  $\text{Cr}_{23}\text{C}_6$  that is formed in stainless steels at certain temperatures, the presence of which is detrimental to the corrosion resistance.

*noun*, metallurgy  
Williams

**chromium oxide**

chromium (VI) oxide - produced by the action of sulphuric acid on a concentrated solution of potassium dichromate (VI).

*noun*, chemistry  
Larousse Science

**chromium steel**

any of a group of stainless steels containing 8-25% of chromium.

*noun*, metallurgy  
Oxford Science

**chromogenic substrate**

substrate that is capable of being converted to a characteristic coloured product as a direct result of enzyme action.

*noun*, biology  
Szycher's Biomaterials

**chromophore**

group causing coloration in a dye or other substance, generally groups of atoms having delocalised electrons.

*noun*, chemistry  
Oxford Science

**chromosomal aberration**

any visible abnormality in chromosome number or structure, including trisomy and translocations

*noun*, genetics  
Larousse Science

**chromosome**

structure in the nucleus containing a linear thread of DNA which transmits genetic information.

*noun*, genetics  
Dorland Medical

**chromosome arm**

either of two segments of a chromosome separated by the centromere.

*noun*, genetics  
Dorland Medical

**chromosome set**

the whole of the chromosomes present in the nucleus of a gamete, usually consisting of one each of the several kinds that may be present.

*noun*, genetics  
Larousse Science

**chronic**

said of a disease or state which is deep-seated or long-lasting.

*adjective*, medicine

Larousse Science

**chronic inflammation**

prolonged and persistent inflammation marked chiefly by the continued presence of certain inflammatory cells and new connective tissue formation; it may be a continuation of an acute form or a prolonged low-grade form.

*noun*, medicine  
Dorland Medical

**chronic toxicity**

adverse effects which persist for a prolonged period of time after single or multiple exposure to a substance or material.

*noun*, toxicology  
Williams

**chronic toxicity test**

test conducted in an experimental animal to determine the effects of either single or multiple exposures to devices, materials and/or their extracts during a period of at least 10% of the life-span of the test animal (e.g., over 90 days in rats).

*noun*, biomaterials science

ISO

Notes: These tests should be appropriate for the route and duration of exposure or contact of the material or device under evaluation.

**chronotropic**

affecting the periodicity of a recurring action, such as the slowing (bradycardia) or speeding up (tachycardia) of the heartbeat that results from extrinsic control of the SA node.

*adjective*, medicine  
Biomedical Engineering Handbook

**crystalline silica**

any of the crystalline forms of  $\text{SiO}_2$ .

*noun*, chemistry  
Williams

**chymotrypsin**

peptidase of the mammalian digestive system which is specific for peptide bonds adjacent to amino acids with aromatic or bulky hydrophobic side chains.

*noun*, biology  
Larousse Science

**cicatrix**

scar; the fibrous tissue left after the healing of a wound.

*noun*, medicine  
Dorland Medical

**cilia**

1. eyelids or their outer edges.

*noun*, ophthalmology  
Dorland Medical

2. fine hair-like protrusions of the cell surface which beat in unison to create currents of liquid over the cell surface or propel the cell through the medium.

*noun*, biology  
Larousse Science

**ciliary**

pertaining to or resembling cilia.

*adjective*, biology  
Dorland Medical

**ciliary body**

the circular band of tissue surrounding and supporting the lens of the vertebrate eye.  
*noun*, ophthalmology  
Oxford Science

**circadian rhythm**

any 24-hour periodicity in the behaviour or physiology of animals or plants.  
*noun*, biology  
Oxford Science

**Circle of Willis** *circulus arteriosus*

a circle of arteries at the base of the brain, which is formed by the junction of the basilar, posterior cerebral, internal carotid and anterior cerebral arteries.  
*noun*, anatomy  
Black's Medical

**circulation**

continuous movement of the blood through the heart, arteries, capillaries and veins.  
*noun*, medicine  
Larousse Science

**circulatory system**

system of organs through which is maintained a flow of fluid that transports materials between different tissues.  
*noun*, medicine  
Larousse Science

**circum-**

signifying around, surrounding.  
*prefix*, general  
Heinemann Dental

**circumferential wiring**

method of immobilisation of a jaw fracture in an edentulous mandible where a splint is held in place by wires passed over the bone and through the soft tissues.  
*noun*, dentistry  
Heinemann Dental

**cirrhosis**

interstitial inflammation of an organ, particularly the liver.  
*noun*, medicine  
Dorland Medical

**cis**

- denoting an isomer with similar atoms or radicals on the same side.  
*adjective*, chemistry
- having two mutant genes of a pseudoallele on the same chromosome.  
*adjective*, genetics  
Dorland Medical

**cisplatin**

a platinum co-ordination complex capable of producing inter- and intrastrand DNA cross-links.  
*noun*, medicine  
Dorland Medical  
Notes: Used as an agent in the treatment of cancer, especially ovarian carcinoma and testicular tumours.

**clamp**

surgical device for compressing a part or structure.  
*noun*, medical device technology  
Dorland Medical

**-clasia**

signifying destruction or degeneration.  
*suffix*, general  
Heinemann Dental

**clasp**

any hook or band attached to a natural tooth and used to anchor a partial denture or any orthodontic appliance.  
*noun*, dentistry  
Heinemann Dental

**class**

one of the categories of medical device determined according to the rules of regulatory control.  
*noun*, regulatory affairs  
Williams

**Class I medical device**

1. class of medical device for which the conformity assessment procedure can be carried out, as a general rule, under the sole responsibility of the manufacturer.

*noun*, regulatory affairs  
EU Directive

2. class of devices that are subject to only the general controls authorised by or under sections 501 (adulteration), 502 (misbranding), 510 (registration), 516 (banned devices), 518 (notification and other remedies), 519 (records and reports), and 520 (general provisions) of the U.S. Federal Food, Drug and Cosmetic Act.

*noun*, regulatory affairs  
CFR

Notes: In the U.S. context, a device is in Class I if (i) the general controls are sufficient to provide reasonable assurance of the safety and effectiveness of the device, or (ii) there is insufficient information from which to determine that general controls are sufficient to provide reasonable assurance of the safety and effectiveness of the device or to establish special controls to provide such assurance, but the device is not life-supporting or life-sustaining or for a use which is of substantial importance in preventing impairment of human health, and which does not present a potential unreasonable risk of illness or injury.

**Class II medical device**

class of devices that is or eventually will be subject to special controls.

*noun*, regulatory affairs  
CFR

Notes: A device is in Class II if general controls alone are insufficient to provide reasonable assurance of its safety and effectiveness and there is sufficient information to establish special controls, including the promulgation of performance standards, postmarket surveillance, patient registries, development and dissemination of guidelines (including guidelines for the submission of clinical data in premarket notification submissions in accordance with section 510(k) of the U.S. Federal Food, Drug & Cosmetic Act), recommendations and other appropriate actions as the Commissioner of the U.S. Food and Drug Administration deems necessary to provide such assurance.

**Class IIa medical device**

class of medical device for which the conformity assessment procedure is carried out with the intervention of a Notified Body at the production

stage.  
*noun*, regulatory affairs  
EU Directive

**Class IIb medical device**

class of medical device for which the conformity assessment procedure is carried out with inspection by a Notified Body with regard to the design and manufacture of the device.  
*noun*, regulatory affairs  
EU Directive

**Class III medical device**

1. class of medical device for which explicit prior authorisation with regard to conformity is required for them to be placed on the market.

*noun*, regulatory affairs  
EU Directive

2. class of devices for which pre-market approval is or will be required in accordance with section 515 of the U.S. Federal Food, Drug and Cosmetic Act.

*noun*, regulatory affairs  
CFR

Notes: In the U.S. context, a device is in Class III if insufficient information exists to determine that general controls are sufficient to provide reasonable assurance of its safety and effectiveness or that application of special controls as described for Class II devices would provide such assurance and if, in addition, the device is life-supporting or life-sustaining, or for a use which is of substantial importance in preventing impairment of human health, or if the device presents a potential unreasonable risk of illness or injury.

**Class VI plastic**

any plastic material that has satisfied the requirements of the U.S. Pharmacopeia with respect to the biological properties of plastics.

*noun*, medical device technology  
Williams

**classic complement pathway**

a pathway of complement activation, comprising nine components (C1 to C9), initiated by antigen-antibody complexes containing specific immunoglobulins.

*noun*, immunology  
Dorland Medical

**classification**

systematic arrangement of similar entities on the basis of certain differing characteristics.

*noun*, general  
Dorland Medical

**classification of medical devices**

systematic arrangement of medical devices on the basis of characteristics as defined by regulatory bodies.

*noun*, regulatory affairs  
Williams

**clastic**

undergoing or causing division.

*adjective*, biology  
Dorland Medical

**clastogenic**

causing disruption or breakages, as of chromosomes.

*adjective*, biology  
Dorland Medical

**claudication**

limping, lameness.

*noun*, medicine  
Dorland Medical

**clavicle**

collar bone.

*noun*, anatomy  
Larousse Science

**cleanroom**

special facility for handling material in a sterile and dust-free environment.

*noun*, engineering  
Larousse Science

**clearance**

1. distance between two objects, or between a moving and stationary part of a machine.

*noun*, engineering  
Larousse Science

2. a measure of the rate of mass removal of a substance expressed as the volume of blood which per unit of time is totally cleared through processing in a natural or artificial kidney.

*noun*, medicine  
Biomedical Engineering Handbook

**cleavage**

1. series of cell divisions by which a single fertilised egg cell is transformed into a multi-cellular body, the blastula.

*noun*, embryology

2. splitting of a crystal along planes of atoms in the lattice.

*noun*, material science  
Oxford Science

**cleft**

fissure, especially one occurring during embryonic development.

*noun*, embryology  
Dorland Medical

**cleft palate**

congenital fissure of the palate due to defective development in embryo, which leaves a gap in the roof of the mouth.

*noun*, embryology  
Heinemann Dental

**click**

brief, sharp sound.

*noun*, medicine  
Dorland Medical

Notes: Especially any of the short, dry clicking heart sounds during systole, indicative of various heart conditions, or the jaw during mastication, indicative of temporomandibular joint dysfunction.

**clinical**

relating to the observation and treatment of disease in the patient, as opposed to theoretical and experimental investigation.

*adjective*, clinical practice  
Heinemann Dental

**clinical crown**

the portion of a tooth exposed beyond the gingiva.

*noun*, dentistry  
Dorland Medical

**clinical engineering**

application of the principles and practices of engineering and the physical sciences to clinical medicine.

*noun*, bioengineering  
Williams

**clinical follow-up study**

study in which individuals who have been exposed to a risk factor or condition (such as device implantation) are followed to assess the outcome of the exposure.

*noun*, clinical practice  
Witkin

**clinical root**

that portion of a tooth which is attached by the periodontal ligament to the alveolar bone.

*noun*, dentistry  
Heinemann Dental

**clinical trial**

1. experiment performed on human beings in order to evaluate the comparative efficacy of two or more therapies.

*noun*, clinical practice  
Dorland Medical

2. controlled study involving human subjects, designed to evaluate prospectively the safety and effectiveness of new drugs or devices or of behavioural interventions.

*noun*, clinical practice  
IRB Guidebook

**clinically superior**

description of a drug that is shown to provide a significant therapeutic advantage over and above that provided by an approved orphan drug (that is otherwise the same drug) by either greater effectiveness, or greater safety in a substantial portion of the target populations, or, in unusual cases, where neither greater safety nor greater effectiveness has been shown but where the drug otherwise makes a major contribution to patient care.

*noun*, regulatory affairs  
CFR

**clip**

metallic device for approximating the edges of a wound or for the prevention of bleeding from small individual blood vessels.

*noun*, surgery  
Dorland Medical

**clip applier**

any clip holder designed specifically for a particular type clip used during surgical procedures involving the implantation of intracranial aneurysm clips.

*noun*, medical device technology  
ASTM

**clone**

genetically identical progeny produced by the natural or artificial asexual reproduction of a single organism, cell, or gene.

*noun*, genetics  
Dorland Medical

**clonus**

alternate involuntary muscular contraction and relaxation in rapid succession.

*noun*, medicine  
Dorland Medical

**close bite**

form of malocclusion in which there is abnormally deep overlap of the incisors when the jaws are closed.

*noun*, dentistry  
Heinemann Dental

**close packing**

packing of spheres so as to occupy the minimum amount of space.

*noun*, chemistry  
Oxford Science

**close packing of atoms**

state within a crystal structure in which the atoms of the lattice are spatially arranged such that the maximum number of them are positioned at the minimum interatomic distance with respect to their neighbours.

*noun*, chemistry  
Williams

**closed cell**

pertaining to a sponge or porous material in which the cells are totally enclosed by its walls and hence not interconnecting with other cells.

*adjective*, material science  
ASTM

**closed pore**

pore within a porous material that does not connect either to other pores or to the external surface of the material.

*noun*, material science  
Williams

**closed-loop system**

system that enables a device to sense, interpret and treat a medical condition without human intervention.

*noun*, regulatory affairs  
Canadian Medical Devices

**clostridium**

genus of anaerobic spore-forming bacteria.

*noun*, biology  
Dorland Medical

**clot**

1. to form a solid mass in blood.

*verb*, medicine

2. semi-solidified mass of coagulum, as of blood or lymph.

*noun*, medicine  
Dorland Medical

**cluster of differentiation CD**

internationally agreed CD system for naming differentiation antigens on cell surfaces that ascribes to each CD antigen a number (CD1, CD2 etc.) and lists its molecular weight, its possible role as a receptor, in adhesion etc., and the cell type on which it has been identified.

*noun*, immunology

Larousse Science

**co-extrusion**

extrusion process that joins two or more streams of molten plastic.

*noun*, polymer science  
Brett-Strong Plastics

**coacervate**

aggregate of macromolecules, such as proteins, lipids, and nucleic acids, that form a stable colloid unit with properties that resemble living matter.

*noun*, biology  
Oxford Science

**coacervation**

process of reversible aggregation of particles of an emulsoid into liquid droplets.

*noun*, chemistry  
Larousse Science

**coagglutination**

aggregation of particulate antigens combined with agglutinins of more than one specificity.

*noun*, medicine  
Dorland Medical

**coagulant**

substance that promotes or accelerates coagulation of blood.

*noun*, medicine  
Dorland Medical

**coagulase**

antigenic substance of bacterial origin, produced by staphylococci, which may be causally related to thrombus formation.

*noun*, medicine  
Dorland Medical

**coagulate**

to cause to clot.

*verb*, medicine  
Dorland Medical

**coagulation**

process in which colloidal particles come together irreversibly to form larger masses.

*noun*, biology  
Oxford Science

**coagulation cascade**

process in which blood clotting is initiated by one event and proceeds by the sequential activation of a series of clotting factors until fibrinogen is converted into fibrin which polymerises to form the blood clot.

*noun*, biology  
Williams

**coagulation factors**

factors essential to normal blood clotting, whose absence, diminution, or excess may lead to abnormality of the clotting mechanism.

*noun*, medicine  
Dorland Medical

**coagulum**

a clot.

*noun*, medicine  
Larousse Science

**coalesce**

to fuse or unite separate parts.

*verb*, general  
Heinemann Dental

**coapt**

to approximate, as the edges of a wound.

*verb*, general  
Dorland Medical

**coating**

1. deposited layer or covering on a biomaterial or medical/dental device which is intended to protect or enhance the performance of the device or biomaterial

*noun*, biomaterials science  
ISO

2. surface layer that is relatively thin compared to the overall dimensions of the prosthetic part that has been coated.

*noun*, biomaterials science  
ASTM

**cobalamin**

compound comprising the substituted ring and nucleotide structure characteristic of vitamin B<sub>12</sub>.

*noun*, medicine  
Dorland Medical

**cobalt Co**

hard, grey metallic element, at. no. 27.

*noun*, chemistry  
Larousse Science

**cobalt-chromium alloy** *chrome-cobalt alloy*

any alloy that is substantially composed of cobalt, as the parent element, and chromium, as the alloying addition, wherein the corrosion resistance of the chromium is imparted to the alloy.

*noun*, metallurgy  
Williams

Notes: Used extensively as corrosion resistant alloys in orthopaedic implants and dental castings; they usually contain a number of other alloying additions.

**cobalt-chromium casting alloy**

hard and corrosion-resistant alloy of cobalt and chromium, used in the construction of partial dentures.

*noun*, dentistry  
Heinemann Dental

**cocarcinogen**

substance that promotes the activity of a carcinogen.

*noun*, medicine  
Dorland Medical

**coccus**

spherical bacterium, less than 1µ in diameter

*noun*, biology  
Dorland Medical

**coccyx**

the last bone in the vertebral column in apes and man.

*noun*, anatomy  
Oxford Science

**cochlea**

1. anything of a spiral form.

*noun*, anatomy

2. spiral tube forming part of the inner ear, which is the essential organ of hearing.

*noun*, anatomy

Dorland Medical

### **cochlear implant**

implantable device that applies electrical signals directly to the cochlear in order to restore hearing.

*noun*, medical device technology

Williams

### **Cochrane Centre**

centre approved by the Cochrane Collaboration Steering Group that formally participates in and organises the analysis of randomised clinical trials that inform decisions on the effectiveness and efficiency of health care procedures.

*noun*, clinical practice

Williams

### **coding sequence**

that part of a nucleic acid molecule which can be transcribed and translated into polypeptide using the genetic code.

*noun*, genetics

Larousse Science

### **coefficient of friction**

ratio of the frictional force between two bodies in contact, parallel to the surface of contact, to the force, normal to the surface of contact, with which the bodies press against each other.

*noun*, engineering

McGraw-Hill Engineering

### **coelom**

the secondary body cavity of animals which is surrounded and separated from the primary body cavity by mesoderm.

*noun*, biology

Larousse Science

### **coenzyme**

organic non-protein molecule that associates with an enzyme molecule in catalysing biochemical reactions.

*noun*, biology

Oxford Science

### **coenzyme A CoA**

complex organic compound that acts in conjunction with enzymes involved in various biochemical reactions, notably the oxidation of pyruvate via the Krebs cycle and fatty-acid oxidation and synthesis.

*noun*, biology

Oxford Science

### **cofactor**

non-protein component essential for the normal catalytic activity of an enzyme.

*noun*, biology

Oxford Science

### **cohesion**

force of attraction between like molecules.

*noun*, chemistry

Oxford Science

### **cohesive failure**

rupture of an adhesive bond, such that the

separation is determined to originate within the adhesive layer itself.

*noun*, material science

Szycher's Biomaterials

### **cohort study**

study that typically follows a group of exposed (treated) and non-exposed (untreated) individuals either forward in time (concurrent design) or retrospectively (non-concurrent design), to observe the development of a disease or outcome.

*noun*, medicine

Witkin

### **cold flow**

creep of a material at room temperature.

*noun*, material science

Szycher's Biomaterials

### **cold working**

the operation of shaping metals at temperatures below their recrystallisation temperature (i.e. below  $0.5T_m$ ) so as to produce strain-hardening.

*noun*, engineering

Larousse Science

### **coliform**

pertaining to fermentative gram-negative enteric bacilli, sometimes restricted to those fermenting lactose.

*adjective*, biology

Dorland Medical

### **collagen**

family of fibrous insoluble proteins having a triple helical conformation extending over a major part of the molecule.

*noun*, biology

Biomedical Engineering Handbook

Notes: Glycine is present at every third amino acid in the triple helix and proline and hydroxyproline are required in the triple helix. In the context of implantable medical devices, collagenous materials, prepared by a variety of routes, are used for structural and functional purposes.

### **collagen sponge**

a porous material, prepared by one of several routes, that consists of collagen in any of its forms, which is used as an implantable material or surgical accessory for purposes such as haemostasis.

*noun*, biomaterials science

Williams

### **collagenase**

proteolytic enzyme that catalyses the hydrolysis of peptide bonds in triple helical regions of collagen.

*noun*, biology

Dorland Medical

### **collateral**

1. secondary or accessory; not direct or immediate.

*adjective*, general

2. small side branch, as of a blood vessel or nerve.

*adjective*, medicine

Dorland Medical

### **Colles' fracture**

fracture of the lower end of the radius, the lower fragment being displaced backward.

*noun*, medicine

Dorland Medical

Notes: If the lower fragment is displaced forward, it is a reverse Colles' fracture.

**colloid**

chemical system composed of a continuous medium (continuous phase) throughout which are distributed small particles, 1 to 1000 nm in size (disperse phase).

*noun*, medicine

Dorland Medical

**colloidal osmotic pressure**

the total influence of the proteins or other large molecular weight substances on the osmotic activity of plasma.

*noun*, biology

ISO

**colloidal state**

state of subdivision of matter in which the particle size varies from that of true 'molecular' solutions to that of coarse suspensions, the diameter of the particles lying between 1 and 100 nm.

*noun*, chemistry

Larousse Science

**colon**

the part of the large intestine extending from the cecum to the rectum.

*noun*, anatomy

Dorland Medical

**colony**

discrete group of organisms, as with a collection of bacteria in a culture.

*noun*, biology

Dorland Medical

**colony stimulating factors CSFs**

factors that permit the proliferation and differentiation of haematopoietic cells.

*noun*, immunology

Roitt Immunology

**colosigmoidostomy**

surgical anastomosis of a formerly remote portion of the colon to the sigmoid.

*noun*, surgery

Dorland Medical

**colostomy**

surgical creation of an opening between the colon and the body surface; also, the opening (stoma) so created.

*noun*, surgery

Dorland Medical

**colp(o)-**

signifying vagina.

*prefix*, medicine

Dorland Medical

**colpomicroscope**

instrument for microscopic examination of the tissues of the cervix *in situ*.

*noun*, medical device technology

Dorland Medical

**colpoperineoplasty**

repair of the vagina and perineum.

*noun*, surgery

Dorland Medical

**colpoperineorrhaphy**

suture of the ruptured vagina and perineum.

*noun*, medicine

Dorland Medical

**columnar crystals**

elongated crystals formed by growth taking place at right angles to the temperature gradient within a mould, usually at right angles to the mould wall.

*noun*, material science

Larousse Science

**columnar epithelium**

variety of epithelium consisting of prismatic columnar cells set closely side by side on a basement membrane.

*noun*, anatomy

Larousse Science

**commensal**

descriptive of micro-organisms which live in or on the body (e.g. in the gut or respiratory tract, or on the skin) without doing any harm to the individual.

*adjective*, biology

Black's Medical

**commercial grade**

term used to denote the form of a material that is supplied to a customer for general commercial use.

*noun*, engineering

Williams

Notes: This term does not imply the presence or absence of any specific properties but refers to the general composition and the route of manufacture.

**comminuted**

reduced to small fragments.

*adjective*, general

Larousse Science

**comminuted fracture**

fracture in which the bone is broken into a number of pieces.

*noun*, medicine

Heinemann Dental

**commissure**

site of union of corresponding parts; specifically, the sites of junction between adjacent cusps of the heart valves.

*noun*, anatomy

Dorland Medical

**common bile duct**

duct formed by the union of the cystic and hepatic ducts.

*noun*, anatomy

Dorland Medical

**comonomer**

monomer that is physically mixed with another monomer for a copolymerisation reaction.

*noun*, polymer science

Szycher's Biomaterials

**compact bone**

the dense outer layers of fully developed bone.

*noun*, anatomy

Heinemann Dental

**company**

term used primarily to refer to a business first party, the purpose of which is to supply a product or service.

*noun*, regulatory affairs  
ISO

**compensation**

payment or medical care provided to subjects injured in research; it does not refer to payment (remuneration) for participation in research.

*noun*, clinical practice  
IRB Guidebook

**competitive inhibition**

inhibition of enzyme activity in which the inhibitor (a substrate analogue) competes with the substrate for binding sites on the enzyme.

*noun*, biology  
Dorland Medical

**complaint**

any written, electronic or oral communication that alleges deficiencies related to the identity, quality, durability, reliability, safety, effectiveness, or performance of a medical device after it is released for distribution.

*noun*, regulatory affairs  
CFR

**complement**

a group of serum proteins, some of which act in an enzymatic cascade, producing effector molecules involved in inflammation (C3a, C5a) phagocytosis (C3b), and cell lysis (C5b-9).

*noun*, immunology  
Roitt Immunology

**complement activation**

process in which the serum proteins of the complement system are involved in sequential activation that produces effector molecules involved in inflammation, phagocytosis and cytolysis.

*noun*, immunology  
Williams

**complement receptor**

cell surface receptors for various components of complement.

*noun*, immunology  
Larousse Science

**complementary**

said of a nucleic acid sequence in relation to another if it is able to form a perfectly hydrogen-bonded duplex with it, according to the Watson-Crick rules of base pairing.

*adjective*, genetics  
Biomedical Engineering Handbook

**complete denture** *full denture*

denture that replaces all the teeth in either the upper or the lower jaw, or both.

*noun*, dentistry  
Heinemann Dental

**complete Freund's adjuvant**

a water in oil emulsion with added heat-killed mycobacteria into which is incorporated an antigen

for the purpose of immunisation against it.

*noun*, immunology  
Larousse Science

**complex fracture**

fracture in which the break lines spread in different directions.

*noun*, medicine  
Heinemann Dental

**compliance**

1. the act of complying with the rules and procedures set out in a set of regulations.

*noun*, regulatory affairs  
Williams

2. quality of yielding to pressure without disruption, particularly as an expression of the distensibility of an air or fluid-filled organ, e.g., lung or urinary bladder, in terms of unit of volume change per unit of pressure change.

*noun*, biology  
Dorland Medical

3. ease with which a body can be deformed elastically or the linear displacement produced by unit force.

*noun*, material science  
Larousse Science

Notes: The reciprocal of stiffness.

**complication**

1. occurrence of several diseases in the same patient.

*noun*, medicine  
Dorland Medical

2. an adverse event occurring as a side effect or consequence of a course of medical or surgical treatment.

*noun*, clinical practice  
Williams

**component**

any raw material, substance, piece, part, software, firmware, labelling or assembly which is intended to be included as part of the finished, packaged, and labelled device.

*noun*, regulatory affairs  
CFR

**composite**

1. made up of distinct parts.

*adjective*, general  
Longmans

2. shortened form of composite material used as a restorative dental material.

*noun*, dentistry  
Williams

Notes: This use is not recommended in scientific writing.

**composite material**

structural material made of two or more distinctly different materials, where each component contributes positively to the final properties.

*noun*, material science  
Larousse Science

Notes: Generally confined to materials involving combinations of components from two of the basic material classes, metals, ceramics and polymers rather than a combination of materials within the same class. A material that contains a filler purely for the purpose of reducing costs is not considered to be a composite material. In a composite material the components should be distinguishable at a microscopic level.

**composite structure**

any structure made by bonding two or more distinctly different components.

*noun*, engineering

Williams

Notes: A composite structure involves the assembly of different components, usually distinguishable at the macroscopic level, in contrast to composite materials which involve the microscopic dispersion of different materials.

**compound fracture** *open fracture*

fracture exposed through broken skin.

*noun*, medicine

Dorland Medical

**compressibility**

the property of a substance by which it accepts reduction in volume by pressure.

*noun*, engineering

Larousse Science

**compression moulding** (compression molding)

process for moulding a material in a confined cavity by applying pressure and, usually, heat.

*noun*, engineering

ASTM

**compression set**

permanent deformation of a material resulting from the application of compressive stress.

*noun*, material science

Szycher's Biomaterials

**compression test**

test in which specimens of structures or materials are subjected to an increasing compressive force, usually until they fail by cracking, buckling or disintegration.

*noun*, engineering

Larousse Science

**compressive strength**

maximal load sustained by a test specimen of a material in a compressive test divided by the original area of the specimen.

*noun*, material science

Szycher's Biomaterials

**compressive stress**

stress which causes an elastic body to shorten in the direction of the applied force.

*noun*, engineering

McGraw-Hill Engineering

**computed tomography** *computerised axial tomography* **CT**

an imaging method in which a cross-sectional image of the structures in a body plane is reconstructed by a computer from the X-ray absorption of beams projected through the body in the image plane.

*noun*, medicine

Dorland Medical

**computer-aided design** **CAD**

the use of a computer, especially with high resolution graphics, in design activities.

*noun*, engineering

Larousse Science

**computer-aided manufacture** **CAM**

a manufacturing process which is computer controlled.

*noun*, engineering

Larousse Science

**computerised axial tomography** *computed tomography* **CAT**

an imaging method in which a cross-sectional image of the structures in a body plane is reconstructed by a computer from the X-ray absorption of beams projected through the body in the image plane.

*noun*, medicine

Dorland Medical

**concave**

having an inward curve or a hollowed surface.

*noun*, general

Heinemann Dental

**concentration-effect relationship**

association between the exposure concentration and the magnitude of a continuously graded effect in an individual or a population.

*noun*, biology

OECD

**concretion**

1. a process of becoming harder or more solid.

*noun*, medicine

2. a calculus or inorganic mass in a natural cavity or in tissue.

*noun*, medicine

3. abnormal union of adjacent parts.

*noun*, medicine

Dorland Medical

**condensation**

1. the packing of filling materials into a tooth cavity.

*noun*, dentistry

Dorland Medical

2. a chemical reaction in which two or more molecules combine, with the separation of water, alcohol, or other simple substance.

*noun*, chemistry

Szycher's Biomaterials

**condensation polymer**

polymer produced by polymerisation reaction in which an acid/base reaction occurs, with the evolution of a small molecule.

*noun*, polymer science

ASTM

**condenser**

instrument with a blunt, serrated edge, used for packing and compressing gold-foil or amalgam fillings.

*noun*, dentistry

Heinemann Dental

**condom**

sheath which completely covers the penis with a closely fitting membrane, used for contraceptive and for prophylactic purposes (preventing transmission of venereal disease).

*noun*, medical device technology

CFR

**conducting polymer**

organic polymer that conducts electricity.  
*noun*, polymer science  
Oxford Science

**condyle**

smooth rounded protuberance, at the end of a bone, which fits into a socket on an adjacent bone.  
*noun*, anatomy  
Larousse Science

**condylectomy**

surgical removal of condyle.  
*noun*, surgery  
Heinemann Dental

**condylotomy**

surgical division of or incision into a condyle.  
*noun*, surgery  
Heinemann Dental

**cone**

one of a large number of light sensitive structures in the retina which respond preferentially to particular wavelengths and thus provide the basis for colour vision.  
*noun*, ophthalmology  
Larousse Science

**confidence interval**

an interval so constructed that a statement that the true value of an unknown parameter lies in this interval will be true a proportion of the time that the statement is made, this proportion corresponding to the prescribed level of confidence expressed as a percentage.  
*noun*, statistics  
Larousse Science

**confidentiality**

pertains to the treatment of information that an individual has disclosed in a relationship of trust and with the expectation that it will not be divulged to others without permission in ways that are inconsistent with the understanding of the original disclosure  
*noun*, clinical practice  
IRB Guidebook

**confluence**

condition in cell culture when the number of cells produced by replication is such as to form a complete monolayer on the surface of the medium.  
*noun*, biology  
Williams

**confocal microscope**

form of light microscope in which an aperture in the illuminating system confines the illumination to a small spot on the specimen and a corresponding aperture in the imaging system allows only light transmitted, reflected or emitted by the same spot to contribute to the image.  
*noun*, biology  
Larousse Science

**conformation**

the shapes or arrangements in three-dimensional space that an organic molecule assumes by rotating carbon atoms or their substituents around single

covalent bonds.

*noun*, chemistry  
Szycher's Biomaterials

**conformational change**

process by which the arrangement of a molecule, especially a protein molecule, changes, such that the properties of the molecule are altered.  
*noun*, biology  
Williams

**confounding**

the confusion of the effects of factors in an experiment such that it is not possible to identify, separately, the effects of the factors.  
*adjective*, statistics  
Larousse Science

**congenital**

present at and existing from the time of birth.  
*adjective*, medicine  
Dorland Medical

**congenital deformities**

malformations present at birth.  
*noun*, medicine  
Larousse Science  
Notes: Does not have to be a genetically determined defect, but may be due to environmental factors *in utero*, e.g. thalidomide.

**congestive heart failure**

pathophysiologic state in which an abnormality of cardiac function is responsible for the failure of the heart to pump blood at a rate commensurate with the requirements of the body.  
*noun*, medicine  
Biomedical Engineering Handbook

**conjugate**

covalently-linked complex of two or more molecules (e.g. fluorescein conjugated to antibody).  
*noun*, immunology  
Roitt Immunology

**conjugation**

process of union between two cells or gametes.  
*noun*, genetics  
Larousse Science

**conjunctiva**

the modified epidermis of the front of the eye, covering the cornea externally and the inner side of the eyelid.  
*noun*, ophthalmology  
Larousse Science

**conjunctival**

pertaining to the route of administration of a drug or device into the conjunctiva.  
*adjective*, ophthalmology  
Szycher's Biomaterials

**conjunctivitis**

inflammation of the conjunctiva.  
*noun*, medicine  
Larousse Science

**connective tissue**

tissue that holds together the different structures in the body comprising a matrix of mucopolysaccharides in which are embedded a

variety of specialist tissues and cells.

*noun*, anatomy  
Black's Medical

**connective tissue diseases**

term used to cover a number of diseases of uncertain aetiology including disseminated lupus erythematosus, scleroderma and polyarteritis nodosa.

*noun*, medicine  
Larousse Science

**connector**

1. any part of a partial denture whose function is to link two of the major components of the denture.

*noun*, dentistry  
Heinemann Dental

2. device intended for the joining and fixation of implantable shunt components at operation.

*noun*, medical device technology  
ASTM

**conservative dentistry**

that branch of restorative dentistry concerned with the treatment and restoration of individual diseased or injured teeth.

*noun*, dentistry  
Heinemann Dental

**conservative treatment**

medical treatment which involves the minimum of active interference by the practitioner.

*noun*, clinical practice  
Black's Medical

**constitutive**

produced constantly or in fixed amounts, regardless of environmental conditions or demand.

*adjective*, biology  
Dorland Medical

**constrained joint prosthesis**

joint replacement prosthesis that is constructed so that it prevents dislocation of the prosthesis in more than one anatomic plane and consists of either a single, flexible, across-the-joint component or more than one component linked together or affixed.

*noun*, medical device technology  
CFR

**constriction**

narrowing or compression of a part; a stricture.

*noun*, medicine  
Dorland Medical

**constrictive fibrosis** *capsular contracture*

uncomfortable or painful condition in patients with breast implants in which the fibrous capsule that forms around the implant becomes dense and oriented such that it shrinks and compresses the device.

*noun*, medical device technology  
Williams

**construct**

1. anything that is constructed, either physically or mentally.

*noun*, general  
Longmans

2. in tissue engineering, any combination of synthetic material with cells and/or biomolecules.

*noun*, biomaterials science  
Williams

**contact activation**

process of activation of the clotting cascade that is initiated by contact with a foreign surface and involves the intrinsic pathway.

*noun*, biomaterials science  
Williams

**contact angle**

angle between the liquid and the solid at the liquid-solid-gas interface.

*noun*, physics  
Larousse Science

**contact area**

any one of the areas of contact on the approximal surfaces of adjacent teeth.

*noun*, dentistry  
Heinemann Dental

**contact dermatitis**

form of dermatitis in which a skin rash is produced following direct contact with a foreign substance, either as a result of a direct toxic effect or as an allergic response.

*noun*, medicine  
Williams

**contact guidance**

the directional translocation of cells in response to some anisotropic property of the substratum.

*noun*, biology  
Biomedical Engineering Handbook

**contact inhibition**

inhibition of cell division and cell motility in normal animal cells when in close contact with each other.

*noun*, biology  
Dorland Medical

**contact lens**

a curved shell of transparent material applied directly over the globe or cornea to correct refractive errors or for therapeutic purposes.

*noun*, ophthalmology  
Dorland Medical

**contact lens spoilation**

general term used to describe the physical and chemical changes that take place at the surface of contact lenses in association with extraneous deposits.

*noun*, ophthalmology  
Williams

**contaminate**

to soil, render non-sterile or make impure by the addition of foreign material or organisms.

*verb*, general  
Heinemann Dental

**continnence**

ability to control natural impulses.

*noun*, medicine  
Dorland Medical

**continuous ambulatory peritoneal dialysis****CAPD**

a modality of peritoneal dialysis in which uninterrupted treatment is provided by 4-6 daily cycles of filling and emptying the peritoneal cavity with a prepared dialysate solution in which solute removal relies on diffusive equalisation with molecular species present in capillary blood.

*noun*, medicine

Biomedical Engineering Handbook

**continuous culture**

technique used to grow micro-organisms or cells continually in a particular phase of growth.

*noun*, biology

Oxford Science

**continuous positive airway pressure CPAP**

a spontaneous ventilation mode in which the ventilator maintains a constant positive pressure in the patient's airway while patient breathes at will.

*noun*, medicine

Biomedical Engineering Handbook

**continuous release**

general term for the prolonged, uninterrupted release of a drug from a delivery system.

*noun*, pharmacology

Williams

**contour**

1. the external shape of any object.

*noun*, general

2. to carve or otherwise create the external form, as of artificial teeth or fillings.

*verb*, dentistry

Heinemann Dental

**contra-**

against; opposed.

*prefix*, general

Dorland Medical

**contra-angle**

double angle or a series of angles in the shank of an instrument bringing its point or edge into line with the axis of the handle.

*noun*, dentistry

Heinemann Dental

**contra-angle handpiece**

one that has two or more bends in the shaft.

*noun*, dentistry

Heinemann Dental

Notes: Designed to reach areas of the oral cavity where access is limited.

**contraceptive**

1. any agent that prevents or minimises the chances of conception.

*noun*, medicine

2. that which diminishes the likelihood of or prevents conception.

*adjective*, medicine

Dorland Medical

**contraceptive device**

any device used to prevent conception, usually either by a barrier method that prevents sperm meeting an ovum or by an intrauterine device that

inhibits the implantation of a fertilised ovum in the uterus.

*noun*, medical device technology

Williams

**contraceptive diaphragm**

closely fitting membrane placed between the posterior aspect of the pubic bone and the posterior vaginal fornix, covers the cervix completely and is used with a spermicide to prevent pregnancy.

*noun*, medical device technology

CFR

**contraceptive tubal occlusion device TOD**

device designed to close a fallopian tube with a mechanical structure, e.g., a band or clip on the outside of the fallopian tube or a plug or valve on the inside, used to prevent pregnancy.

*noun*, medical device technology

CFR

**contract**

1. an agreement.

*noun*, general

Longmans

2. an agreement that a specific research activity will be performed at the request, and under the direction, of the agency providing the funds.

*noun*, general

IRB Guidebook

Notes: Research performed under contract is more closely controlled by the agency than research performed under a grant.

**contractile tissue**

group of animal tissues which possess the property of contractility; more commonly spoken of as muscle.

*noun*, anatomy

Larousse Science

**contractility**

the power of becoming reduced in length, exhibited by some cells and tissues.

*noun*, anatomy

Larousse Science

**contraction**

1. decrease in size, either of length, area or volume.

*noun*, general

2. shortening and tensing of a muscle.

*noun*, general

Heinemann Dental

**contraindicated**

said of a treatment that should not be used in certain individuals or conditions due to risks.

*adjective*, clinical practice

IRB Guidebook

Notes: For example, a drug may be contraindicated for pregnant women and persons with high blood pressure.

**contraindication**

any symptom or additional condition which makes a particular form of treatment unsuitable.

*noun*, clinical practice

Heinemann Dental

**contralateral**

relating to the side opposite a structure or lesion.

*adjective*, anatomy

Heinemann Dental

**contrast**

1. difference in density seen in a radiograph as a result of the difference in radiopacity of the components under examination.

*noun*, medicine

Heinemann Dental

2. difference between optical density measurements made on the background and on the test specimen.

*noun*, ophthalmology

ASTM

**contrast medium**

radio-opaque substance used in radiography to permit visualisation of internal body structures.

*noun*, medicine

Dorland Medical

**control**

1. natural regulation of biological processes.

*noun*, biology

2. the part of an experiment that acts as a standard by which to compare experimental observations.

*noun*, general

Oxford Science

3. subject used for comparison who is not given a treatment under study or who does not have a given condition, background, or risk factor that is the object of study.

*noun*, clinical practice

IRB Guidebook

Notes: Control conditions may be concurrent (occurring more or less simultaneously with the condition under study) or historical (preceding the condition under study). When the present condition of subjects is compared with their own condition on a prior regimen or treatment, the study is considered historically controlled.

**control mechanism**

any mechanism that regulates a biological process, such as a metabolic pathway or enzyme-controlled reaction, or that helps to maintain the internal environment.

*noun*, biology

Oxford Science

**control number**

unique series of letters, numbers or symbols, or any combination of these, that is assigned to a medical device by the manufacturer and from which a history of the manufacture, packaging, labelling and distribution of a unit, lot or batch of the device can be determined.

*noun*, regulatory affairs

ISO

**controlled release**

regulation of the rate of drug delivery to provide a specified profile of release over the lifetime of the product.

*noun*, pharmacology

Williams

**contused wound**

one in which the skin is unbroken.

*noun*, medicine

Dorland Medical

**contusion** *bruise*

superficial injury caused by a blow, with no laceration but with discoloration of the skin and subcutaneous tissue produced by an accumulation of blood.

*noun*, medicine

Heinemann Dental

**convertase**

enzyme of the complement system that activates specific components of the system.

*noun*, immunology

Dorland Medical

**convex**

having an outward curve or a domed surface.

*adjective*, general

Heinemann Dental

**convexoconcave**

having one convex and one concave surface.

*adjective*, general

Dorland Medical

**convexoconvex**

convex on two surfaces.

*adjective*, general

Dorland Medical

**convulsion**

generalised involuntary spasm of those muscles normally under control of the will.

*noun*, medicine

Larousse Science

**cope** *coping*

metal plate used to cover the root of a tooth before attaching an artificial crown.

*noun*, dentistry

Heinemann Dental

**coping** *cope*

1. thin metal cap.

*noun*, general

2. thin covering designed to fit the implant abutment and connect it to the prosthesis or superstructure.

*noun*, dentistry

Heinemann Dental

**copolymer**

polymer consisting of molecules characterised by the repetition of two or more different types of monomeric units.

*noun*, polymer science

ASTM

**copper** Cu

bright, reddish metallic element, at. no. 29.

*noun*, chemistry

Larousse Science

**copper amalgam**

amalgam alloy containing mainly copper and mercury.

*noun*, dentistry

Heinemann Dental

**coral**

any of a group of sedentary colonial marine invertebrates belonging to the class *Anthozoa* of

the phylum *Cnidaria*.

*noun*, biology

Oxford Science

Notes: Certain preparations of coral are used as biomaterials for bone defect filling.

**cordotomy**

surgical division of the lateral spinothalamic tract of the spinal cord, usually in the anterolateral quadrant.

*noun*, surgery

Dorland Medical

**core**

metal casting, suitably shaped, and generally held in place by a post, over which an artificial crown can be fitted.

*noun*, dentistry

Heinemann Dental

**coring**

microstructure seen in a metal casting in which there is a gradation of solute ion concentration within grains due to the change in solubility as the alloy cools.

*noun*, metallurgy

Williams

**corium**

the dermis.

*noun*, anatomy

Dorland Medical

**cornea**

the transparent layer of tissue, continuous with the sclera, that forms the front part of the eye, over the iris and lens.

*noun*, ophthalmology

Oxford Science

**corneal graft**

graft taken from the cornea of a human donor.

*noun*, ophthalmology

Black's Medical

**corneal ulcer** *ulcerative keratitis*

inflammation of the cornea with ulceration of the corneal epithelium, usually as a result of bacterial invasion of the cornea.

*noun*, ophthalmology

Dorland Medical

**corona discharge**

method of etching polymer surfaces by electrical discharge.

*noun*, physics

Larousse Science

**coronal**

relating to a crown.

*adjective*, dentistry

Heinemann Dental

**coronal pulp**

that part of the dental pulp found within the crown of the tooth.

*noun*, dentistry

Heinemann Dental

**coronary**

encircling like a crown.

*adjective*, anatomy

Dorland Medical

Notes: Applied to vessels, ligaments, etc., especially to the arteries of the heart, and to pathologic involvement of them.

**coronary artery**

series of arteries that supply blood to the muscles of the heart wall.

*noun*, anatomy

Larousse Science

**coronary artery bypass** **CAB**

surgical bypassing of a blocked or narrow coronary artery.

*noun*, surgery

Larousse Science

**coronary artery bypass graft** *cabbage* **CABG**

a construction of new blood conduits between the aorta (or other major arteries) and segments of coronary arteries beyond lesions which partially or totally obstruct the lumen of those vessels, for the purpose of providing an increased blood supply to regions of the myocardium made ischemic by those lesions.

*noun*, surgery

Biomedical Engineering Handbook

**coronary artery disease** **CAD**

atherosclerosis of the coronary arteries, which may cause angina pectoris, myocardial infarction, and sudden death.

*noun*, medicine

Dorland Medical

**coronary embolism**

embolism of a coronary artery.

*noun*, medicine

Dorland Medical

**coronary occlusion**

complete obstruction of an artery of the heart.

*noun*, medicine

Dorland Medical

**coronary sinus**

the terminal portion of the great cardiac vein, lying in the coronary sulcus between the left atrium and ventricle, and emptying into the right atrium.

*noun*, anatomy

Dorland Medical

**coronary thrombosis**

formation of a clot in one of the coronary arteries leading to obstruction of the artery and infarction of the area of the heart supplied by it.

*noun*, medicine

Larousse Science

**coronary valve**

that at the entrance of the coronary sinus into the right atrium.

*noun*, anatomy

Dorland Medical

**corpus callosum**

sweeping band of white matter that provides a connection between the two halves of the cerebrum in the brain.

*noun*, anatomy

Oxford Science

**corpuscle**

any small mass or body.

*noun*, biology  
Dorland Medical

**correlation**

the tendency for variation in one variable to be accompanied by linear variation in another.

*noun*, statistics  
Larousse Science

**correlation coefficient**

a statistical index of the degree of relationship between two variables.

*noun*, statistics  
IRB Guidebook

Notes: Values of correlation coefficients range from -1.00 through zero to +1.00. A correlation coefficient of 0.00 indicates no relationship between the variables. Correlations approaching -1.00 or +1.00 indicate strong relationships between the variables. However, causal inferences about the relationship between two variables can never be made on the basis of correlation coefficients alone, no matter how strong a relationship is indicated.

**corrosion**

1. chemical or electrochemical reaction of a solid material (usually a metal or alloy) with the environment which causes measurable material property changes.

*noun*, material science

2. production of irreversible tissue damage at the site of contact with the skin following the application of a test substance.

*noun*, biomaterials science  
ISO

Notes: In view of the established use of other terms to describe the components of such irreversible tissue damage more specifically, this definition is not recommended.

**corrosion fatigue**

accelerated weakening of a structure exposed to cyclic stress due to both chemical penetration and fatigue.

*noun*, material science  
Larousse Science

**cortex**

1. external layer of an organ, within the capsule.

*noun*, anatomy

2. outer layer of grey matter of the brain.

*noun*, anatomy  
Heinemann Dental

**cortical bone**

thin outer layer of compact bone, made up of lamellated rings of collagen fibres.

*noun*, anatomy  
Heinemann Dental

**cortical electrode**

electrode which is temporarily placed on the surface of the brain for stimulating the brain or recording the brain's electrical activity.

*noun*, medical device technology  
CFR

**cortical tension**

analogous to surface tension of a liquid drop, it is a persistent contractile force per unit length at the surface of a white blood cell.

*noun*, biology

Biomedical Engineering Handbook

**corticosteroid**

any of the steroids elaborated by the adrenal cortex.

*noun*, biology  
Dorland Medical

**cortisol**

the major natural glucocorticoid elaborated by the adrenal cortex.

*noun*, biology  
Dorland Medical

**cortisone**

natural glucocorticoid that is metabolically convertible to cortisol.

*noun*, biology  
Dorland Medical

**corundum**

oxide of aluminium, crystallising in the trigonal system.

*noun*, material science  
Larousse Science

Notes: Used as an abrasive.

**cosmesis**

1. preservation, restoration, or bestowing of bodily beauty.

*noun*, general

2. surgical correction of a disfiguring physical defect, or the surgical enhancement of appearance.

*noun*, surgery  
Dorland Medical

**cosmetic**

1. beautifying substance or preparation.

*noun*, general

2. pertaining to cosmesis.

*adjective*, medicine  
Dorland Medical

**cosmetic surgery**

surgical correction of a disfiguring physical defect, or the surgical enhancement of appearance.

*noun*, surgery  
Larousse Science

**costochondral**

pertaining to a rib and its cartilage.

*noun*, medicine  
Dorland Medical

**cottonseed oil**

oil from the seeds of *Gossypium heraceum*, a yellow, brown, or dark-red liquid.

*noun*, chemistry  
Larousse Science

Notes: Used as an extraction medium for cytotoxicity and other biological testing procedures.

**coulomb C**

unit of electrical charge, defined as the quantity of electrical charge transferred across a surface by 1 ampere in 1 second.

*noun*, physics  
Dorland Medical

**Coulter counter**

automatic instrument used in enumeration of formed elements in the peripheral blood.

*noun*, medicine  
Dorland Medical

**counterpulsation**

technique for assisting the circulation and decreasing the work of the heart, by synchronising the force of an external pumping device with cardiac systole and diastole.

*noun*, medicine  
Dorland Medical

**countersink**

a bevelled depression in a surface to accommodate the head of a screw or rivet.

*noun*, engineering  
Heinemann Dental

**counterstain**

stain applied to render the effects of another stain more discernible.

*noun*, biology  
Dorland Medical

**coupling agent**

chemical substance capable of reacting with both the reinforcing agent and the resin matrix of a composite material to promote a stronger bond at the interface.

*noun*, material science  
Szycher's Biomaterials

**covalent bond**

chemical bond in which two or more atoms are held together by the interaction of their outer electron clouds.

*noun*, chemistry  
Larousse Science

**covariance**

a measure of the association between two variables.

*noun*, statistics  
Larousse Science

**cover slip**

the thin slip of glass used for covering a specimen that is being observed under a microscope.

*noun*, biology  
Larousse Science

**coxa**

the hip.  
*noun*, medicine  
Dorland Medical

**coxa valga**

deformity of the hip with increase in the angle of inclination between the neck and shaft of the femur.

*noun*, medicine  
Dorland Medical

**coxa vara**

deformity of the hip with decrease in the angle of inclination between the neck and shaft of the femur.

*noun*, medicine  
Dorland Medical

**crack initiation**

process by which a crack in a material is started.

*noun*, engineering  
Williams

**crack propagation**

process by which a crack that has been initiated in a material continues to grow in size.

*noun*, engineering  
Williams

**cranial**

pertaining to the cranium.

*adjective*, anatomy  
Williams

**cranio-**

signifying cranium.

*prefix*, anatomy  
Heinemann Dental

**craniofacial**

relating to the cranium and the face.

*adjective*, dentistry  
Heinemann Dental

**craniofacial surgery**

that part of surgical practice that involves the cranium and upper part of the face.

*noun*, surgery  
Williams

Notes: The distinction between craniofacial and maxillofacial, which relates to the lower part of the face is somewhat arbitrary.

**cranioplasty**

any reconstructive operation on the skull.

*noun*, surgery  
Dorland Medical

**cranioplasty plate**

implanted prosthetic device used to repair or cover a skull defect or hole.

*noun*, medical device technology  
ASTM

**craniotomy**

any operation on the cranium.

*noun*, surgery  
Dorland Medical

**cranium**

the part of the skull enclosing the brain.

*noun*, medicine  
Black's Medical

**craze**

microfeature associated with fracture and failure of polymers, consisting of voided and oriented material formed at crack tip or rubber particles.

*noun*, material science  
Larousse Science

**crazing**

apparent fine cracks at or under the surface of a plastic.

*noun*, polymer science  
ASTM

**creatine**

compound, synthesised from the amino acids arginine, glycine, and methionine, that occurs in muscle.

*noun*, biology

Oxford Science

**creep**

time-dependent strain in solids caused by an applied stress.

*noun*, material science  
Larousse Science

**creep curve**

presentation of creep data in the form of strain versus time graph, at various stress levels for a given temperature.

*noun*, engineering  
Larousse Science

**creep limit**

the maximum stress a given material can withstand in a given time without exceeding a specified quantity of creep.

*noun*, engineering  
McGraw-Hill Engineering

**creep modulus**

measure of modulus of material (especially polymeric) determined from elongation of specimen under a constant applied load.

*noun*, engineering  
Larousse Science

**creep recovery**

strain recovered in a period of time after release of load in a creep test.

*noun*, engineering  
McGraw-Hill Engineering

**creep rupture**

type of failure in materials where constant applied load causes the sample to elongate and finally fail by parting.

*noun*, material science  
Larousse Science

**creep strength**

1. ability of a material to resist deformation under constant stress, measured as the amount of creep induced by a constant stress acting for a given time and temperature.

*noun*, material science  
Larousse Science

2. the stress which, at a given temperature, will result in a creep rate of 1% deformation within 100,000 hours.

*noun*, engineering  
McGraw-Hill Engineering

**creep test**

method for measuring the resistance of metals to creep.

*noun*, engineering  
Larousse Science

**crenate**

scalloped or notched.

*adjective*, anatomy  
Dorland Medical

**crest**

projection, or projecting structure or ridge, especially one surmounting a bone or its border.

*noun*, anatomy  
Dorland Medical

**Creutzfeldt-Jakob disease CJD**

rare but usually fatal, transmissible spongiform encephalopathy.

*noun*, medicine  
Dorland Medical

Notes: A version of CJD, referred to as new variant CJD or nvCJD is thought to be caused by the transmission of prion proteins from animals suffering from a transmissible spongiform encephalopathy, such as BSE, to humans. This phenomenon is the main cause for concern over using tissues of animal origin as biomaterials.

**crevice**

1. fissure.

*noun*, general  
Dorland Medical

2. narrow split or fissure in a tooth.

*noun*, dentistry  
Heinemann Dental

**crevice corrosion**

in a liquid-containing system, the acceleration of corrosive attack on a metal encountered in crevices and cracks at the surface which are partly segregated from the main flow and where build up of ions and salts or oxygen deficiency may occur.

*noun*, material science  
Larousse Science

**crevicular**

pertaining to a crevice, especially the gingival crevice.

*adjective*, medicine  
Dorland Medical

**crimp**

the waviness of a fibre, measured as the difference between the straightened and crimped fibre expressed as a percentage of the straightened length.

*noun*, material science  
Larousse Science

**crystalite**

mineral form of silicon (IV) oxide, SiO<sub>2</sub>.

*noun*, chemistry  
Oxford Science

**critical point**

critical temperature of a substance at which the pressure and volume have their critical values and the densities (and other physical properties) of the liquid and gaseous states are identical.

*noun*, physics  
Larousse Science

**critical point method**

technique for preparing tissue or metaphase chromosomes for electron microscopy, by freeze-drying at the critical point of water.

*noun*, physics  
Larousse Science

**critical surface tension**

the property of a material numerically equal to the surface tension of the liquid, in dynes/cm, which gives a contact angle of zero with that material.

*noun*, material science  
Williams

**cross-bite**

form of malocclusion caused by an abnormality of the lateral relationship of the jaws to each other, thus preventing normal occlusion because the buccolingual relationships of opposing teeth are the reverse of normal.

*noun*, dentistry  
Heinemann Dental

**cross-link density**

density of chemical cross-links in a polymer.

*noun*, polymer science  
Larousse Science

**cross-linking**

formation of covalent side bonds between different chains in a polymer.

*noun*, polymer science  
Larousse Science

**cross-linking agent**

substance that is used as an initiator of the reaction that establishes cross-links between reactive sites in adjacent polymer chains.

*noun*, polymer science  
Brett-Strong Plastics

**cross-over design**

type of clinical trial in which each subject experiences, at different times, both the experimental and control therapy.

*noun*, clinical practice  
IRB Guidebook

Notes: For example, half of the subjects might be randomly assigned first to the control group and then to the experimental intervention, while the other half would have the sequence reversed.

**cross-plyed laminate**

laminate in which successive layers have different orientations.

*noun*, engineering  
Williams

**cross-reactivity**

fortuitous recognition by lymphocyte antigen receptors (B-cell immunoglobulin or T-cell antigen receptors) of epitopes on proteins unrelated to those which produced them.

*noun*, immunology  
Larousse Science

**crossover**

an exchange of segments of homologous chromosomes during meiosis whereby linked genes become recombined.

*noun*, genetics  
Larousse Science

**crown**

1. the topmost part of an organ or structure, e.g., the top of the head.

*noun*, anatomy  
Dorland Medical

2. that part of a tooth, covered by enamel, which is exposed above the gum.

*noun*, dentistry

3. artificial cap to fit over the stump of a carious or of a fractured tooth.

*noun*, dentistry  
Heinemann Dental

**cruciate** *cruciform*

having the form of, or arranged like, a cross.

*adjective*, general  
Larousse Science

**cruciate ligament**

a more or less cross-shaped ligament which arises from the femur and passes through the intercondylar space to attach to the tibia.

*noun*, anatomy  
Dorland Medical

Notes: In humans there is one anterior and one posterior cruciate ligament.

**cruciform** *cruciate*

having the form of, or arranged like, a cross.

*adjective*, anatomy  
Larousse Science

**cry(o)-**

cold.

*prefix*, physics  
Dorland Medical

**cryoanalgesia**

relief of pain by application of cold by cryoprobe to peripheral nerves.

*noun*, medicine  
Dorland Medical

**cryobiology**

study of the effects of very low temperatures on organisms, tissues, and cells.

*noun*, biology  
Oxford Science

**cryogenic**

description of low-temperature substances and apparatus.

*adjective*, physics  
Larousse Science

**cryomicrotomy**

technique for preparing thin sections of tissues or polymers which are too flexible or ductile to be cut at normal temperatures, in which the material is cooled to a low temperature and cut on a microtome.

*noun*, material science  
Williams

**cryopreservation**

maintenance of the viability of excised tissue or organs by storing at very low temperatures.

*noun*, medicine  
Dorland Medical

**cryoprotectant**

chemical additive used to protect substances during cooling to low temperatures by reducing freezing injury.

*noun*, biology  
Biomedical Engineering Handbook

**cryostat**

apparatus used to provide low-temperature environments in which operations may be carried out under controlled conditions.

*noun*, physics  
McGraw-Hill Engineering

**cryosurgery**

destruction of tissue by application of extreme cold.

*noun*, surgery  
Dorland Medical

**cryotherapy**

therapeutic use of cold.

*noun*, medicine  
Dorland Medical

**crypt(o)-**

concealed.

*prefix*, general  
Dorland Medical

**crystal**

1. solid with a regular polyhedral shape.

*noun*, material science  
Oxford Science

2. homogeneous solid displaying an orderly and repetitive steric arrangement of its atoms.

*noun*, material science  
Szycher's Biomaterials

**crystal axes**

axes of the natural co-ordinate system formed by the crystal lattice.

*noun*, material science  
Larousse Science

**crystal boundary** *grain boundary*

one of the surfaces of contact between adjacent crystals in a metal or other crystalline material.

*noun*, material science  
Larousse Science

**crystal face**

one of the bounding surfaces of a crystal.

*noun*, material science  
Larousse Science

**crystal habit**

external form of a crystal.

*noun*, material science  
Oxford Science

**crystal lattice**

the regular pattern of atoms, ions, or molecules in a crystalline substance.

*noun*, material science  
Oxford Science

**crystal system**

method of classifying crystalline substances on the basis of their unit cell.

*noun*, material science  
Oxford Science

**crystal violet** *gentian violet*

dye belonging to the rosaniline group, used as a superficial antiseptic.

*noun*, medicine  
Black's Medical

**crystalline**

having a regular internal arrangement of atoms, ions, or molecules.

*adjective*, material science  
Oxford Science

**crystalline lens**

transparent refractive body of the eye.

*noun*, ophthalmology  
Larousse Science

**crystalline polymers**

polymers containing a portion of their atoms and molecules arranged in a crystal lattice.

*noun*, polymer science  
Szycher's Biomaterials

**crystalline solid**

solid in which the atoms or molecules are arranged in a regular manner.

*noun*, material science  
Larousse Science

**crystallinity**

general term referring to any of the parameters of a crystalline or partially crystalline material.

*noun*, material science  
Williams

**crystallisation** (crystallization)

process of forming crystals from a liquid or gas.

*noun*, chemistry  
Oxford Science

**crystallite**

small crystal.

*noun*, material science  
Oxford Science

**crystallographic axe**

one of the lines of reference intersecting at the centre of a crystal.

*noun*, material science  
Larousse Science

**crystallographic plane**

any one of a set of parallel and equally spaced planes that may be supposed to pass through the centres of atoms in crystals.

*noun*, material science  
Larousse Science

**crystallographic system**

any of the major units of crystal classification embracing one or more symmetry classes.

*noun*, material science  
Larousse Science

**cubic close packing**

stacking of spheres formed by placing close packed layers in the sequence ABCABC, the unit cell of such an arrangement being a face-centred cube, with four atoms per cell.

*noun*, chemistry  
Larousse Science

**cubic crystal**

crystal in which the unit cell is a cube.

*noun*, material science  
Oxford Science

**cuff**

small, band-like structure encircling a part or object.

*noun*, general  
Dorland Medical

**culture**

1. batch of cells, which can be micro-organisms or of animal or plant origin, that are grown under specific conditions of nutrient levels, temperature, pH, oxygen levels, osmotic factors, light, pressure, and water content.

*noun*, biology

Oxford Science

2. to produce or grow a batch of cells in the laboratory or in a reaction vessel.

*verb*, medicine

Dorland Medical

#### **culture medium**

nutrient material, either solid or liquid, used to support the growth and reproduction of micro-organisms or to maintain tissue or organ cultures.

*noun*, biology

Oxford Science

#### **culture vessel**

any vessel including glass petri dishes, plastics culture dishes, plastics culture flasks or plastics multi-wells and microtiter plates in or on which cell cultures are grown.

*noun*, biology

ISO

#### **cuneiform**

wedge-shaped

*adjective*, general

Dorland Medical

#### **cuprophane**

membrane made of regenerated cellulose, commonly used in haemodialyzers.

*noun*, biomaterials science

Dorland Medical

#### **cure**

1. to treat disease or injury successfully.

*verb*, clinical practice

Heinemann Dental

2. to change the properties of a polymeric system into a more stable, usable condition for example by polymerisation or cross-linking through the use of heat, radiation, or reaction with chemical additives.

*verb*, polymer science

ASTM

#### **cure cycle**

schedule of time periods at specified conditions to which a reacting thermosetting material is subjected to reach a specified property level.

*noun*, polymer science

ASTM

#### **cure time** *curing time*

interval of time from the start of reaction to the time at which specified properties of the reacting thermosetting composition are reached.

*noun*, polymer science

ASTM

Notes: For materials that react under the conditions of mixing, the start of reaction is the time of initial exposure to the conditions necessary for reaction to occur.

#### **curettage**

1. the scraping of the walls of cavities, especially of the uterus.

*noun*, surgery

Larousse Science

2. removal of foreign matter from the walls of a bony cavity, from tooth root surfaces or periodontal pockets.

*noun*, surgery

Heinemann Dental

#### **curette**

spoon-shaped instrument used in surgery for scooping out the contents of any cavity of the body.

*noun*, surgery

Black's Medical

#### **curie Ci**

unit of radioactivity.

*noun*, physics

Dorland Medical

#### **curing**

1. fermentation or ageing process of natural products, e.g. rubber, tobacco, etc.

*noun*, general

2. chemical process undergone by a thermo-setting plastic by which the liquid resin cross-links to form a solid.

*noun*, polymer science

Larousse Science

#### **curing agent** *hardner*

substance or mixture of substances added to a compound to promote or control the curing reaction.

*noun*, polymer science

Szycher's Biomaterials

#### **curing temperature**

temperature at which a thermosetting or elastomeric material is subjected in order to attain cure.

*noun*, polymer science

Szycher's Biomaterials

#### **curing time** *cure time*

time necessary to attain full cure in a thermosetting resin or rubber.

*noun*, polymer science

Szycher's Biomaterials

#### **current density**

current flowing per unit cross-sectional area of conductor or plasma.

*noun*, physics

Larousse Science

#### **cusps**

pointed or rounded projection, such as on the crown of a tooth, or one of the triangular segments of a cardiac valve.

*noun*, anatomy

Dorland Medical

#### **cuspal angle**

angle of incline of the sides of a cusp made with a perpendicular line bisecting the cusp, measured mesiodistally or buccolingually.

*noun*, dentistry

Heinemann Dental

#### **cuspid**

1. canine tooth.

*noun*, dentistry  
2. having one cusp or point.  
*adjective*, anatomy  
Dorland Medical

**custom device**

medical device intended for use by an individual patient named in the order of a physician or dentist and is to be made in a specific form for that patient, or is intended to meet the special needs of the physician or dentist in the course of professional practice, and which is not offered for purchase, dispensing upon prescription or commercial distribution.  
*noun*, regulatory affairs  
CFR

**custom-made device**

1. any medical device specifically made in accordance with a duly qualified medical practitioner's written prescription which gives, under his responsibility, specific design characteristics and is intended for the sole use of a particular patient.

*noun*, regulatory affairs

EU Directive

Notes: The prescription may also be made out by any other person authorised by virtue of his professional qualifications to do so. Mass-produced devices which need to be adapted to meet the specific requirements of the medical practitioner or any other professional user are not considered to be custom-made devices.

2. a medical device, other than a mass-produced medical device, that a) is manufactured in accordance with a health care professional's written direction giving its design characteristics; b) differs from medical devices generally available for sale or from a dispenser; and c) is (i) for the sole use of a particular patient of that professional, or (ii) for use by that professional to meet special needs arising in the course of his or her practice.

*noun*, regulatory affairs

Canadian Medical Devices

**customer**

ultimate consumer, user, client, beneficiary or second party.

*noun*, regulatory affairs

ISO

**cutaneous**

relating to the skin.

*adjective*, anatomy

Heinemann Dental

**cutaneous electrode**

electrode that is applied directly to a patient's skin either to record physiological signals or to apply electrical stimulation.

*noun*, medical device technology

CFR

**cutdown**

creation of a small incised opening, especially over a vein to facilitate venepuncture and permit passage of a needle or cannula for withdrawal of blood or administration of fluids.

*noun*, medicine

Dorland Medical

**cuticle**

1. layer covering the free surface of an epithelial cell.

*noun*, anatomy

2. outer layer of the skin.

*noun*, anatomy

Heinemann Dental

**cutis**

the skin.

*noun*, anatomy

Dorland Medical

**cyanoacrylate**

term given to an derivative of  $\text{CNCCH}_2\text{COO—}$ .

*noun*, chemistry

Williams

**cyanoacrylate adhesive**

any adhesive based on an alkyl derivative of cyanoacrylate.

*noun*, biomaterials science

Williams

Notes: These include methyl, isobutyl and n-butyl cyanoacrylates, used as tissue adhesives.

**cyanosis**

bluish discoloration of skin and mucous membranes due to excessive concentration of reduced haemoglobin in the blood.

*noun*, medicine

Dorland Medical

**cycle**

regularly repeated set of changes to a system that brings back all its parameters to their original values once in every set of changes.

*noun*, general

Oxford Science

**cyclic**

describing a compound that has a ring of atoms in its molecules.

*adjective*, chemistry

Oxford Science

**cyclic AMP**

derivative of ATP that is widespread in animal cells as a second messenger in many biochemical reactions induced by hormones.

*noun*, biology

Oxford Science

**cyclic compounds**

closed-chain or ring compounds consisting either of carbon atoms only (carbocyclic compounds), or of carbon atoms linked with one or more other atoms (heterocyclic compounds).

*noun*, chemistry

Larousse Science

**cyclic monomer**

any monomer whose molecule exists as a ring structure, where the polymerisation process involves opening of the ring.

*noun*, polymer science

Williams

**cyclic stress**

stress that is applied to a material or device that is not constant but varies in a repetitive fashion between maximum and minimum values.

*noun*, engineering

Williams

Notes: Under experimental conditions the pattern of variation will usually be uniform, for example a sinusoidal variation between identical maxima and minima, whilst under service conditions the variation may be less uniform.

**cyclo-oxygenase**

an enzyme that acts on arachidonic acid to produce prostaglandins and thromboxanes.

*noun*, biology

Larousse Science

Notes: May be inhibited by aspirin-like drugs.

**cyclohexanone**

C<sub>6</sub>H<sub>10</sub>O. A colourless liquid produced by the oxidation of cyclohexane; used as a powerful solvent.

*noun*, chemistry

Szycher's Biomaterials

**cyclophosphamide**

cytotoxic drug used as an immunosuppressive.

*noun*, pharmacology

Roitt Immunology

**cyclosporine A**

a T-cell specific immunosuppressive drug used to prevent graft rejection.

*noun*, pharmacology

Roitt Immunology

**cyst**

any closed epithelium-lined cavity or sac, normal or abnormal, usually containing liquid or semisolid material.

*noun*, medicine

Dorland Medical

**cystectomy**

1. excision of a cyst.

*noun*, surgery

2. excision or resection of the bladder.

*noun*, surgery

Dorland Medical

**cysteine Cys. short form C**

2-amino-3-mercaptopropanoic acid, HSCH<sub>2</sub>CH(NH<sub>2</sub>)COOH amino acid.

*noun*, chemistry

Larousse Science

**cystine**

molecule resulting from the oxidation reaction between the sulphhydryl (-SH?) groups of two cysteine molecules.

*noun*, chemistry

Oxford Science

**cysto(o)-**

sac, cyst; bladder.

*prefix*, medicine

Dorland Medical

**cystoid**

1. cyst-like, circumscribed collection of softened material, having no enclosing capsule.

*noun*, medicine

2. resembling a cyst.

*adjective*, medicine

Dorland Medical

**cystoproctostomy**

surgical creation of a communication between the urinary bladder and the rectum.

*noun*, surgery

Dorland Medical

**cystoscope**

device used to provide access, illumination, observation and manipulation of the urinary bladder.

*noun*, medical device technology

Szycher's Biomaterials

**cystoscopy**

visual examination of the urinary tract with an endoscope.

*noun*, medicine

Dorland Medical

**cyto-**

signifying cell or cells.

*prefix*, biology

Heinemann Dental

**-cyte**

signifying a cell.

*suffix*, biology

Williams

**cytochemistry**

specific staining of cellular components so that they can be localised by optical or electronmicroscopy.

*noun*, biology

Larousse Science

**cytochrome**

any of a group of proteins, each with an iron-containing haem group, that form part of the electron transport chain in mitochondria and chloroplasts.

*noun*, biology

Oxford Science

**cytochrome oxidase**

enzyme complex comprising the terminal two cytochromes of the respiratory chain in the mitochondria.

*noun*, biology

Oxford Science

**cytochrome P450**

large family of haem-containing microsomal monooxygenases catalysing the introduction of oxygen into a substrate, particularly foreign toxins.

*noun*, biology

Larousse Science

**cytocompatibility**

general term used to describe a condition in which a substance or material has no adverse effects on cells in culture.

*noun*, biomaterials science

Williams

**cytodifferentiation**

development of specialised structures and functions in embryonic cells.

*noun*, embryology

Dorland Medical

**cytogenetics**

the study of inheritance in relation to the structure and function of cells.

*noun*, genetics  
Oxford Science

**cytokine**

low molecular weight protein released by a cell that stimulates or inhibits the differentiation, proliferation or function of immune cells.

*noun*, immunology  
Roitt Immunology

**cytology**

the study of the structure and function of cells.

*noun*, biology  
Oxford Science

**cytolysis**

breakdown of cells.

*noun*, biology  
Oxford Science

**cytomegalovirus**

any of a group of highly host-specific herpes viruses, infecting man, monkeys, or rodents.

*noun*, medicine  
Dorland Medical

**cytopathogenic**

capable of producing pathologic changes in cells.

*adjective*, medicine  
Dorland Medical

**cytopenia**

deficiency in the number of any of the cellular elements of the blood.

*noun*, medicine  
Dorland Medical

**cytoplasm**

protoplasm of a cell exclusive of that of the nucleus.

*noun*, biology  
Dorland Medical

**cytoskeleton**

network of fibres permeating the matrix of living cells that provides a supporting framework for organelles, anchors the cell membrane, facilitates cellular movement, and provides a suitable surface for chemical reactions to take place.

*noun*, biology  
Oxford Science

**cytosol**

semi-fluid soluble part of the cytoplasm of cells, which contains the microfilaments of the cytoskeleton.

*noun*, biology  
Oxford Science

**cytotoxic**

able to kill or damage cells.

*adjective*, biology  
Larousse Science

**cytotoxic drug**

term used for drugs used in the treatment of cancer.

*noun*, medicine  
Larousse Science

**cytotoxic effect**

any one of the detrimental effects on cells in culture including decreased plating efficiency, lysis, inhibition of macro-molecular synthesis and cell growth, and detachment of cells from the substrate.

*noun*, biology  
ASTM

**cytotoxic substance**

any substance that inhibits or prevents the function of cells, or causes destruction of cells or both.

*noun*, biology  
ASTM

**cytotoxic T lymphocyte CTL**

T-cells (usually CD8+) which kill target cells following recognition of foreign peptide-MHC molecules on the target cell membrane.

*noun*, immunology  
Roitt Immunology

**cytotoxicity**

effect or range of effects, microscopic and/or visual ranging from impairment in growth to complete cell lysis or dissolution, caused by the presence of test materials, in cultures, relative to control cultures.

*noun*, biomaterials science  
ASTM

**cytotoxicity test**

tests using cell culture techniques to determine the lysis of cells (cell death), the inhibition of cell growth, and other effects on cells caused by devices, materials and/or their extracts.

*noun*, biomaterials science  
ISO

**Dacron**

trade name of a polyester textile fibre.

*noun*, polymer science  
Larousse Science

Notes: Widely used for vascular prostheses and other implantable devices.

**dalton D, Da**

arbitrary unit of mass, being 1/12 the mass of the nuclide of carbon 12, equivalent to  $1.657 \times 10^{-24}$  g.

*noun*, chemistry  
Dorland Medical

**dam rubber dam**

thin sheet of latex rubber used to isolate teeth from mouth fluids during dental therapy.

*noun*, dentistry  
Dorland Medical

**data and safety monitoring board**

committee that collects and analyses data during the course of a clinical trial to monitor for adverse effects and other trends that would warrant modification or termination of the trial or notification of subjects about new information that might affect their willingness to continue in the trial.

*noun*, clinical practice  
IRB Guidebook

Notes: Membership of the Board will include scientists, physicians, statisticians, and others. Trends would include an

indication that one treatment is significantly better than another, particularly when one arm of the trial involves a placebo control.

**Daubert rules**

rules that apply to the ability of a U.S. Court to determine the admissibility of scientific expert testimony.

*noun*, legal

Journal of Women's Health

Notes: The Court must decide in a given case if the proposed testimony is good science, reflects current scientific knowledge, was derived by accepted scientific methods, and is relevant to that particular case, logically addressing a material issue. Extensively involved in breast implant litigation.

**deamination**

removal of the amino group, —NH<sub>2</sub>, from a compound.

*noun*, chemistry

Dorland Medical

**death**

point at which the processes that maintain an organism alive no longer function.

*noun*, medicine

Oxford Science

**débridement**

1. removal of foreign material or devitalised tissue from or adjacent to a traumatic or infected lesion.

*noun*, medicine

Dorland Medical

2. removal of dead tissue and foreign matter from a wound.

*noun*, dentistry

Heinemann Dental

**debriefing**

process of giving subjects previously undisclosed information about the research project following completion of their participation in research.

*noun*, clinical practice

IRB Guidebook

**debris**

1. the remains of something broken down.

*noun*, general

Longmans

2. fragments of devitalised tissue or foreign matter.

*noun*, medicine

Dorland Medical

**deca-**

ten

*prefix*, general

Dorland Medical

**decalcification**

loss or removal of the calcium salts in bone or calcified tissue.

*noun*, biology

Heinemann Dental

**decalcify**

to remove calcium salts in bone or calcified tissue.

*verb*, biology

Heinemann Dental

**decarboxylase**

enzyme that catalyses the removal of CO<sub>2</sub> from its substrate.

*noun*, biology

Larousse Science

**deciduous**

regularly or naturally shed; not permanent.

*adjective*, biology

Heinemann Dental

**Declaration of Helsinki**

code of ethics for clinical research approved by the World Medical Association in 1964 and widely adopted by medical associations in various countries. It was revised in 1975 and 1989.

*noun*, clinical practice

IRB Guidebook

**decubitus**

the special or preferred posture in bed of a patient suffering from a particular disease state.

*adjective*, medicine

Larousse Science

**decubitus ulcer**

ulcer or bed sore developing from prolonged immobility.

*noun*, medicine

Larousse Science

**dedifferentiation**

process of change in a differentiated tissue, leading to the reversion of cell types to a common indifferent form.

*noun*, biology

Larousse Science

**defaecation** (defecation)

expulsion of faeces from the rectum due to contractions of muscles in the rectal wall.

*noun*, biology

Oxford Science

**defect**

1. a fault, imperfection or blemish in any device.

*noun*, general

Williams

2. discontinuity in a crystal lattice.

*noun*, material science

Oxford Science

**defibrillation**

termination of atrial or ventricular fibrillation, usually by electric shock.

*noun*, medicine

Dorland Medical

**defibrillator**

device used to produce an electrical shock to restore normal heart rhythm, or to terminate cardiac arrhythmias.

*noun*, medical device technology

Szycher's Biomaterials

**deficiency disease**

any disease caused by an inadequate intake of an essential nutrient in the diet, primarily vitamins, minerals, and amino acids.

*noun*, medicine

Oxford Science

**defoamer**

1. agent that, when added to a fluid containing

entrained gas bubbles, causes the bubbles to coalesce into larger bubbles that rise to the surface.

*noun*, engineering

Szycher's Biomaterials

2. device used in conjunction with an oxygenator during open heart surgery to remove gas bubbles from the pumped blood.

*noun*, medical device technology

Szycher's Medical Devices

#### **deformability**

1. ability of materials to undergo shape change, either elastically or plastically, when subjected to applied stress, particularly during manufacturing processes.

*noun*, engineering

Williams

2. ability of cells, such as erythrocytes, to change shape as they pass through narrow spaces.

*noun*, medicine

Dorland Medical

#### **deformation**

any alteration of shape or dimensions of a body caused by stresses, thermal expansion or contraction, chemical or metallurgical transformations.

*noun*, engineering

McGraw-Hill Engineering

#### **degenerative arthritis**

osteoarthritis.

*noun*, medicine

Dorland Medical

#### **degradation**

deleterious change in the chemical structure, physical properties, or appearance of a material.

*noun*, material science

ASTM

#### **degradation product**

product of a material either particulate or molecular that is generated by degradation of that material.

*noun*, material science

ISO

#### **degree of conversion**

extent to which the number of bonds available for participation in a polymerisation or cross-linking reaction are actually involved in the process, expressed as a percentage.

*noun*, polymer science

Williams

#### **degree of crystallinity**

total crystalline content of a partially crystalline material.

*noun*, chemistry

Larousse Science

#### **degree of cure**

extent to which cross-linking (curing) has progressed in a thermosetting resin or rubber.

*noun*, polymer science

Szycher's Biomaterials

#### **degree of polymerisation (degree of polymerization) DP**

average number of repeating units in each molecule of a sample of a polymer, indicating the amount of monomer that has been converted into polymer.

*noun*, polymer science

Brett-Strong Plastics

#### **degrees of freedom**

1. number of independent parameters required to specify the configuration of a system.

*noun*, general

Oxford Science

2. number of independent capacities of a molecule for holding energy, translational, rotational and vibrational.

*noun*, chemistry

Larousse Science

#### **dehiscence**

1. development of an opening or split.

*noun*, surgery

Heinemann Dental

Notes: Used in particular to denote the re-opening of a sutured wound.

2. spontaneous and often violent opening of a fruit, seed pod, or anther to release and disperse the seeds or pollen.

*noun*, biology

Oxford Science

#### **dehydration**

1. removal of water from a substance.

*noun*, chemistry

Oxford Science

2. excessive loss of water from the tissues of the body.

*noun*, medicine

Larousse Science

#### **dehydrogenase**

any enzyme that catalyses the removal of hydrogen atoms in biological reactions.

*noun*, biology

Oxford Science

#### **dehydrogenation**

chemical reaction in which hydrogen is removed from a compound.

*noun*, chemistry

Oxford Science

#### **delamination**

1. the undesirable separation of one or more layers in a laminate caused by failure at the adhesive interface.

*noun*, material science

Szycher's Biomaterials

2. separation of tissue into layers, as of the blastoderm.

*noun*, biology

Dorland Medical

#### **delayed hypersensitivity**

slowly developing increase in cell-mediated (T-lymphocyte) immune response to a specific antigen, typically seen 48-72 hours after exposure.

*noun*, immunology

Dorland Medical

#### **delayed release**

process by which the release of the active ingredient of a drug from the product (for example a tablet) is delayed after administration to a patient, usually until the product has reached a specified part of the GI tract.

*noun*, pharmacology  
Williams

**Delrin**

trade name of an acetal resin.

*noun*, polymer science  
Larousse Science

Notes: Widely used for the construction of surgical instruments and occasionally for some implantable devices.

**demand pacemaker**

implanted cardiac pacemaker in which the generator stimulus is inhibited by a signal derived from the heart's electrical activation (depolarisation), thus minimising the risk of pacemaker-induced fibrillation.

*noun*, medical device technology  
Dorland Medical

**demineralisation** (demineralization)

loss or removal of minerals from the body.

*noun*, biology  
Heinemann Dental

**demineralised dentine** (demineralized dentin)

dentine that has undergone a decalcification process.

*noun*, dentistry  
Williams

**denaturation**

destruction of the native conformation or state of a biological molecule by heat, extremes of pH, heavy metal ions, chaotropic agents etc, resulting in loss of biological activity.

*noun*, biology  
Larousse Science

**dendrite**

tree-like crystal formation.

*noun*, material science  
Larousse Science

**dendritic cell**

a cell that has branching processes.

*noun*, biology  
Larousse Science

**denervation**

removal or resection of a nerve or nerves.

*noun*, surgery  
Heinemann Dental

**denier**

measure of structural form of a textile, specifically the weight in grams of 9000 meters of synthetic fibre in the form of a continuous monofilament.

*noun*, material science  
Szycher's Biomaterials

**dens in dente**

condition in which a tooth-like structure is present within the pulp chamber of a tooth.

*noun*, dentistry  
Heinemann Dental

**density**

ratio of the mass of a material to its volume.

*noun*, physics  
Larousse Science

**dent(o)-**

tooth; tooth-like.

*prefix*, dentistry  
Dorland Medical

**dental**

relating to the teeth and gums.

*adjective*, dentistry  
Heinemann Dental

**dental amalgam**

any amalgam used for filling teeth.

*noun*, dentistry  
Heinemann Dental  
Notes: Usually contains silver, tin and mercury.

**dental ankylosis**

type of tooth attachment where the tooth is directly connected to the bone, with no intervening soft tissue.

*noun*, dentistry  
Heinemann Dental

**dental arch**

bow-shaped arrangement of the teeth in the mandible and the maxilla.

*noun*, dentistry  
Heinemann Dental

**dental biomechanics**

study of the relationship between the function of oral structures and the effects of the introduction of a restoration or appliance within the mouth.

*noun*, dentistry  
Heinemann Dental

**dental burr**

rotary cutting device usually made tungsten carbide used to cut hard tissue, such as teeth or bone, or materials that are used in the fabrication of dental devices.

*noun*, dentistry  
Szycher's Medical Devices

**dental calculus**

deposit of calcium salts in an organic matrix attached to the teeth.

*noun*, dentistry  
Heinemann Dental

**dental canal** *alveolar canal*

any one of the canals in the maxilla or in the mandible which afford passage to the vessels or nerves supplying teeth.

*noun*, dentistry  
Heinemann Dental

**dental caries**

localised decay and disintegration of tooth enamel, dentine and/or cementum.

*noun*, dentistry  
Heinemann Dental

**dental cast**

positive copy of the tissues of the jaws, made in an impression, and over which denture bases or other

restorations may be fabricated.

*noun*, dentistry  
Dorland Medical

**dental casting alloy**

general term for any alloy that is capable of being cast into the form of a dental appliance.

*noun*, dentistry  
Williams

**dental cement**

material intended to serve as a temporary tooth filling or as a base cement to affix a temporary tooth filling, to affix dental devices such as crowns or bridges, or to be applied to a tooth to protect the tooth pulp.

*noun*, dentistry  
CFR

**dental enamel**

hard, thin, translucent substance covering and protecting the dentine of a tooth crown and composed almost entirely of calcium salts.

*noun*, dentistry  
Dorland Medical

**dental engine**

apparatus used to drive instruments for cutting, drilling and polishing the teeth.

*noun*, dentistry  
Heinemann Dental

**dental excavation**

removal of carious material from a tooth in preparation for filling.

*noun*, dentistry  
Dorland Medical

**dental forceps**

forceps used for the extraction of teeth.

*noun*, dentistry  
Heinemann Dental

**dental formula**

expression in symbols of the number and arrangement of teeth in the jaws.

*noun*, dentistry  
Dorland Medical

**dental galvanism**

production of an electric current caused when two dissimilar metals used as restorations in the mouth come into contact.

*noun*, dentistry  
Heinemann Dental

**dental handpiece**

AC-powered, water-powered, air-powered, or belt-driven, hand-held device that, with accessories, is intended to prepare dental cavities for restorations, such as fillings, and for cleaning teeth.

*noun*, dentistry  
CFR

**dental implant**

any device that is implanted under the oral tissues of the jaws, with some part protruding into the mouth.

*noun*, dentistry  
Heinemann Dental

**dental implantology** *implant dentistry, oral implantology*

branch of dentistry concerned with the design and use of prostheses involving some form of oral implant surgically inserted into hard or soft tissue within the mouth.

*noun*, dentistry  
Heinemann Dental

**dental impression**

impression made of the jaw and/or teeth which is later filled in with plaster of Paris to produce a facsimile of the oral structures.

*noun*, dentistry  
Dorland Medical

**dental lamina**

the ridge of thickened epithelium along the margin of the gum in the embryo, from which is formed the enamel organ.

*noun*, dentistry  
Heinemann Dental

**dental material**

1. any material used to replace or restore function of a tooth, or used as an accessory in an associated procedure.

*noun*, dentistry  
Williams

Notes: By convention all materials that are retained in the mouth after a dental procedure, such as fillings, orthodontic appliances and periodontal dressings, and materials used as accessories in associated clinical or laboratory procedures, such as impression material and investment material, are included.

2. medical device that is intended to be inserted into the pulp cavity of a tooth or attached only to the enamel or dentine of a tooth.

*noun*, dentistry  
Canadian Medical Devices

Notes: It does not include a surgical or dental instrument.

**dental mercury**

mercury intended for use as a component of amalgam alloy in the restoration of a dental cavity or a broken tooth.

*noun*, dentistry  
CFR

**dental notation**

any form of symbols used to indicate the type and place of a tooth.

*noun*, dentistry  
Heinemann Dental

**dental orthopaedics** (dental orthopedics)

*orthodontics*

study of craniofacial development, especially as related to dentofacial anomalies, malocclusion and irregularities of the teeth, and methods of treatment.

*noun*, dentistry  
Heinemann Dental

**dental plaque**

soft, concentrated mass, consisting of a large variety of bacteria, and their products, together with a certain amount of cellular debris, found adhering to the surfaces of the teeth when oral hygiene is neglected.

*noun*, dentistry  
Heinemann Dental

**dental prosthesis**

partial or full denture, crown or bridge, or any appliance to correct cleft palate.

*noun*, dentistry  
Heinemann Dental

**dental pulp**

richly vascularised and innervated connective tissue inside the pulp cavity of a tooth.

*noun*, dentistry  
Dorland Medical

**dental radiology**

the radiography and interpretation of X-ray films of the teeth and surrounding structures.

*noun*, dentistry  
Heinemann Dental

**dental restorative material**

any material used to replace all or part of a tooth.

*noun*, dentistry  
Williams

**dental ridge**

any elevation on a tooth, forming a cusp or tooth margin.

*noun*, dentistry  
Heinemann Dental

**dental splint**

any form of appliance or device used to fasten and immobilise the teeth.

*noun*, dentistry  
Heinemann Dental

**dental wax**

mixture of two or more natural and synthetic waxes, resins, colouring agents, and other additives.

*noun*, dentistry  
Dorland Medical

Notes: Uses include casting, constructing non-metallic denture bases, registering jaw relations, and as an aid in laboratory work.

**dentate**

having teeth, or projections like teeth on a serrated edge.

*adjective*, dentistry  
Heinemann Dental

**denticle**

1. small tooth-like process.

*noun*, dentistry

2. distinct calcified mass within the pulp chamber of a tooth.

*noun*, dentistry  
Dorland Medical

**dentifrice**

preparation for cleansing and polishing the teeth.

*noun*, dentistry  
Dorland Medical

**dentinal sclerosis**

mineralisation of the dentinal tubules producing translucent areas and tissue changes in the tooth.

*noun*, dentistry  
Heinemann Dental

**dentinal tubule**

one of the minute tubes in dentine, radiating from

the pulp chamber to the amelodentinal junction and the cementodentinal junction.

*noun*, dentistry  
Heinemann Dental

**dentine (dentin)**

chief substance of the teeth consisting of mineralised organic tissue surrounding the tooth pulp and covered by enamel on the crown and by cementum on the roots.

*noun*, dentistry  
Dorland Medical

**dentine adhesive (dentin adhesive)**

any adhesive specifically designed to promote bonding between a dental restorative material and dentine.

*noun*, dentistry  
Williams

**dentine bridge (dentin bridge)**

layer of dentine which reseals an exposed pulp or forms over the excised surface after pulpotomy.

*noun*, dentistry  
Heinemann Dental

**dentine primer (dentin primer)**

substance used to line the cut surface of dentine before a further application of a restorative material or adhesive.

*noun*, dentistry  
Williams

**dentino blast**

one of the cells from which dentine is formed.

*noun*, dentistry  
Heinemann Dental

**dentino blastoma**

benign tumour composed of dentine forming cells.

*noun*, dentistry  
Heinemann Dental

**dentino cemental junction**

line marking the fusion between dentine and cementum.

*noun*, dentistry  
Heinemann Dental

**dentino enamel junction**

the plane of meeting between dentine and enamel on the crown of a tooth.

*noun*, dentistry  
Dorland Medical

**dentino genesis**

formation of dentine.

*noun*, dentistry  
Dorland Medical

**dentino genesis imperfecta**

hereditary condition marked by imperfect formation and calcification of dentine, giving the teeth a brown or blue opalescent appearance.

*noun*, dentistry  
Dorland Medical

**dentistry**

branch of healthcare concerned with the teeth, oral cavity, and associated structures, including prevention, diagnosis, and treatment of disease

and restoration of defective or missing tissue.

*noun*, dentistry  
Dorland Medical

**dentition**

the teeth in the jaws.  
*noun*, dentistry  
Heinemann Dental

**denture**

set of artificial teeth.  
*noun*, dentistry  
Heinemann Dental

**denture adhesive**

substance intended to be applied to the base of a denture before the denture is inserted in a patient's mouth to improve denture retention and comfort.  
*noun*, dentistry  
CFR

**denture base** *base plate*

that part of a denture which rests on the alveolar ridges, and which may extend over the palate, and to which the artificial teeth are attached.  
*noun*, dentistry  
Heinemann Dental

**denture flange**

the buccal, labial or lingual vertical extension from the denture base into the oral cavity.  
*noun*, dentistry  
Heinemann Dental

**denture induced hyperplasia**

hyperplasia of the mucous membrane in the buccal and labial sulcus, caused by persistent irritation from poorly fitting dentures.  
*noun*, dentistry  
Heinemann Dental

**denture reliner**

material that is intended to be applied as a permanent coating or lining on the base or tissue-contacting surface of a denture to replace a worn denture lining and available for purchase over the counter.  
*noun*, dentistry  
CFR

**denture stomatitis**

inflammation of the oral mucosa caused by the presence of a denture.  
*noun*, dentistry  
Williams

Notes: Causative factors include microbial contamination of the denture, mechanical irritation and either hypersensitivity or chemical irritation associated with the denture base material.

**deoxyribonucleic acid DNA**

genetic material of most living organisms, which is a major constituent of the chromosomes within the cell nucleus and plays a central role in the determination of hereditary characteristics by controlling protein synthesis in cells.  
*noun*, genetics  
Dorland Medical

**dependent variable**

outcomes that are measured in an experiment. Dependent variables are expected to change as a result of an experimental manipulation of the independent variable(s).

*noun*, statistics  
IRB Guidebook

**depilatory**

compound for removing or destroying hair.  
*noun*, biology  
Larousse Science  
Notes: Usually a sulphide preparation.

**depolarisation** (depolarization)

shift in the negative resting potential of a cell towards zero, thus reducing its polarity.  
*noun*, biology  
Larousse Science

**depolymerisation** (depolymerization)

reverse of polymerisation which is induced by heat, free radicals, photons, radiation etc, and which generates monomer molecules and, possibly some oligomers or other low molecular weight species.  
*noun*, polymer science  
Larousse Science

**depot**

an area in which a substance may be deposited or stored and from which it can be distributed.  
*noun*, general  
Williams  
Notes: Could either be a natural part of the body or some device intended to regulate the distribution of a drug.

**depressed fracture**

fracture of the bones of the skull in which fragments have been depressed inwards.  
*noun*, medicine  
Heinemann Dental

**derivatisation**

process by which a polymer surface is altered so as to introduce different functional groups, which either modify surface properties directly or which are then able to interact with and bind to agents intended to modify surface properties.  
*noun*, polymer science  
Williams  
Notes: For example, the surface of a polyurethane may have different functional groups inserted into the surface structure, which then allows the binding of drugs with anti-platelet activity in order to improve blood compatibility.

**derivative**

material obtained from an animal tissue by a manufacturing process.  
*noun*, regulatory affairs  
CEN

Notes: Examples of such derivatives are : hyaluronic acid, collagen, gelatine, monoclonal antibodies. Natural substances such as milk, hair, wool and lanolin are excluded by this definition.

**dermatan sulphate** (dermatan sulfate)

glycosaminoglycan that is found in the extracellular matrix of skin and blood vessels.  
*noun*, biology  
Larousse Science

**dermatitis**

inflammation of the skin.

*noun*, medicine  
Dorland Medical

**dermis**

the inner layers of the integument, lying below the epidermis and consisting of mesodermal connective tissue.

*noun*, anatomy  
Larousse Science

**descriptive study**

any study that is not truly experimental.

*noun*, clinical practice  
IRB Guidebook

Notes: For example, quasi-experimental studies, correlational studies, record reviews, case histories, and observational studies.

**desensitisation (desensitization)**

method of reducing or abolishing the effects of a known allergen in a person by injecting it in gradually, increasing doses over a period of time, until resistance is built up.

*noun*, medicine  
Larousse Science

**design freeze**

point in the process of device development when a decision is reached that no further significant changes will be made to the design such that testing and validation procedures can be carried out and documented for regulatory approval purposes.

*noun*, engineering  
Williams

**design history file DHF**

compilation of records which describes the design history of a finished device.

*noun*, regulatory affairs  
CFR

**design input**

physical and performance requirements of a device that are used as a basis for device design.

*noun*, regulatory affairs  
CFR

**design output**

results of a design effort at each design phase and at the end of the total design effort.

*noun*, regulatory affairs  
CFR

**design review**

documented, comprehensive, systematic examination of a design to evaluate the adequacy of the design requirements, to evaluate the capability of the design to meet these requirements, and to identify problems.

*noun*, regulatory affairs  
CFR

**design stress**

permissible maximum stress to which a structural member may be subjected, which is large enough to prevent failure in case the loads exceed expected values.

*noun*, engineering  
McGraw-Hill Engineering

**design validation**

process of establishing by objective evidence that device specifications conform with user needs and intended use(s).

*noun*, regulatory affairs  
CFR

**designated agent**

the person, residing in the United States, designated and authorised by the owner or operator of a foreign manufacturer who exports devices into the United States and is legally responsible for relevant regulatory procedures.

*noun*, regulatory affairs  
CFR

Notes: These regulatory procedures for medical devices include: (1) submitting MDR reports, (2) submitting annual certifications, (3) acting as the official correspondent, (4) submitting registration information, (5) submitting device listing information, and (6) submitting premarket notifications on behalf of the foreign manufacturer. See entry under authorised representative for European equivalent.

**desmosome**

strong intercellular junctions which bind cells together, either at discrete points at the surface, or as continuous bands around cells.

*noun*, anatomy  
Larousse Science

**desquamation**

shedding of the surface layer of the skin.

*noun*, medicine  
Larousse Science

**detoxification**

1. reduction of the toxic properties of a substance.

*noun*, medicine

2. treatment designed to assist in recovery from the toxic effects of a drug or other substance.

*noun*, medicine  
Dorland Medical

**detritus**

particulate matter produced by or remaining after the wearing away or disintegration of a substance or tissue.

*noun*, medicine  
Dorland Medical

**detrusor**

1. denoting a body part, e.g., a muscle, that pushes down.

*adjective*, anatomy

2. pertaining to the detrusor muscle of the bladder.

*adjective*, anatomy  
Dorland Medical

**Deutsches Institut für Normung eV DIN**

German national organisation for the preparation and issue of standard specifications.

*noun*, regulatory affairs  
Larousse Science

**developmental toxicity test**

test to evaluate the potential effects of devices, materials and/or their extracts on embryonic development (teratogenicity) and prenatal and early postnatal development.

*noun*, biomaterials science  
ISO

Notes: This test should only be conducted when the device has potential impact on the reproductive potential of the subject. The application site of the device should be considered.

**device**

something contrived for a specific purpose.

*noun*, general  
Dorland Medical

**device for performance evaluation**

any device intended by the manufacturer to be subject to one or more performance evaluation studies in laboratories for medical analyses or in other appropriate environments outside his own premises.

*noun*, regulatory affairs  
EU Directive

**device for self-testing**

any device intended by the manufacturer to be able to be used by lay persons in a home environment

*noun*, regulatory affairs  
EU Directive

**device history record DHR**

compilation of records containing the production history of a finished device.

*noun*, regulatory affairs  
CFR

**device master record DMR**

compilation of records containing the procedures and specifications for a finished device.

*noun*, regulatory affairs  
CFR

**devitrification**

crystallisation of an amorphous substance.

*noun*, material science  
Biomedical Engineering Handbook

**dextran**

water soluble polysaccharide of glucose.

*noun*, medicine  
Dorland Medical  
Notes: Used as a plasma extender.

**diabetes**

any disorder characterised by excessive urine excretion.

*noun*, medicine  
Dorland Medical

**diabetes insipidus**

disease characterised by excessive thirst and the passing of large volumes of urine which have a low specific gravity and contain no abnormal constituents.

*noun*, medicine  
Black's Medical

**diabetes mellitus**

condition characterised by a raised concentration of glucose in the blood because of a deficiency in the production and/or action of insulin.

*noun*, medicine  
Black's Medical

**diagnosis**

determination of the nature of a disordered state of the body or of the mind.

*noun*, clinical practice

Larousse Science

**diagnostic procedure**

test used to identify a disorder or disease in a living person.

*noun*, clinical practice  
IRB Guidebook

**dialysate**

buffered electrolyte solution, usually containing glucose at or above physiologic concentration, circulated through the water compartment of a haemodialyser to control diffusional transport of small molecules across the membranes and achieve the blood concentrations desired.

*noun*, medical device technology  
Biomedical Engineering Handbook

**dialysis**

method by which large molecules (such as starch or protein) and small molecules (such as glucose or amino acids) in solution may be separated by selective diffusion, through a semi-permeable membrane.

*noun*, chemistry  
Oxford Science

**diamond**

one of the crystalline forms of carbon.

*noun*, dentistry  
Larousse Science

**diamond like carbon DLC**

material containing carbon and hydrogen deposited by plasma-enhanced chemical vapour deposition from hydrocarbon gases.

*noun*, material science  
Larousse Science

**diaphragm**

musculomembranous partition separating the abdominal and thoracic cavities and serving as a major inspiratory muscle.

*noun*, anatomy  
Dorland Medical

**diaphysis**

shaft of a long bone, between the epiphyses.

*noun*, anatomy  
Dorland Medical

**diarthrosis**

true (as opposed to a fixed) joint between two bones, in which there is a great mobility.

*noun*, anatomy  
Larousse Science

**diastema**

an abnormally wide space between two adjacent teeth, occurring naturally.

*noun*, dentistry  
Heinemann Dental

**diastole**

phase of a heart beat that occurs between two contractions of the heart, during which the heart muscles relax and the ventricles fill with blood.

*noun*, medicine  
Oxford Science

**diastolic murmur**

any murmur heard during diastole, usually due to semi-lunar valve regurgitation or to altered blood flow through atrioventricular valves.

*noun*, medicine  
Dorland Medical

**diathermy**

heating of tissues by high-frequency electric currents.

*noun*, surgery  
Larousse Science

**die**

tool or mould used to impart shape to, or to form impressions on, materials.

*noun*, engineering  
Szycher's Biomaterials

**dielectric**

non-conductor of electric charge in which an applied electric field causes a displacement of charge but not a flow of charge.

*noun*, physics  
Oxford Science

**dielectric constant**

property of a material which describes the electric flux density produced when the material is excited by an emf source.

*noun*, physics  
Larousse Science

**dielectric loss**

dissipation of power in a dielectric under alternating electric stress.

*noun*, physics  
Larousse Science

**dielectric loss angle**

the arithmetic difference between ninety degrees and the dielectric phase angle.

*noun*, physics  
Szycher's Biomaterials

**dielectric phase angle**

angle between an applied electric field and the corresponding conduction current vector.

*noun*, physics  
Larousse Science

**dielectric strength**

electric stress necessary to breakdown a dielectric.

*noun*, physics  
Larousse Science

**diene polymer**

one of a large family of polymers characterised by the presence of unsaturated hydrocarbons or diolefins having double bonds.

*noun*, polymer science  
Szycher's Biomaterials

**differential scanning calorimetry DSC**

type of thermal analysis similar to differential thermal analysis.

*noun*, chemistry  
Larousse Science

**differential thermal analysis DTA**

detection and measurements of changes of state and heats of reaction, especially in solids and

metals.

*noun*, chemistry  
Larousse Science

**differentiation**

expression of cell- or tissue-specific genes which results in the functional repertoire of a distinct cell type.

*noun*, genetics  
Biomedical Engineering Handbook

**differentiation antigen**

cell surface molecule expressed at a particular stage of development or on cells of a given lineage.

*noun*, immunology  
Roitt Immunology

**diffusion**

1. process of becoming diffused, or widely spread.

*noun*, general

2. spontaneous movement of molecules or other particles in solution, owing to their random thermal motion, to reach a uniform concentration throughout the solvent, the process requiring no addition of energy to the system.

*noun*, chemistry  
Dorland Medical

**diffusion coefficient D**

the coefficient of proportionality between molecular flux and concentration gradient in diffusion processes.

*noun*, chemistry  
Larousse Science

**dihydrate**

crystalline hydrate containing two moles of water per mole of compound.

*noun*, chemistry  
Oxford Science

**dihydroxyphenylalanine *dopa***

derivative of the amino acid tyrosine, found in particularly high levels in the adrenal glands and a precursor in the synthesis of dopamine, noradrenaline, and adrenaline.

*noun*, biology  
Oxford Science

**diisocyanate**

any organic compound having two isocyanate groups ( $\text{—NCO}$ ), used in the production of polyurethane elastomers, foams, adhesives.

*noun*, chemistry  
Szycher's Biomaterials

**dilation**

the act of dilating or stretching.

*noun*, general  
Dorland Medical

**dilator**

device for dilation of an intended body passage.

*noun*, medical device technology  
Szycher's Biomaterials

**diluent**

substance that lowers the concentration, viscosity, or cost of another material.

*noun*, material science  
Szycher's Biomaterials

**dimer**

molecule formed by the union of two identical simpler molecules.

*noun*, chemistry  
Szycher's Biomaterials

**dimethyl sulphoxide (dimethyl sulfoxide) DMSO**

powerful solvent with the ability to penetrate plant and animal tissues and to preserve living cells during freezing.

*noun*, chemistry  
Dorland Medical

**dimethylformamide DMF**

a colourless liquid,  $(\text{CH}_3)_2\text{NCHO}$ , used as a solvent.

*noun*, chemistry  
Larousse Science

**dimethylglyoxime DMG**

compound used in analysis as a specific and quantitative precipitant for palladium and nickel with which it gives a brilliant red precipitate.

*noun*, chemistry  
Larousse Science

**dinucleotide**

compound consisting of two nucleotides.

*noun*, chemistry  
Oxford Science

**dioctylphthalate DOP**

a common plasticiser.

*noun*, polymer science  
Larousse Science

**diopetre D**

unit for refractive power of lenses, being the reciprocal of the focal length expressed in meters

*noun*, ophthalmology  
Dorland Medical

**dip coating**

coating process wherein the object to be coated is immersed in a vessel containing a solution, dispersion, or heated fluid coating material, then withdrawn and subjected to heat or drying to solidify the film deposit.

*noun*, material science  
Szycher's Biomaterials

**diploid**

describing a nucleus, cell, or organism with twice the haploid number of chromosomes characteristic of the species.

*adjective*, genetics  
Oxford Science

**dipole**

pair of separated opposite electric charges.

*noun*, physics  
Oxford Science

**dipyridamole**

coronary vasodilator used as a phosphodiesterase inhibitor.

*noun*, medicine  
Dorland Medical

**direct bonding**

method of attaching an orthodontic appliance directly to the surfaces of teeth by techniques such

as acid etch, without the use of a clasp or band.

*noun*, dentistry  
Heinemann Dental

**direct current**

current which flows in one direction only.

*noun*, dentistry  
Larousse Science

**directions for use**

full information as to the procedures recommended for achieving the optimum performance of the device, and includes cautions, warning, contra-indications and possible adverse effects.

*noun*, regulatory affairs  
Canadian Medical Devices

**Directive**

a legal instrument of the European Union which defines the results to be achieved in a particular activity within the EU.

*noun*, legal  
Williams

**disaccharide**

sugar consisting of two linked monosaccharide molecules.

*noun*, chemistry  
Oxford Science

**disc (disk)**

rounded flattened structure such as the cartilaginous disc positioned between two vertebrae.

*noun*, anatomy  
Black's Medical

**discharge**

abnormal emissions from any part of the body.

*noun*, medicine  
Black's Medical

**disclosing agent *disclosing solution***

staining agent, which, when applied to the tooth surface attaches to the bacterial plaque and other surface deposits and shows them up in some distinct colour.

*noun*, dentistry  
Heinemann Dental

**disease**

condition in which the normal function of some part of the body (cells, tissues, or organs) is disturbed.

*noun*, clinical practice  
Oxford Science

**disinfectant**

any preparation that destroys the causes of infection.

*noun*, biology  
Larousse Science

**disinfection**

destruction of pathogenic bacteria.

*noun*, biology  
Larousse Science

**dislocation**

1. displacement of one part from another.

*noun*, general

2. lattice imperfection in a crystal structure.

*noun*, material science

Larousse Science

3. injury to joints such that the ends of the opposed bones are forced out of connection with one another.

*noun*, medicine

Black's Medical

**dispenser**

a person who is a member of a professional governing body and who is entitled, by virtue of their membership in that body, to manufacture or adapt a medical device in accordance with a health care professional's written directions in order to meet the specific requirements of a patient.

*noun*, regulatory affairs

Canadian Medical Devices

**dispersed phase**

substance in the colloidal state.

*noun*, chemistry

Larousse Science

**dispersion**

two-phase or multi-phase system comprising a finely divided material (the discontinuous phase) uniformly distributed in another material (the continuous phase).

*noun*, material science

Szycher's Biomaterials

**disposable**

item intended for single use.

*noun*, general

ASTM

**disproportionation**

chain termination reaction where two active free radical chain ends transfer electrons to form two dead chains.

*noun*, chemistry

Larousse Science

**dissect**

to cut apart, or separate.

*verb*, biology

Dorland Medical

**dissecting aneurysm**

the leaking of blood through a tear in the inner wall of the aorta producing a cleavage in the layers of the vessel and tracking of blood in a 'false lumen' along the aorta and its vessel wall.

*noun*, medicine

Larousse Science

**dissection**

1. the act of dissecting.

*noun*, biology

2. part or whole of an organism prepared by dissecting.

*noun*, biology

Dorland Medical

**dissociation**

breakdown of a molecule or ion into smaller molecules or ions.

*noun*, chemistry

Oxford Science

**dissolution**

the taking up of a substance by a liquid, with the formation of a homogeneous solution.

*noun*, chemistry

Larousse Science

**distal**

remote; farther from any point of reference.

*adjective*, anatomy

Dorland Medical

**distilled water**

water purified by distillation.

*noun*, chemistry

Dorland Medical

**distraction**

separation of joint surfaces without rupture of their binding ligaments and without displacement.

*noun*, medicine

Dorland Medical

**distributor**

any person who furthers the marketing of a device from the original place of manufacture to the person who makes final delivery or sale to the ultimate user but who does not repackage or otherwise change the container, wrapper, or labelling of the device or device package.

*noun*, regulatory affairs

CFR

**disulphide bonds** (disulfide bonds)

the -SS- linkage that is formed between sulphhydryl groups of cysteine and which stabilises the secondary structure of a protein.

*noun*, chemistry

Larousse Science

**disuse atrophy**

the wasting of muscles, bone or other tissue after prolonged immobility.

*noun*, medicine

Black's Medical

**ditching**

defect occurring at the junction of a dental restoration with the tooth substance, which produces a characteristic ditch-like appearance.

*noun*, dentistry

Heinemann Dental

**diuresis**

increase in the production of urine.

*noun*, medicine

Black's Medical

**diuretic**

drug which promotes sodium and water loss by the kidneys.

*noun*, pharmacology

Larousse Science

**diurnal**

daily, denoting an event that happens once every 24 hours.

*adjective*, general

Oxford Science

**divalent**

capable of combining with two atoms of hydrogen

or their equivalent.  
*adjective*, chemistry  
Larousse Science

**dmf index DMF**

expression used to indicate the number of decayed, missing or filled teeth in the primary dentition.  
*noun*, dentistry  
Heinemann Dental

**DNA repair**

a variety of mechanisms that help to ensure that the genetic sequence, as expressed in the DNA, is maintained and that errors that occur during DNA replications, by mutation, are not allowed to accumulate.  
*noun*, genetics  
Oxford Science

**DNA replication**

process whereby DNA makes exact copies of itself, which is controlled by the enzyme DNA polymerase.  
*noun*, genetics  
Oxford Science

**domain**

1. microstructural unit formed in polymeric materials, especially by segregation of different chain segments in copolymers.  
*noun*, polymer science
2. in ferroelectric, ferromagnetic and ferrimagnetic materials, a region where there is saturated polarisation, depending only on temperature.  
*noun*, physics  
Larousse Science

**donor**

1. individual whose tissues or organs are transferred to another (the recipient).  
*noun*, medicine  
Oxford Science
2. substance or compound that contributes part of itself to another substance (the acceptor).  
*noun*, chemistry  
Dorland Medical
3. atom, ion, or molecule that provides a pair of electrons in forming a co-ordinate bond.  
*noun*, chemistry  
Oxford Science

**dopa** *dihydroxyphenylalanine*

3,4-dihydroxyphenylalanine, produced by oxidation of tyrosine by monophenol monooxygenase.  
*noun*, medicine  
Dorland Medical

**dopamine**

1. catecholamine formed in the body by the decarboxylation of dopa.  
*noun*, biology  
Dorland Medical  
Notes: It is an intermediate product in the synthesis of norepinephrine, and acts as a neurotransmitter in the central nervous system.
2. sympathomimetic drug which acts on dopamine and adrenergic receptors to increase heart rate, cardiac output and blood pressure.  
*noun*, pharmacology  
Larousse Science

**Doppler effect**

the apparent change in the observed frequency of a wave as a result of relative motion between the source and the observer.  
*noun*, physics  
Oxford Science  
Notes: Used extensively in the analysis of blood flow.

**dors(o)-**

the back.  
*prefix*, anatomy  
Dorland Medical

**dorsal**

denoting a position more toward the back surface than some other object of reference.  
*adjective*, anatomy  
Dorland Medical

**dorsal column simulator**

an implantable device used to apply stimuli to the spinal column for the relief of pain.  
*noun*, medical device technology  
Williams

**dorsal root**

the part of a spinal nerve that enters the spinal cord on the dorsal side and contains only sensory fibres.  
*noun*, anatomy  
Oxford Science

**dosage**

the determination and regulation of the size, frequency, and number of doses of a drug.  
*noun*, pharmacology  
Dorland Medical

**dose**

1. quantity of material introduced.  
*noun*, general
2. prescribed quantity of a medicine or of a remedial agent.  
*noun*, pharmacology
3. general term for quantity of radiation.  
*noun*, physics  
Larousse Science

**dose-effect relationship**

association between the dose and the magnitude of a continuously graded effect in an individual or a population.  
*noun*, biology  
OECD

**dose-related effect**

situation in which the magnitude of a biological change is related to the dose.  
*noun*, biology  
OECD

**dose-response**

the relationship between the dose of a chemical and the extent of the toxic effect produced by the chemical in a biological system.  
*noun*, toxicology  
OECD

**dose-response assessment**

estimation of the relationship between dose, or level of exposure to a substance, and the incidence

and severity of an effect.

*noun*, toxicology

EU Directive

**dose-response curve**

graphical presentation of the relationship between degree of exposure to a substance (dose) and observed biological effect or response.

*noun*, toxicology

OECD

**double blind**

denoting a study of the effects of a specific agent in which neither the administrator nor the recipient, at the time of administration, knows whether the active or an inert substance is given.

*adjective*, medicine

Dorland Medical

**double bond**

covalent bond involving the sharing of two pairs of electrons.

*noun*, chemistry

Larousse Science

**double embedding**

technique for embedding small objects, otherwise liable to distortion or disorientation.

*noun*, biology

Larousse Science

**double layer**

a zone in a liquid in contact with a charged solid, such as an electrode, in which there is separation of charged species into two layers of opposite charge.

*noun*, chemistry

Williams

**double refraction** *birefringence*

phenomenon involving the splitting of incident light into two refracted rays vibrating at right angles to each other, causing two images to appear.

*noun*, physics

Larousse Science

**doughing time**

the time after commencement of mixing of a resin at which the mixture ceases to adhere to a standard probe.

*noun*, polymer science

ASTM

**downregulation**

the subsequent reduction in the responsiveness of a cell to a stimulus, after the first exposure to that stimulus.

*noun*, biology

Larousse Science

**drain**

any device by which a channel or open area may be established for exit of fluids or purulent material from a cavity, wound, or infected area.

*noun*, medical device technology

Dorland Medical

**drawn filled tube**

cylindrical metallic structure, produced by a drawing process, that consists of two concentric components, a solid core and a surrounding sleeve.

*noun*, engineering

Williams

Notes: Typically involves a highly conducting metal as the core and a corrosion resistant, mechanically robust sleeve, as used in the construction of a defibrillator electrode.

**drinking**

any material used for covering and protecting a wound.

*noun*, clinical practice

Dorland Medical

**drill**

1. rotating-end cutting tool for creating or enlarging holes in a solid material.

*noun*, engineering

McGraw-Hill Engineering

2. instrument with spiral flukes used in a dental engine for boring or cutting holes in a tooth or in bone.

*noun*, dentistry

Heinemann Dental

**drug**

1. any substance, natural or synthetic, which has a physiological action on a living body, either when used for the treatment of disease or the alleviation of pain or for recreation and self-indulgence.

*noun*, pharmacology

Larousse Science

2. article intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; and articles (other than food) intended to affect the structure or any function of the body of man or other animals.

*noun*, pharmacology

CFR

**drug delivery system**

any multicomponent device that has the intended function of delivering a drug to a patient in a known and controlled manner.

*noun*, medical device technology

Williams

**drug resistance**

condition in which tissues become resistant after treatment with drugs.

*noun*, pharmacology

Larousse Science

**dry ice**

solid carbon dioxide uses as a refrigerant.

*noun*, chemistry

Dorland Medical

**dry socket**

acute inflammatory condition of the walls of a tooth socket following extraction of a tooth.

*noun*, dentistry

Heinemann Dental

**Duchenne's muscular dystrophy**

the most common and severe type of pseudohypertrophic muscular dystrophy.

*noun*, medicine

Dorland Medical

**duct**

passage with well-defined walls, especially a tubular structure for the passage of excretions or

secretions.  
*noun*, anatomy  
Dorland Medical

**ductile**  
susceptible of being drawn out without breaking.  
*adjective*, material science  
Dorland Medical

**ductile fracture**  
type of fracture in any material where substantial deformation has occurred away from fracture surfaces.  
*noun*, material science  
Larousse Science

**ductile-brittle transition temperature  $T_b$**   
temperature at which the failure mode of a material, especially metals and plastics, changes from ductile, higher energy, to brittle, lower energy, as the temperature is reduced.  
*noun*, material science  
Larousse Science

**ductility**  
ability of metals to undergo plastic deformation without cracking or failure.  
*noun*, material science  
Williams

**ductus arteriosus**  
blood vessel important in foetal development linking the pulmonary artery to the aorta.  
*noun*, embryology  
Larousse Science

**duodenal ulcer**  
peptic ulcer situated in the duodenum.  
*noun*, medicine  
Dorland Medical

**duodenum**  
region of the small intestine immediately following the pylorus.  
*noun*, anatomy  
Larousse Science

**dura mater**  
outermost, toughest of the three meninges (membranes) of the brain and spinal cord.  
*noun*, anatomy  
Dorland Medical  
Notes: Has been used as a source of tissue for transplantation in reconstructive surgery.

**dura substitute**  
sheet or material that is used to repair the dura mater.  
*noun*, medical device technology  
CFR

**duration of contact**  
the total period of contact between a medical device and the tissues of a patient, either associated with a single exposure or with multiple exposures.  
*noun*, medical device technology  
Williams

**duration of contact of limited exposure**  
category of medical device whose single or multiple use is likely to be 24 hours or less.

*noun*, medical device technology  
ISO

**duration of contact of prolonged exposure**  
category of medical device whose single, multiple (cumulative) or long-term use is likely to exceed 24 hours but not 30 days.  
*noun*, medical device technology  
ISO

**durometer**  
instrument consisting of a small drill or blunt indenter point under pressure; used to measure hardness of metals and other materials.  
*noun*, engineering  
McGraw-Hill Engineering

**dwel time**  
duration of exposure of a solution used to draw waste products and excessive water out of the blood during peritoneal dialysis.  
*noun*, medicine  
Biomedical Engineering Handbook

**dynamic mechanical test**  
type of test which seeks to measure mechanical properties, e.g. tensile modulus E, under dynamic conditions, such as regular vibration.  
*noun*, engineering  
Larousse Science

**dynamic mechanical thermal analysis DMTA**  
method of measuring complex moduli of materials as a function of temperature.  
*noun*, engineering  
Larousse Science

**dyne**  
unit of force in the centimetre-gram-second system of units, equal to the force which imparts an acceleration of 1 cm/s<sup>2</sup> to a 1 gram mass.  
*noun*, physics  
McGraw-Hill Engineering

**dysfunction**  
disturbance, impairment, or abnormality of functioning of an organ.  
*noun*, medicine  
Dorland Medical

**dyskinesia**  
term for a number of conditions in which involuntary movements follow a definite pattern.  
*noun*, medicine  
Larousse Science

**dysplasia**  
1. abnormality of development.  
*noun*, embryology  
2. alteration in size, shape, and organisation of adult cells.  
*noun*, biology  
Dorland Medical

**dystrophic**  
relating to any disorder due to defective or faulty nutrition.  
*adjective*, medicine  
Dorland Medical

**dystrophy**

- any disorder due to defective or faulty nutrition.  
*noun*, medicine  
Dorland Medical
- dysuria**  
painful or difficult urination.  
*noun*, medicine  
Dorland Medical
- ear**  
organ of hearing and of equilibrium.  
*noun*, medicine  
Dorland Medical
- ear prosthesis**  
device intended to be implanted to reconstruct the external ear.  
*noun*, medical device technology  
CFR
- eccentric**  
situated or occurring or proceeding away from a centre.  
*adjective*, anatomy  
Dorland Medical
- echocardiography**  
examination of the structure and function of the heart using reflected pulsed ultrasound.  
*noun*, medicine  
Larousse Science
- ectomy**  
signifying excision.  
*suffix*, surgery  
Williams
- ectopia**  
displacement from normal position.  
*noun*, medicine  
Larousse Science
- ectopic**  
located away from normal position.  
*adjective*, medicine  
Dorland Medical
- ectopic calcification** *ectopic ossification*  
a pathological condition in which calcification arises in tissues not in the osseous system and in connective tissues usually not manifesting osteogenic properties.  
*noun*, medicine  
Dorland Medical
- ectopic ossification** *ectopic calcification*  
a pathological condition in which bone arises in tissues not in the osseous system and in connective tissues usually not manifesting osteogenic properties.  
*noun*, medicine  
Dorland Medical
- eczema**  
itching, inflammatory skin condition in which papules, vesicles and pustules may be present together with oedema, scaling or exudation.  
*noun*, immunology  
Larousse Science
- edentulous**  
having no teeth.  
*adjective*, dentistry  
Heinemann Dental
- edgewise appliance**  
form of fixed, multi-unit orthodontic appliance, using rectangular section archwire, attached to brackets or bands on individual teeth, the archwire being inserted with the long cross-section horizontal.  
*noun*, dentistry  
Heinemann Dental
- effective orifice area**  
cross sectional area of the orifice of a prosthetic heart valve through which blood can flow, which takes into account the apparent area of the annulus less that area taken up by the moving structures of the valve.  
*noun*, medical device technology  
Williams
- effector**  
1. an agent that mediates a specific effect.  
*noun*, general  
Dorland Medical  
2. cell or organ that produces a physiological response when stimulated by a nerve impulse.  
*adjective*, biology  
Oxford Science
- effector cell**  
any cell which carries out an immune function, e.g. cytokine release, cytotoxicity.  
*noun*, immunology  
Roitt Immunology
- effector neurone**  
nerve cell, such as a motor neurone, that transmits impulses from the central nervous system to an effector in order to bring about a physiological response to changes in the environment.  
*noun*, anatomy  
Oxford Science
- efferent**  
conveying away from a centre.  
*adjective*, anatomy  
Dorland Medical
- elast(o)-**  
flexibility.  
*prefix*, general  
Dorland Medical
- elastase**  
proteolytic enzyme, secreted by the pancreas, which digests elastin.  
*noun*, biology  
Larousse Science
- elastic**  
capable of sustaining deformation without permanent loss of size or shape.  
*noun*, material science  
McGraw-Hill Engineering
- elastic bandage**  
device consisting of either a long, flat strip or a tube of elasticised material used to support or compress a part of the body.

*noun*, medical device technology  
Szycher's Medical Devices

**elastic constants**

the parameters that govern stress-strain relationships in solids undergoing elastic deformation.

*noun*, engineering  
Williams

**elastic deformation**

any change in shape in response to an applied force in which the initial shape is recoverable with no sensible time delay when the applied force is removed.

*noun*, material science  
Larousse Science

**elastic limit**

the highest stress that can be applied to a material without producing a measurable amount of plastic (i.e. permanent) deformation.

*noun*, material science  
Larousse Science

**elastic modulus**

the ratio of the stress applied to a body to the strain produced under conditions of elastic deformation.

*noun*, engineering  
Oxford Science

**elastic recovery**

extent to which deformation sustained by a material is fully recoverable on removal of an applied load.

*noun*, material science  
Williams

**elastic strain**

the recoverable strain undergone by a material.

*noun*, material science  
Larousse Science

**elasticity**

property of materials that enables them to return to their original dimensions after an applied stress has been removed.

*noun*, material science  
Oxford Science

**elastin**

fibrous protein that is the major constituent of the yellow elastic fibres of connective tissue.

*noun*, anatomy  
Oxford Science

**elastomer**

macromolecular material that can sustain substantial deformation at low stresses at room temperature and return rapidly to its initial dimensions on release of the stress.

*noun*, polymer science  
ASTM

**elbow**

the bend of the arm; the joint connecting the arm and forearm.

*noun*, anatomy  
Dorland Medical

**elbow joint**

articulation between the humerus, ulna, and radius.

*noun*, anatomy  
Dorland Medical

**electret**

any disc of polymeric material that has been polarised so one side has a positive charge and the other side has a negative charge.

*noun*, polymer science  
Szycher's Biomaterials

**electric double layer**

1. positive and negative layer distribution of electric charge very close together so that effectively the total charge is zero but the two layers form an assembly of dipoles, thus giving rise to an electric field.

*noun*, chemistry

2. layer of adsorbed ions at the surface of a dispersed phase.

*noun*, chemistry  
Larousse Science

**electrical conductivity**

ratio of current density to applied electric field.

*noun*, physics  
Larousse Science

**electrical stimulation**

any process of applying an electrical stimulus to tissues of the body, typically for the restoration of lost muscle function or stimulation of the nervous system.

*noun*, medical device technology  
Williams

**electrocardiogram ECG**

graphic tracing of the variations in electrical potential caused by the excitation of the heart muscle and detected at the body surface.

*noun*, medicine  
Dorland Medical

**electrocautery**

process for cauterising tissue by means of a platinum wire heated by electric current.

*noun*, medicine  
Dorland Medical

**electrochemical cell**

any compartment in which an electrolyte is in contact with one component that acts as a cathode and another acts as an anode such that chemical changes take place within the electrolyte and electrical energy is either consumed or generated

*noun*, chemistry  
Williams

**electrochemical series**

series of chemical elements arranged in order of their electrode potentials.

*noun*, chemistry  
Oxford Science

**electrochemistry**

study of chemical properties and reactions involving ions in solution, including electrolysis and electric cells.

*noun*, chemistry  
Oxford Science

**electrocoagulation**

coagulation of tissue by means of an electric current.

*noun*, medicine  
Dorland Medical

**electrode**

conductor that emits or collects electrons in a cell, thermionic valve, semiconductor device, etc.

*noun*, physics  
Oxford Science

**electrode potential**

the potential difference produced between the electrode and the solution in a half cell.

*noun*, chemistry  
Oxford Science

**electrodeposition**

process of depositing one metal on another by electrolysis, as in electroforming and electroplating.

*noun*, chemistry  
Oxford Science

**electroencephalogram EEG**

tracing, graph or other record of the electrical activity of the brain.

*noun*, medicine  
Oxford Science

**electroforming**

primary process of forming metals, in which parts are produced by electrolytic deposition of metal on a conductive removable mould or matrix.

*noun*, engineering  
Larousse Science

**electrolyte**

liquid that conducts electricity as a result of the presence of positive or negative ions.

*noun*, chemistry  
Oxford Science

**electrolytic cell**

cell in which electrolysis occurs.

*noun*, chemistry  
Oxford Science

**electromyogram EMG**

record of bioelectric potentials in muscles.

*noun*, medicine  
Biomedical Engineering Handbook

**electron**

fundamental particle with negative electric charge that is a basic constituent of the atom.

*noun*, physics  
Larousse Science

**electron beam welding**

heating components to be welded by a concentrated beam of high-velocity electrons *in vacuo*.

*noun*, engineering  
Larousse Science

**electron microscope**

tube in which electrons emitted from the cathode

are focused, by suitable magnetic and electrostatic fields, to form an enlarged image of an object on a fluorescent screen.

*noun*, physics  
Larousse Science

**electron probe analysis**

technique of elemental microanalysis in which a beam of electrons is focused on to a point on the surface of the sample, the elements being detected both qualitatively and quantitatively by their resultant X-ray spectra.

*noun*, chemistry  
Larousse Science

**electron shell**

grouping of electrons surrounding the nucleus of an atom.

*noun*, physics  
Larousse Science

**electron spectroscopy for chemical analysis X-ray photoelectron spectroscopy ESCA**

method of surface analysis in which X-rays are focussed on the specimen and the emission of inner shell electrons is characterised in order to give information about the surface atoms.

*noun*, chemistry  
Williams

**electron spin resonance**

branch of microwave spectroscopy in which there is resonant absorption of radiation by a paramagnetic substance, possessing unpaired electrons, when the energy levels are split by the application of a strong magnetic field.

*noun*, chemistry  
Larousse Science

**electron volt**

general unit of energy of moving particles, equal to the kinetic energy acquired by an electron losing one volt of potential.

*noun*, physics  
Larousse Science

**electronegative**

carrying a negative charge of electricity.

*adjective*, physics  
Larousse Science

**electrophile**

ion or molecule that is electron deficient and can accept electrons.

*noun*, chemistry  
Oxford Science

**electrophoresis**

technique for the analysis and separation of colloids, based on the movement of charged colloidal particles in an electric field.

*noun*, chemistry  
Oxford Science

**electrophoretic deposition EPD**

deposition of one substance onto a substrate as a result of its movement to that substrate under the influence of an electrical field.

*noun*, chemistry  
Williams

**electrophysiology**

study of electrical phenomena associated with living organisms, particularly nervous conduction.

*noun*, biology  
Larousse Science

**electroplating**

deposition of one metal on another by electrolytic action on passing a current through a cell.

*noun*, engineering  
Larousse Science

**electropositive**

carrying a positive charge of electricity.

*noun*, physics  
Larousse Science

**electrostatic bonding**

chemical bond in which an electron is transferred from one atom to another, the resulting ions being held together by electrostatic attraction.

*noun*, chemistry  
Larousse Science

**electrosurgery**

surgery performed by electrical methods; the active electrode may be a needle, bulb or disk

*noun*, surgery  
Dorland Medical

**element**

simple substance which cannot be resolved into simpler substances by normal chemical means.

*noun*, chemistry  
Larousse Science

**elevator**

1. instrument used as a lever to remove sunken or embedded parts or particles.

*noun*, surgery

2. instrument used to remove tooth roots, or those teeth that cannot be extracted with forceps.

*noun*, dentistry  
Heinemann Dental

**Elgiloy**

trade name for a high strength, corrosion resistant Co/Cr/Mo/Ni alloy.

*noun*, biomaterials science  
Williams

Notes: Used in a variety of implantable devices including electrodes.

**elimination *removal***

process by which the number of viruses and transmissible agents is significantly reduced.

*noun*, regulatory affairs

CEN

Notes: The effectiveness of the process should be expressed in mathematical terms.

**ellipsometry**

technique for the analysis of surface layers, and especially adsorbed species on surfaces, by the characterisation of optical interference effects.

*noun*, biomaterials science

Williams

Notes: Used to study protein adsorption on biomaterials surfaces.

**elongation**

the percentage extension produced in a tensile test.

*noun*, material science

Larousse Science

**elongation at break**

amount of deformation that has taken place at the point of fracture of a test sample of a material, expressed as percentage strain.

*noun*, engineering  
Williams

**eluate**

enriched solution that forms during the process of elution.

*noun*, chemistry  
Larousse Science

**eluent**

liquor that forms during the process of elution.

*noun*, chemistry  
Williams

**elution**

separation of material by washing; the process of pulverising substances and mixing them with water in order to separate the heavier constituents, which settle out in solution, from the lighter.

*noun*, chemistry  
Dorland Medical

**embedding**

fixation of tissue in a firm medium, in order to keep it intact during cutting of thin sections.

*noun*, biology  
Dorland Medical

**embolectomy**

removal of an embolus.

*noun*, medicine  
Larousse Science

**embolism**

sudden blocking of an artery by a clot, foreign material or air bubble which has been brought to its site of lodgement by the blood.

*noun*, medicine  
Dorland Medical

**embolus**

1. clot or mass formed in one part of the circulation and impacted in another, to which it is carried by the blood stream.

*noun*, medicine  
Larousse Science

2. emboliform nucleus of the cerebellum.

*noun*, anatomy  
Dorland Medical

**embrittlement**

reduction or loss of ductility or toughness in a metal or plastic with little change in other mechanical properties.

*noun*, material science  
McGraw-Hill Engineering

**embryo**

developing organism, in man specifically the organism between two and eight weeks after conception.

*noun*, embryology  
Larousse Science

**embryonic rest**

remnants of embryonic tissue retained within a fully developed organism.

*noun*, embryology  
Heinemann Dental

**eminence**

any prominent or projecting part, especially one on a bone surface.

*noun*, anatomy  
Heinemann Dental

**emollient**

softening or soothing.

*adjective*, medicine  
Dorland Medical

**emulsion**

colloidal suspension of one liquid in another.

*noun*, chemistry  
Larousse Science

**emulsion polymerisation**

polymerisation technique in which the monomer, or mixture of monomers, is emulsified in a liquid, and subsequently polymerised.

*noun*, polymer science  
Szycher's Biomaterials

**enamel**

1. glazed surface of baked porcelain, metal, or pottery.

*noun*, material science  
Dorland Medical

2. vitreous calcific tissue covering the dentine of the tooth crown.

*noun*, dentistry  
Heinemann Dental

**enamel cell ameloblast**

one of the germ cells developed from the epithelium, from which the enamel organ is formed.

*noun*, embryology  
Heinemann Dental

**enamel matrix**

organic secretion of the ameloblasts within which the inorganic enamel crystallites are laid down.

*noun*, dentistry  
Heinemann Dental

**enamel prism**

one of the prismatic rods of which tooth enamel is made.

*noun*, dentistry  
Heinemann Dental

**enamel tufts**

bundles of poorly mineralised enamel rods extending into the tooth enamel from the amelodentinal junction.

*noun*, dentistry  
Heinemann Dental

**enamelling**

application of a vitreous glaze to ceramic or metal surfaces, followed by fusing in a kiln or furnace.

*noun*, material science  
McGraw-Hill Engineering

**enantiomers**

one of a pair of optical isomers containing one or more asymmetric carbon atoms, whose molecular configurations have left- and right-hand (chiral) forms.

*noun*, chemistry  
Szycher's Biomaterials

**encapsulation**

1. process of becoming enclosed or surrounded.

*noun*, general  
Longmans

2. containment of a drug within a device such that the drug can be subsequently released under desired conditions

*noun*, medical device technology

3. process by which an implanted material becomes surrounded by fibrous tissue.

*noun*, biomaterials science  
Williams

**encephalopathy**

any degenerative brain disease.

*noun*, medicine  
Dorland Medical

**encrustation**

1. process by which one material becomes overlaid by a hard substance.

*noun*, general  
Longmans

2. process by which a urinary catheter becomes covered with an irregular deposit from the urine.

*noun*, medical device technology  
Williams

**end-stage renal disease**

chronic irreversible failure of the kidney.

*noun*, medicine  
Dorland Medical

**endarteritis**

inflammation of the intima of an artery.

*noun*, medicine  
Larousse Science

**endarteritis obliterans**

obliteration of the lumen of an artery, as a result of inflammatory thickening of the intima.

*noun*, medicine  
Larousse Science

**endemic**

present in a community at all times.

*noun*, general  
Dorland Medical

**endo-**

signifying within.

*prefix*, general  
Heinemann Dental

**endocarditis**

exudative and proliferative inflammatory alterations of the endocardium.

*noun*, medicine  
Dorland Medical

**enchondral**

developing in cartilage.

*adjective*, medicine

Heinemann Dental

**endocrine glands**

any gland in an animal that manufactures hormones and secretes them directly into the bloodstream to act at distant sites in the body.  
*noun, anatomy*  
Dorland Medical

**endocrine system**

system of ductless glands and organs secreting substances directly into the blood to produce a specific response from another "target" organ or body part.  
*noun, anatomy*  
Biomedical Engineering Handbook

**endocytosis**

cellular ingestion of macromolecules by invagination of plasma membrane to produce an intracellular vesicle which encloses the ingested material.  
*noun, immunology*  
Roitt Immunology

**endodontic endosseous implant**

metal pin or rod inserted through the prepared root canal into the periapical bone to stabilise a mobile tooth.  
*noun, dentistry*  
Heinemann Dental

**endodontic implant**

metal pin or post extending through the root canal into the periapical bone to lengthen and strengthen a pulpless tooth.  
*noun, dentistry*  
Heinemann Dental

**endodontic paper point**

device made of paper intended for use during endodontic therapy to dry, or apply medication to, the root canal of a tooth.  
*noun, dentistry*  
CFR

**endodontics**

branch of dentistry concerned with the aetiology, prevention, diagnosis, and treatment of conditions that affect the tooth pulp, root, and periapical tissues.  
*noun, dentistry*  
Dorland Medical

**endogenous**

describing a substance, stimulus, organ, etc., that originates from within an organism.  
*noun, biology*  
Oxford Science

**endolymph**

fluid that fills the membranous labyrinth of the vertebrate inner ear.  
*noun, anatomy*  
Oxford Science

**endolymphatic shunt**

implantable medical device that consists of a tube or sheet to relieve the symptoms of vertigo, by permitting the unrestricted flow of excess endolymph from the distended end of the

endolymphatic system into the mastoid cavity where resorption occurs.  
*noun, medical device technology*  
CFR

**endometrium**

mucous membrane lining the uterus.  
*noun, anatomy*  
Dorland Medical

**endonuclease**

enzyme which cuts a polynucleotide chain internally.  
*noun, biology*  
Larousse Science

**endopeptidase**

any peptidase that catalyses the cleavage of internal bonds in a polypeptide or protein.  
*noun, biology*  
Dorland Medical

**endoplasmic reticulum ER**

system of membranes within the cytoplasm of plant and animal cells that forms a link between the cell and nuclear membranes and is the site of protein synthesis.  
*noun, biology*  
Oxford Science

**endoprosthesis**

any implantable device that is partially or totally retained within a specific structural component, usually with reference to a device that is placed within the medullary cavity of a bone.  
*noun, medical device technology*  
Williams

**endorphin**

any group of polypeptides formed in the brain tissue and pituitary gland, which are believed to control the transfer of signals at nerve junctions.  
*noun, biology*  
Szycher's Biomaterials

**endoscope**

device used to provide access, illumination, observation, and manipulation of body cavities, hollow organs, and canals.  
*noun, medical device technology*  
Szycher's Biomaterials

**endoscopy**

visual inspection of body cavities, by means of tubular illuminated optical instruments.  
*noun, medicine*  
Szycher's Biomaterials

**endosseous implant**

device intended to be surgically placed in the bone of the upper or lower jaw arches to provide support for prosthetic devices, such as artificial teeth, and to restore the patient's chewing function.  
*noun, dentistry*  
CFR

**endosteal**

occurring or located within a bone.  
*adjective, medicine*  
Dorland Medical

**endothelialisation** (endothelialization)

the process by which a surface of an implantable device becomes covered, either completely or partially, with a layer of endothelium.

*noun*, biomaterials science  
Williams

**endothelioma**

any tumour, particularly a benign one, arising from the endothelial lining of blood vessels.

*noun*, medicine  
Dorland Medical

**endothelium**

single layer of thin plate-like cells that line the inner surfaces of blood and lymph vessels and the heart.

*noun*, anatomy  
Oxford Science

**endothermic**

chemical reaction that absorbs thermal energy.

*adjective*, chemistry  
Larousse Science

**endotoxin**

pathogenic cell wall-associated lipopolysaccharides of Gram-negative bacteria, only released on lysis or death of the cells.

*noun*, immunology  
Roitt Immunology

**endotoxin shock**

syndrome following administration of endotoxin, or systemic infection with endotoxin, producing bacteria.

*noun*, immunology  
Larousse Science

**endurance limit** *fatigue limit*

in fatigue, the number of cycles which may be withstood without failure at a particular level of stress.

*noun*, engineering  
Larousse Science

**endurance ratio** *fatigue ratio*

the ratio of the fatigue limit or fatigue strength to the static tensile strength.

*noun*, engineering  
McGraw-Hill Engineering

**energy**

capacity of a body for doing work.

*noun*, physics  
Larousse Science

**energy dispersive analysis of X-rays** **EDAX**

method of elemental analysis of materials by scanning back-scattered X-rays from high-voltage electron bombardment, usually in a scanning electron microscope.

*noun*, chemistry  
Larousse Science

**energy-depositing device**

device intended to exert its therapeutic or diagnostic effect by the absorption of electromagnetic, ionic or ultrasonic radiation.

*noun*, medical device technology  
ISO

**enter(o)-**

of the intestines.

*prefix*, medicine  
Dorland Medical

**enteric**

pertaining to the small intestine.

*adjective*, medicine  
Dorland Medical

**enteritis**

inflammation of the intestine.

*noun*, medicine  
Dorland Medical

**enteroviruses**

family of viruses which include the poliomyelitis, coxsackie and echo groups of viruses.

*noun*, medicine  
Black's Medical

**enucleate**

to remove an organ or part, or a circumscribed, space-filling lesion entirely from its outer sheath or covering.

*verb*, medicine  
Heinemann Dental

**enucleation**

removal of any tumour or globular swelling so that it comes out whole.

*noun*, surgery  
Larousse Science

**enuresis**

unconscious or involuntary passage of urine.

*noun*, medicine  
Black's Medical

**environmental stress cracking** **ESC**

variety of phenomena and mechanisms in which the initiation and propagation of cracks in materials subject to stress is accelerated by environmental chemicals.

*noun*, material science  
Larousse Science

**enzymatic degradation**

degradation of materials enhanced and/or initiated by enzymes.

*noun*, material science  
ISO

**enzyme**

protein that catalyses chemical reactions of other substances without itself being destroyed or altered upon completion of the reactions.

*noun*, biology  
Dorland Medical

**enzyme histochemistry**

histological technique for characterising the functional state of a tissue section by using stains specific for cellular and extracellular enzymes

*noun*, biology  
Williams

**enzyme-linked immunosorbent assay** **ELISA**

assay for detection or quantitation of an antibody or antigen using a ligand conjugated to an enzyme which changes the colour of a substrate.

*noun*, immunology  
Roitt Immunology

**eosin**

$C_{20}H_6Br_4O_5K_2$ , the potassium salt of tetrabromofluorescein, an acidic dye that colours cytoplasm pink and cellulose red, used as a histological stain.  
*noun*, chemistry  
Larousse Science

**eosinophil**

any cell whose protoplasmic granules readily stain red with the dye eosin, particularly a granulocyte in the blood.  
*noun*, biology  
Larousse Science

**eosinophil leucocyte**

polymorphonuclear leucocyte with large eosinophil granules in the cytoplasm containing cationic proteins.  
*noun*, immunology  
Larousse Science

**eosinophilia**

abnormal increase in the number of eosinophils in the blood.  
*noun*, medicine  
Black's Medical

**epi-**

upon; over.  
*prefix*, general  
Dorland Medical

**epicardium**

serous membrane covering the heart.  
*noun*, anatomy  
Larousse Science

**epichlorhydrin**

1-chloro-2,3-epoxypropane.  $C_3H_5ClO$ , a liquid derivative of glycerol formed by reaction with hydrogen chloride to give dischlorhydrin, which in turn is treated with concentrated potassium hydroxide solution.  
*noun*, chemistry  
Larousse Science

**epicutaneous**

route of administration of a drug or device topically on the skin surface.  
*adjective*, pharmacology  
Szycher's Biomaterials

**epidemic**

disease which affects a large number of people in a particular locality at one time.  
*noun*, medicine  
Black's Medical

**epidemiology**

scientific discipline that studies the factors determining the causes, frequency, and distribution of diseases in a community or given population.  
*noun*, medicine  
IRB Guidebook

**epidermis**

outer layer of the skin, which forms the protective

covering of the body.  
*noun*, anatomy  
Black's Medical

**epilepsy**

any of a group of syndromes characterised by paroxysmal transient disturbances of brain function that may be manifested as episodic impairment or loss of consciousness.  
*noun*, medicine  
Dorland Medical

**epinephrine** *adrenaline*

secretion of the adrenal medulla.  
*noun*, medicine  
Black's Medical

**epineurium**

outermost layer of connective tissue of a peripheral nerve.  
*noun*, anatomy  
Dorland Medical

**epiphysis**

separate terminal ossification of some bones, which only becomes united with the main bone at the attainment of maturity.  
*noun*, anatomy  
Larousse Science

**episode**

noteworthy happening occurring in the course of a continuous series of events.  
*noun*, clinical practice  
Dorland Medical

**epitaxial**

having the same crystal axes, used to describe extensions grown or deposited onto a single crystal substrate, the material in the epitaxial layer having a lattice spacing and structure close to that of the substrate.  
*adjective*, material science  
Larousse Science

**epitaxy**

growth of a layer of one substance on a single crystal of another, such that the crystal structure in the layer is the same as that in the substrate.  
*noun*, material science  
Oxford Science

**epithelial cell**

one of the cells that make up the epithelium.  
*noun*, anatomy  
Heinemann Dental

**epithelial cell rests** *rests of Malassez*

remains of the epithelial root sheath (Hertwig's sheath) found in the periodontal ligament, and contributing to the formation of dental cysts.  
*noun*, dentistry  
Heinemann Dental

**epithelialisation** (epithelialization)

healing by the growth of epithelium over a denuded surface.  
*noun*, medicine  
Dorland Medical

**epithelioma**

any tumour derived from epithelium.

*noun*, medicine  
Dorland Medical

**epithelium**

tissue in vertebrates consisting of closely packed cells in a sheet with little intercellular material that forms a membrane over the outer surfaces of the body and walls of the internal cavities.

*noun*, anatomy  
Oxford Science

**epitope**

that part of an antigen recognised by an antigen receptor.

*noun*, immunology  
Roitt Immunology

**epoxide**

compound containing the oxirane structure, a three-membered ring with two carbons and one bridging oxygen atom.

*noun*, chemistry  
Szycher's Biomaterials

**epoxy**

prefix denoting an oxygen atom bridging two other atoms that are already united in some way.

*adjective*, chemistry  
Szycher's Biomaterials

**epoxy additive**

chemical added to epoxy resins or hardeners to modify the handling characteristics or cured properties, or both, of the epoxy-hardener combination.

*noun*, polymer science  
ASTM

**epoxy plastic**

thermoplastic or thermosetting plastics containing ether or hydroxyalkyl repeating units or both, resulting from the ring-opening reactions of lower molecular weight polyfunctional oxirane resins or compounds, with catalysts or with various polyfunctional acidic or basic coreactants.

*noun*, polymer science  
ASTM

**epoxy resin**

generally, any resin (liquid or solid) with a chemical structure at least difunctional in oxirane. Specifically, the diglycidyl ethers of bisphenol A or the equivalent.

*noun*, polymer science  
ASTM

**epoxy, one-component system**

formulation based on an epoxy resin pre-blended with a heat, moisture, or otherwise activated curing agent or catalyst, which cures under the appropriate activation conditions.

*noun*, polymer science  
ASTM

**epoxy, two-component system**

formulation based on an epoxy resin to which a curing agent or catalyst is added just prior to use.

*noun*, polymer science  
ASTM

**Epstein-Barr Virus EBV**

virus responsible for infectious mononucleosis and Burkitt's lymphoma.

*noun*, immunology  
Roitt Immunology

**equiaxed**

1. having axes of the same length.

*adjective*, general  
Dorland Medical

2. crystals in a polycrystalline material that appear to be of cuboid shape.

*noun*, material science  
Williams

**equilibrated**

state of any substance or material that has reached equilibrium with respect to a particular feature of its surroundings.

*adjective*, chemistry  
Williams

**equilibrium**

1. state reached in a reversible reaction when the reaction velocities in the two opposing directions are equal, so that the system has no further tendency to change.

*noun*, chemistry

2. state of a body at rest or moving with constant velocity.

*noun*, physics

3. thermal state of a system at which no further heat flow occurs and all components of the system are at the same temperature.

*noun*, physics  
Larousse Science

**equilibrium constant**

the ratio, at equilibrium, of the product of the active masses of the molecules on the right side of the equation representing a reversible reaction to that of the active masses of the molecules on the left side.

*noun*, chemistry  
Larousse Science

**equilibrium diagram *phase diagram***

graphical representation to show the stable states in which a system of chemical element(s) or molecular components can exist under particular physical conditions, usually of temperature and pressure, as a function of the concentration of component(s).

*noun*, chemistry  
Larousse Science

**equilibrium water content**

maximum amount of water that a hydrogel or polymer can contain.

*noun*, polymer science  
Williams

**erosion**

1. process of gradual wearing down of structures.

*noun*, general  
Black's Medical

2. wearing away of a tooth surface due to chemical or abrasive action.

*noun*, dentistry  
Heinemann Dental

**eruption**

1. act of appearing, or pushing through, as of teeth coming through the gums.

*noun*, dentistry

2. visible skin lesion, occurring in disease.

*noun*, medicine

Heinemann Dental

**erythema**

redness produced during inflammation due to erythrocytes entering tissue spaces.

*noun*, immunology

Roitt Immunology

**erythr(o)-**

red.

*prefix*, general

Dorland Medical

**erythrocyte** *red blood cell, red corpuscle*

one of the red blood corpuscles or cells with flattened circular disc-like cells, which carry oxygen in combination with the pigment haemoglobin.

*noun*, anatomy

Larousse Science

**erythrocyte fragility**

susceptibility of erythrocytes to haemolysis when exposed to increasingly hypotonic saline solutions (osmotic fragility) or when subjected to mechanical trauma.

*noun*, biology

Dorland Medical

**erythrocyte sedimentation rate** **ESR**

rate at which erythrocytes sediment from a well-mixed specimen of venous blood, as measured by the distance that the top of a column of erythrocytes falls in a specified time interval under specified conditions.

*noun*, medicine

CFR

**erythrocyte-ghost**

intact red cell membrane devoid of its normal contents, following haemolysis.

*noun*, biology

Williams

Notes: May be used as a very short term drug delivery vehicle.

**erythromycin**

broad-spectrum antibiotic produced by

*Streptomyces erythreus*.

*noun*, pharmacology

Dorland Medical

**erythropenia**

diminution, below normal, of the number of red cells in the blood.

*noun*, medicine

Larousse Science

**erythropoiesis**

erythrocyte production.

*noun*, biology

Roitt Immunology

**erythropoietin**

glycoprotein hormone secreted by the kidney in the adult and by the liver in the foetus, which acts on

stem cells of the bone marrow to stimulate red blood cell production.

*noun*, biology

Dorland Medical

**eschar**

slough of skin produced by a thermal burn, by a corrosive application or by gangrene.

*noun*, medicine

Dorland Medical

**Escherichia coli**

species of Gram negative bacteria constituting the greater part of the normal intestinal flora of man and other animals.

*noun*, medicine

Dorland Medical

**Essential Requirements**

series of specific requirements linked to a Directive of the European Union and which have to be fulfilled before a product can be given a CE mark.

*noun*, regulatory affairs

Williams

**established cell line**

cell line having and demonstrating the potential to be subcultured indefinitely *in vitro*.

*noun*, biology

ASTM

**ester**

derivative of acids obtained by the exchange of the replaceable hydrogen for alkyl radicals.

*noun*, chemistry

Larousse Science

**esterase**

enzyme which catalyses the hydrolysis of ester bonds.

*noun*, chemistry

Larousse Science

**esterify**

to combine with an alcohol with elimination of a molecule of water, forming an ester.

*verb*, chemistry

Dorland Medical

**etching**

1. process of removing films from the surface of materials to facilitate the subsequent deposition of another coating e.g. paint.

*noun*, engineering

2. method of showing the structure of metals and alloys by attacking a highly polished surface with a reagent that has a differential effect on different crystals or different constituents.

*noun*, metallurgy

Larousse Science

**ethanol**

ethyl alcohol.

*noun*, chemistry

Dorland Medical

**ethanoyl group** *acetyl group*

CH<sub>3</sub>CO—; the radical of acetic acid.

*noun*, chemistry

Larousse Science

**ether**

compound in which an oxygen atom is interposed between two carbon atoms in the molecular structure.

*noun*, chemistry  
Szycher's Biomaterials

**ethical committee**

committee established by a hospital or other clinical unit, which is comprised of professionals and lay persons and which reviews protocols for medical research that involve living patients or embryos and takes decisions on whether they should proceed.

*noun*, medicine  
Williams

**ethyl**

the monovalent radical, C<sub>2</sub>H<sub>5</sub>.

*noun*, chemistry  
Dorland Medical

**ethyl acetate**

colourless liquid made by reacting acetic acid and ethyl alcohol, in the presence of sulphuric acid followed by distillation.

*noun*, chemistry  
Szycher's Biomaterials

**ethyl alcohol**

alcohol used as surface disinfectant and solvent.

*noun*, chemistry  
Szycher's Biomaterials

**ethylene**

colourless flammable gas.

*noun*, chemistry  
Dorland Medical

**ethylene glycol**

solvent used as an antifreeze.

*noun*, chemistry  
Dorland Medical

**ethylene oxide EtO**

colourless gas, derived from the oxidation of ethylene in air or oxygen with silver catalyst, the most widely used sterilant gas in the medical devices industry.

*noun*, medical device technology  
Oxford Science

**ethylene oxide gas steriliser (ethylene oxide gas sterilizer)**

device that uses EtO to sterilise medical devices.

*noun*, medical device technology  
Szycher's Biomaterials

**ethylene vinyl acetate EVA**

copolymers comprising major amounts of ethylene with minor amounts of vinyl acetate, that exhibit many of the properties of polyethylene, but also display increased flexibility, elongation, and impact resistance.

*noun*, polymer science  
Szycher's Biomaterials

**ethylenediaminetetraacetic acid EDTA**

compound that acts as a chelating agent, reversibly binding with iron, magnesium, and other metal ions.

*noun*, chemistry

Oxford Science

**eugenol**

dental analgesic and antiseptic obtained from clove oil or other natural sources.

*noun*, dentistry  
Dorland Medical

Notes: It is applied topically to dental cavities and also used as a component of dental protectives.

**eukaryote**

organism whose cells have a true nucleus bounded by a nuclear membrane within which lie the chromosomes.

*noun*, biology  
Dorland Medical

**eukaryotic**

pertaining to a eukaryon or to a eukaryote.

*adjective*, biology  
Dorland Medical

**European Committee for Standardisation (European Committee for Standardization) CEN**

European organisation for the preparation and issue of standard specifications.

*noun*, regulatory affairs

**eutectic mixture**

solid solution consisting of two or more substances and having the lowest freezing point of any possible mixture of these components.

*noun*, material science  
Oxford Science

**eutectic structure**

the particular arrangement of the constituents in a eutectic mixture which arises from their simultaneous crystallisation from the melt.

*noun*, material science  
Larousse Science

**ex vivo**

1. denoting outside the living body.

*adjective*, medicine

2. denoting removal of an organ (e.g., the kidney) for reparative surgery, after which it is returned to the original site.

*adjective*, surgery  
Dorland Medical

**ex-**

away from; out of.

*prefix*, general  
Dorland Medical

**excavation**

1. hollow or cavity.

*noun*, general

2. cavity prepared in a tooth, in which is placed a filling or inlay.

*noun*, dentistry  
Heinemann Dental

**excavator**

any instrument used for hollowing or scooping out.

*noun*, dentistry  
Heinemann Dental

**excimer laser**

laser which utilises the electromagnetic radiation emitted from a transient association of two similar atoms in an excited state.  
*noun*, engineering  
Williams

**excipient**

inert, non-active substance added to a drug preparation in order to make the remedy as prescribed more suitable in bulk, consistency, or form for administration.  
*noun*, pharmacology  
Black's Medical

**excise**

to remove by cutting.  
*verb*, surgery  
Dorland Medical

**excision**

the surgical removal of a part.  
*noun*, surgery  
Larousse Science

**excitation**

the change of a membrane from resting to excited states, characterised by the movement of the transmembrane potential across a threshold.  
*noun*, biology  
Biomedical Engineering Handbook

**excretion**

elimination by an organism of the waste products that arise as a result of metabolic activity.  
*noun*, biology  
Oxford Science

**exfoliation**

falling off in scales or layers.  
*noun*, biology  
Dorland Medical

**exhalation** *expiration*

breathing process whereby air is expelled from the mouth and nose.  
*noun*, biology  
Biomedical Engineering Handbook

**exhaustive extraction**

following ethylene oxide sterilisation the process of extraction until the amount of ethylene oxide or epichlorhydrin in a subsequent extraction is less than 10% of that detected in the first extraction, or until there is no analytically significant increase in the cumulative residue levels detected.  
*noun*, medical device technology  
ISO

**exo-**

outside; outward.  
*prefix*, general  
Dorland Medical

**exocrine gland**

any one of the glands, including salivary glands, which secrete through ducts which open on a body surface.  
*noun*, anatomy  
Heinemann Dental

**exocytosis**

discharge from a cell of particles that are too large to diffuse through the wall.  
*noun*, biology  
Dorland Medical

**exodontia**

tooth extraction.  
*noun*, dentistry  
Heinemann Dental

**exogenous**

originating outside or caused by factors outside the organism.  
*adjective*, biology  
Dorland Medical

**exonuclease**

enzyme that catalyses the release of one nucleotide at a time, serially, from one end of a polynucleotide.  
*noun*, biology  
Biomedical Engineering Handbook

**exopeptidase**

protein-digesting enzyme that cleaves amino acids from the ends of a polypeptide chain.  
*noun*, biology  
Oxford Science

**exophthalmos**

forward displacement of the eyeball.  
*noun*, ophthalmology  
Black's Medical

**exoskeleton**

rigid external covering for the body in certain animals, such as the hard chitinous cuticle of arthropods.  
*noun*, biology  
Oxford Science

**exostosis**

bony tumour growing outwards from a bone.  
*noun*, medicine  
Larousse Science

**exotherm**

liberated heat or energy.  
*noun*, chemistry  
Dorland Medical

**exothermic**

chemical reaction which evolves thermal energy.  
*adjective*, chemistry  
Larousse Science

**exothermic temperature** *maximum temperature*  
maximum temperature of a polymer mixture due to self-curing in a standard mould.  
*noun*, polymer science  
ASTM

**exotoxin**

toxin released by a bacterium into the medium in which it grows.  
*noun*, chemistry  
Larousse Science

**expanded availability**

policy and procedure that permits individuals who have serious or life-threatening diseases for which

there are no alternative therapies to have access to investigational drugs and devices that may be beneficial to them.

*noun*, medicine  
IRB Guidebook

Notes: Examples of expanded availability mechanisms include Treatment INDs, Parallel Track, and open study protocols.

**expanded polytetrafluoroethylene e-PTFE**

form of PTFE which exists with a microporous structure.

*noun*, material science  
Williams

Notes: Extensively used under the trade name of Gore-Tex for vascular prostheses and other implantable devices.

**expected life**

time that a device is expected to remain functional after it is placed into use.

*noun*, regulatory affairs  
CFR

**expedited review**

review of proposed research by the Institutional Review Board chair or a designated voting member or group of voting members rather than by the entire IRB.

*noun*, regulatory affairs  
IRB Guidebook

Notes: U.S. federal rules permit expedited review for certain kinds of research involving no more than minimal risk and for minor changes in approved research.

**experimental**

term often used to denote a therapy (drug, device, procedure) that is unproven or not yet scientifically validated with respect to safety and efficacy.

*adjective*, clinical practice  
IRB Guidebook

Notes: A procedure may be considered "experimental" without necessarily being part of a formal study (research) to evaluate its usefulness.

**experimental animal**

animal used or to be used in experiments.

*noun*, biomaterials science  
ISO

**experimental study**

study in which subjects are randomly assigned to groups that experience carefully controlled interventions manipulated by the experimenter according to a strict logic allowing causal inference about the effects of the interventions under investigation.

*noun*, clinical practice  
IRB Guidebook

**expiration** *exhalation*

breathing process whereby air is expelled from the mouth and nose.

*noun*, biology  
Biomedical Engineering Handbook

**explant**

1. excised fragment of a tissue or organ used to initiate a culture.

*noun*, biology  
ASTM

2. device that has been removed from a patient.

*noun*, medical device technology

3. to remove an implanted medical device from a

patient.

*verb*, medical device technology  
Williams

**exponential growth**

stage of growth occurring in populations of unicellular micro-organisms when the logarithm of the cell number increases linearly with time.

*noun*, biology  
Larousse Science

**exsanguination**

extensive loss of blood due to internal or external haemorrhage.

*noun*, medicine  
Dorland Medical

**extender**

inert substance added to a product (paint, rubber, washing powder, etc.) to dilute it (for economy) or to modify its physical properties.

*noun*, material science  
Oxford Science

**extensibility**

fundamental ability of a material to extend or elongate upon application of sufficient force.

*noun*, material science  
Szycher's Biomaterials

**extensometer**

instrument for measuring dimensional changes of a material especially during a mechanical test.

*noun*, material science  
Larousse Science

**extensor**

any muscle that causes a limb to extend.

*adjective*, anatomy  
Oxford Science

**external communicating device**

any medical device that is placed within the human body but has a component that is external to the body or is connected to an external component.

*noun*, medical device technology  
Williams

**extracellular**

located or occurring outside the cell.

*adjective*, biology  
Oxford Science

**extracellular fluid**

any of the body fluids outside the cells and membranes.

*noun*, biology  
Heinemann Dental

**extracellular matrix**

non-cellular matrix of proteins and glycoproteins surrounding cells in some tissues.

*noun*, biology  
Larousse Science

**extracorporeal circulation**

artificial maintenance of blood circulation by means of pumps located outside of the body, with blood fed through catheters advanced in an appropriate blood vessel and returning the blood to

another blood vessel.  
*noun*, medical device technology  
Biomedical Engineering Handbook

**extract**

1. concentrated preparation of a vegetable or animal drug.  
*noun*, biology  
Dorland Medical

2. solution prepared by exposing a test substance to a reagent for a specified period of time, during which impurities, contaminants or other components are leached out.  
*noun*, biomaterials science  
Williams

**extract liquid**

that liquid derived from an extraction test which is tested for biological and chemical/physical response; the end result of this practice.  
*noun*,  
ASTM

**extraction**

1. process of pulling out or removing, particularly the teeth.  
*noun*, general  
Heinemann Dental

2. process for dissolving certain constituents of a mixture by means of a liquid with solvent properties for one of the components only.  
*noun*, chemistry  
Larousse Science

**extraction medium**

liquid which does not dissolve a material or device, but does induce the release of one or more extractable components.  
*noun*, biomaterials science  
ISO

**extraction vehicle**

liquid for use in the extraction of leachables from a device.  
*noun*, biomaterials science  
ISO

**extravasate**

abnormal escaping of fluids, such as blood or lymph, from the vessels which contain them.  
*noun*, medicine  
Larousse Science

**extravascular**

placed or happening outside a blood vessel.  
*adjective*, medicine  
Larousse Science

**extrinsic**

of external origin.  
*adjective*, general  
Dorland Medical

**extrinsic pathway**

part of the coagulation cascade that is initiated by damage to the vascular system and the subsequent reaction between tissue factor and Factor VII  
*noun*, biology  
Williams

**extruder**

machine for producing continuous lengths of material sections such as tubing, sheets, rods or profiles.

*noun*, engineering  
Szycher's Biomaterials

**extrusion**

process in which a hot or cold semi-soft solid material, such as metal or plastic, is forced through the orifice of a die to produce a continuously formed piece in the shape of the desired product.  
*noun*, engineering  
McGraw-Hill Engineering

**exudate**

extravascular fluid (containing proteins and cellular debris) which accumulates during inflammation.  
*noun*, immunology  
Roitt Immunology

**eye**

organ of vision.  
*noun*, ophthalmology  
Dorland Medical

**eye valve implant**

a one-way, pressure-sensitive, valve-like device intended to be implanted to normalise intraocular pressure, used in the treatment of glaucoma.  
*noun*, medical device technology  
CFR

**f510(k) device**

a medical device that is considered substantially equivalent to a device that was or is being legally marketed.  
*noun*, regulatory affairs  
IRB Guidebook

Notes: A sponsor planning to market such a device must submit notification to the FDA 90 days in advance of placing the device on the market. If the FDA concurs with the sponsor, the device may then be marketed. 510(k) is the section of the Food, Drug and Cosmetic Act that describes premarket notification; hence the designation "510(k) device."

**f510(k) provision premarket notification**

pre-marketing submission made to the FDA to demonstrate that the device to be marketed is as safe and effective, that is, substantially equivalent (SE) to a legally marketed device that is not subject to premarket approval (PMA).

*noun*, regulatory affairs  
CFR

Notes: CHECK REFERENCE

**Fab antigen-binding fragment**

monovalent antigen-binding fragment obtained following papain digestion of immunoglobulin, consisting of an intact light chain and the N-terminal V<sub>H</sub> subscript) and C<sub>H</sub> subscript)1 domains of the heavy chain.

*noun*, immunology  
Roitt Immunology

**fabric**

coherent assembly of fibres and/or yarns that is long and wide but relatively thin and strong.  
*noun*, material science  
Larousse Science

**face centred cubic** (face centered cubic)

crystal lattice with a cubic unit cell, the centre of each face of which is identical in environment and orientation to its vertices.  
*noun*, chemistry  
Larousse Science

**facebow**

instrument used for determining the relationship of the teeth to the axis of movement of the mandible.  
*noun*, dentistry  
Heinemann Dental

**facial cleft**

developmental anomaly caused by the failure of any of the facial processes to unite.  
*noun*, medicine  
Heinemann Dental

**Factor I**

fibrinogen, a factor in the clotting cascade which is converted to fibrin by the action of thrombin.  
*noun*, medicine  
Dorland Medical

**Factor II** *prothrombin*

prothrombin, a factor in the clotting cascade which it is converted to thrombin.  
*noun*, medicine  
Dorland Medical

**Factor III**

tissue thromboplastin, a factor in the clotting cascade.  
*noun*, medicine  
Dorland Medical

**Factor IV**

calcium, in the context of the clotting cascade.  
*noun*, medicine  
Dorland Medical

**Factor IX** *Christmas factor*

plasma thromboplastin component of the clotting cascade.  
*noun*, medicine  
Dorland Medical

**Factor V**

proaccelerin, a factor in the clotting cascade.  
*noun*, medicine  
Dorland Medical

**Factor VII**

proconvertin, a factor in the clotting cascade.  
*noun*, medicine  
Dorland Medical

**Factor VIII** *antihaemophilic factor*

a factor in the intrinsic pathway of coagulation.  
*noun*, medicine  
Dorland Medical

**Factor X**

factor of both intrinsic and extrinsic clotting pathway.  
*noun*, medicine  
Dorland Medical

**Factor XI**

plasma thromboplastin antecedent, a factor in the

intrinsic clotting pathway.  
*noun*, medicine  
Dorland Medical

**Factor XII** *Hageman factor*

a factor which initiates the intrinsic process of blood clotting *in vitro*.  
*noun*, medicine  
Dorland Medical

**Factor XIII**

fibrin stabilising factor, which may polymerise fibrin monomers.  
*noun*, medicine  
Dorland Medical

**facultative**

1. not obligatory.  
*adjective*, general  
Dorland Medical  
2. in relation to bacteria, pertaining to the ability to adjust to particular circumstances or to assume a particular role.  
*adjective*, medicine  
Larousse Science

**faecal incontinence** (fecal incontinence)

involuntary passage of faeces and flatus.  
*noun*, medicine  
Dorland Medical

**faeces**

the indigestible residues remaining in the alimentary canal after digestion and absorption of food.  
*noun*, biology  
Larousse Science

**fail**

to fall short of expectations.  
*verb*, general  
Williams

**failure**

1. inability to perform or to function properly.  
*noun*, general  
Dorland Medical  
2. a process or procedure which does not meet expectations.  
*noun*, general  
Williams

**failure analysis**

the objective assessment of the causes of a structural failure of a product or component.  
*noun*, engineering  
Williams

**failure modes and effects analysis FMEA.**

the design activity for process and product which aims to eliminate defects before production or launch of product in market place.  
*noun*, engineering  
Larousse Science

**fallopian tube prosthesis**

a device designed to maintain the patency of the fallopian tube.  
*noun*, medical device technology  
Szycher's Medical Devices

**false negative**

when a test wrongly shows an effect or condition to be absent.

*noun*, general  
IRB Guidebook

**false positive**

when a test wrongly shows an effect or condition to be present.

*noun*, general  
IRB Guidebook

**faraday F.**

the electric charge carried by one mole of electrons or one equivalent of ions, equal to  $9.649 \times 10^4$  (SUPERSRIPT) coulombs.

*noun*, physics  
Dorland Medical

**fascia**

sheet or band of fibrous tissue such as lies deep to the skin or invests muscles and various body organs.

*noun*, anatomy  
Dorland Medical

**fat**

1. adipose tissue, forming soft pads between organs.

*noun*, anatomy

2. ester of glycerol with fatty acids, usually oleic, palmitic, or stearic acid.

*noun*, chemistry  
Dorland Medical

**fat embolus**

embolus composed of oil or fat.

*noun*, medicine  
Dorland Medical

**fate**

1. destiny

*noun*, general  
Larousse Science

2. the pattern of distribution of a substance in the environment, or in organisms, and its changes with time (in concentration, chemical form, etc.).

*noun*, biology  
OED

**fatigue**

1. a state of increased discomfort and decreased efficiency due to prolonged or excessive exertion.

*noun*, medicine  
Dorland Medical

2. a phenomenon which results in the fracture of a component after a period of cyclic loading in the elastic regime.

*noun*, engineering  
Larousse Science

**fatigue failure**

the fracture or rupture of an article caused by the propagation of a crack under cyclic stresses, the maximum value of which is less than the static breaking strength.

*noun*, engineering  
Williams

**fatigue life**

the number of applied repeated stress cycles a material can endure before failure.

*noun*, engineering  
McGraw-Hill Engineering

**fatigue limit** *endurance limit*

the maximum stress that a material can endure for an infinite number of cycles without fracture.

*noun*, engineering  
McGraw-Hill Engineering

**fatigue ratio** *endurance ratio*

the ratio of the fatigue limit or fatigue strength to the static tensile strength.

*noun*, engineering  
McGraw-Hill Engineering

**fatigue striation**

a characteristic observation on the fractured surface of a metal that has failed in fatigue in which a series of closely spaced lines indicate the progression of crack propagation.

*noun*, engineering  
Williams

**fatigue test**

test made on a material to determine the range of alternating stress to which it may be subjected without risk of ultimate failure.

*noun*, engineering  
Larousse Science

Notes: A fatigue test normally consists of a series of tests on individual, identical samples, each test covering a specified stress amplitude (S) for which the number of cycles (N) necessary to cause fracture is determined, with the resulting compilation of an S-N curve.

**fatty acid**

an organic compound consisting of a hydrocarbon chain and a terminal carboxyl group.

*noun*, chemistry  
Oxford Science

**Fc**

crystallisable, non-antigen binding fragment of an immunoglobulin molecule obtained following papain digestion which consists of the C-terminal portion of both heavy chains that is responsible for binding Fc receptors and C1q.

*noun*, immunology  
Roitt Immunology

**Fc receptor**

cell surface receptors which bind the Fc portion of particular immunoglobulin classes.

*noun*, immunology  
Roitt Immunology

**feed through**

that part of an implantable electronic device at which the electrode lead emerges from the device through a sealed port.

*noun*, medical device technology  
Williams

**feldspar**

one of a group of rock-forming silicates of aluminium, together with sodium, potassium, calcium, or (rarely) barium, crystallising in closely similar forms in the monoclinic and triclinic systems.

*noun*, material science  
Larousse Science  
Notes: Used, for example, in the preparation of dental porcelain.

**femoral**  
of or relating to the thigh or the femur.  
*adjective*, anatomy  
Oxford Science

**femoral artery**  
the continuation of the external iliac artery, supplying the lower abdominal wall, external genitalia, and lower limbs.  
*noun*, anatomy  
Dorland Medical

**femoral condyle**  
one of the two distal semi-circular structures of the femur which articulate with the tibial plateau in the knee.  
*noun*, anatomy  
Williams

**femoral stem**  
that part of the femoral component of a hip replacement prosthesis that is contained within the medullary cavity of the femur  
*noun*, medical device technology  
Williams

**femto- f.**  
denoting a thousand million millionth (10<sup>SUPERSCRIPT -15</sup>). Symbol f.  
*prefix*, general  
Larousse Science

**femur**  
the thigh bone.  
*noun*, anatomy  
Dorland Medical

**fenestra**  
1. window-like opening.  
*noun*, medicine  
Dorland Medical  
2. either of the two delicate membranes between the middle ear and the inner ear.  
*noun*, anatomy  
Oxford Science

**fenestrated**  
said of any device that has macroscopically visible holes which provide a function, such as the encouragement of tissue ingrowth.  
*adjective*, medical device technology  
Williams

**fenestration**  
the surgical creation of a new opening in the labyrinth of the ear for restoration of hearing in otosclerosis.  
*noun*, surgery  
Dorland Medical

**fermentation**  
the biochemical pathway whereby organic compounds, especially carbohydrates, are broken down enzymatically in the absence of oxygen.  
*noun*, biology  
Larousse Science

**ferrite**  
1. the body-centred cubic form of iron and of solid solutions based on it.  
*noun*, chemistry  
2. ceramic iron oxide compound having ferrimagnetic properties.  
*noun*, metallurgy  
Larousse Science

**ferritin**  
the iron-apoferritin complex, which is one of the chief forms in which iron is stored in the body.  
*noun*, biology  
Dorland Medical

**fibre (fiber)**  
1. any type of vegetable, animal, regenerated, synthetic or mineral filament which is long in relation to its thickness and is fine and flexible.  
*noun*, metallurgy  
Larousse Science

(fiber)  
2. a bundled group of collagen fibrils.  
*noun*, material science  
Biomedical Engineering Handbook

**fibre optics (fiber optics)**  
the system for the transmission of an image along flexible bundles of glass or plastic fibres, each of which carries an element of the image.  
*noun*, engineering  
Dorland Medical

**fibril**  
1. any minute thread-like structure, such as the longitudinal contractile elements of a muscle fibre.  
*noun*, anatomy  
2. bundle of aligned, crystalline polymer chains, as in cellulose.  
*noun*, polymer science  
Larousse Science

**fibrillation**  
1. the initial degenerative changes in osteoarthritis, marked by softening of the articular cartilage and development of vertical clefts between groups of cartilage cells.  
*noun*, medicine  
2. a small, local, involuntary, muscular contraction, due to spontaneous activation of single muscle cells or muscle fibres whose nerve supply has been damaged or cut off.  
*noun*, medicine  
Dorland Medical  
3. inco-ordinate contraction of individual muscle fibres of the heart, giving rise to an irregular and inefficient action of the heart.  
*noun*, medicine  
Larousse Science

**fibrin**  
an insoluble protein that is essential to clotting of blood, formed from fibrinogen by action of thrombin.  
*noun*, medicine  
Dorland Medical

**fibrin glue**  
preparation used as either an adhesive, sealant or

haemostat that is typically prepared by mixing a solution containing fibrinogen with one that contains thrombin, the result of which is the generation of a white fibrin clot which adheres to the surrounding connective tissue  
*noun*, medical device technology  
Williams

**fibrinogen**

the protein dissolved in the blood plasma that, when suitably activated, is converted to insoluble fibrin.  
*noun*, biology  
Oxford Science

**fibrinolysis**

breakdown of the protein fibrin by the enzyme plasmin which occurs when blood clots are removed from the circulation.  
*noun*, biology  
Oxford Science

**fibrinopeptide**

either of two peptides (A and B) split off from fibrinogen during coagulation by the action of thrombin.  
*noun*, biology  
Dorland Medical

**fibroblast**

a long, flat, immature, fibre-producing cell of connective tissue capable of differentiating into chondroblast, collagenoblast, or osteoblast.  
*noun*, anatomy  
Dorland Medical

**fibrocartilage**

form of cartilage which has white or yellow fibres embedded in the matrix.  
*noun*, anatomy  
Larousse Science

**fibrocyte**

fibroblast.  
*noun*, anatomy  
Dorland Medical

**fibromyalgia**

term used to describe symptoms of pain in muscular and associated connective tissue.  
*noun*, material science  
Dorland Medical

**fibromyositis**

inflammation of fibrous tissue in muscle and in the muscle fibres adjacent to it.  
*noun*, medicine  
Larousse Science

**fibronectin**

an adhesive glycoprotein.  
*noun*, biology  
Dorland Medical  
Notes: One form circulates in plasma, acting as an opsonin; another is a cell-surface protein which mediates cellular adhesive interactions.

**fibroplasia**

the formation of fibrous tissue.  
*noun*, medicine  
Dorland Medical

**fibrosarcoma**

a malignant, locally invasive, haematogenously spreading tumour derived from collagen-producing fibroblasts that are otherwise undifferentiated.  
*noun*, medicine  
Dorland Medical

**fibrosis**

formation of a zone of fibrous tissue, around an implanted device.  
*noun*, biomaterials science  
Larousse Science  
Notes: This is a normal feature of the host response and is seen, to varying extents, with virtually all biomaterials after implantation.  
formation of fibrous tissue.  
*noun*, medicine  
Dorland Medical

**fibrositis**

inflammatory hyperplasia of the white fibrous tissue, especially of the muscle sheaths and fascial layers of the locomotor system.  
*noun*, medicine  
Dorland Medical

**fibrotic**

pertaining to fibrosis, characterised by fibrous tissue.  
*adjective*, medicine  
Larousse Science

**fibrous ankylosis**

stiffness due to fibrous adhesions or fibrosis of the joints.  
*noun*, medicine  
Heinemann Dental

**fibrous capsule**

zone of connective tissue that forms around an implanted medical device as part of the host response to the material.  
*noun*, biomaterials science  
Williams

**fibrous tissue**

form of connective-tissue consisting mainly of bundles of white fibres.  
*noun*, anatomy  
Larousse Science

**fibrovascular bundle**

vascular bundle accompanied, usually on its outer side, by a strand of sclerenchyma.  
*noun*, anatomy  
Larousse Science

**fibula**

the posterior of the two bones in the middle division of the hind limb.  
*noun*, anatomy  
Larousse Science

**Fickian diffusion**

diffusion process in which the rate of diffusion of a substance through a material is proportional to the concentration gradient of that substance.  
*noun*, physics  
Williams

**filament**

1. delicate fibre or thread.  
*noun*, general  
Dorland Medical

2. chain of cells joined end on end.  
*noun*, biology  
Larousse Science

**filament winding**

process for fabricating a composite structure in which continuous fibre reinforcement (glass, boron, silicon carbide), either previously impregnated with a matrix material or impregnated during winding, are wound under tension over a rotating core.  
*noun*, engineering  
McGraw-Hill Engineering

**filiform**

threadlike.  
*adjective*, biology  
Dorland Medical

**filler**

finely divided, solid material that is intimately blended with polymers during mixing and compounding to achieve specific properties or reduce costs.  
*noun*, polymer science  
ASTM

**fillet weld**

weld at the junction of two parts at right angles to each other, in which a fillet of welding metal is laid down in the angle created by the intersection of the surfaces of the parts.  
*noun*, engineering  
Larousse Science

**filling restoration**

material inserted in a prepared tooth cavity.  
*noun*, dentistry  
Dorland Medical

**film**

in plastics, term for sheeting having a nominal thickness not greater than 0.25 mm (0.01 in).  
*noun*, polymer science  
ASTM

**film blowing**

process of forming thermoplastic film, wherein a vertically extruded plastic tube is continuously inflated by internal air pressure, cooled, collapsed by rolls, and wound up on rolls.  
*noun*, engineering  
Szycher's Biomaterials

**film casting**

process of making unsupported film by casting a fluid resin or solution on a temporary carrier, followed by solidification, and removal of the solidified film from the carrier.  
*noun*, engineering  
Szycher's Biomaterials

**filtration**

1. separation of solids from liquids by passing the mixture through a suitable medium, which retains the solid matter on its surface and allows the liquid to pass through.

*noun*, chemistry

2. removal of longer wavelengths in a composite beam of X-rays by the interposition of thin metal, e.g. copper or aluminium.  
*noun*, physics  
Larousse Science

**final product**

medical device in its "as used" state.  
*noun*, regulatory affairs  
ISO

**finger**

one of the five digits of the hand.  
*noun*, anatomy  
Dorland Medical

**finished device**

any device or accessory to any device that is suitable for use or capable of functioning, whether or not it is packaged, labelled or sterilised.  
*noun*, regulatory affairs  
CFR

**finishing bur**

bur having a more finely cut head, used in finishing and burnishing restorations.  
*noun*, dentistry  
Heinemann Dental

**finite element method FEM.**

generic method of analysis of continuous physical systems in which a system is broken down into discrete elements interconnected at discrete node points.  
*noun*, engineering  
Williams  
Notes: Used in particular for stress analysis in complex systems such as those found in implantable devices within the musculoskeletal system.

**fissure**

1. cleft or groove, normal or otherwise, especially a deep fold in the cerebral cortex involving its entire thickness.  
*noun*, anatomy

2. fault in the enamel surface of a tooth.  
*noun*, dentistry  
Dorland Medical

**fissure bur**

cylindrical dental bur used for preparing a cavity involving the occlusal fissures of a premolar or molar tooth.  
*noun*, dentistry  
Heinemann Dental

**fissure sealant**

impermeable material, usually a form of resin, used for sealing pits or fissures in the surface of posterior teeth to prevent the onset of occlusal caries.  
*noun*, dentistry  
Heinemann Dental

**fissure sealing**

the filling up of developmental pits and fissures in posterior teeth to prevent the onset of occlusal caries.  
*noun*, dentistry  
Heinemann Dental

**fistula**

abnormal passage of communication, usually between two internal organs, or leading from an internal organ to the body surface.

*noun*, medicine

Dorland Medical

**fixation**

1. the process of holding, suturing or fastening in a fixed position.

*noun*, medicine

Dorland Medical

2. the first stage in the preparation of a biological specimen for microscopical examination, in which the tissue is killed and preserved in as natural a state as possible by immersion in a chemical fixative.

*noun*, biology

Oxford Science

**fixation site**

an area on the surface of the implant which has features that allow tissue growth.

*noun*, medical device technology

ASTM

**fixed appliance**

orthodontic regulating appliance which is attached to the supporting teeth so that it cannot be removed by the wearer.

*noun*, dentistry

Heinemann Dental

**fixed bridge**

dental bridge which is fixed in place permanently to its abutments.

*noun*, dentistry

Heinemann Dental

**fixed prosthesis**

non-removable dental prosthesis firmly attached to implants, root or abutment teeth.

*noun*, dentistry

Heinemann Dental

**flame splaying**

method of applying a coating of one material onto a surface of another in which finely powdered fragments of the material together with suitable fluxes, are projected through a cone of flame.

*noun*, engineering

McGraw-Hill Engineering

**flash**

1. excess plastic material forced out of a mould during moulding.

*noun*, engineering

2. thin fin of metal formed at the sides of a forging where some of the metal is forced between the faces of the forging dies.

*noun*, engineering

Larousse Science

**flasking**

the process of packing a denture into a flask prior to curing.

*noun*, dentistry

Heinemann Dental

**flaw**

blemish, imperfection, defect or fault.

*noun*, general

Longmans

**flexor**

muscle that causes a limb to bend by bringing the two parts of the limb together.

*noun*, anatomy

Oxford Science

**flexural modulus**

measure of the resistance of a beam to bending, equal to the product of Young's modulus for the material and the square of the radius of gyration of the beam about its neutral axis.

*noun*, engineering

McGraw-Hill Engineering

**flexural rigidity**

measure of the resistance of a beam to bending.

*noun*, engineering

Larousse Science

**flexural strength**

strength of a material in bending.

*noun*, engineering

McGraw-Hill Engineering

**flexure**

deformation of any beam subjected to a load.

*noun*, engineering

McGraw-Hill Engineering

**floor**

inferior inner surface of a hollow organ or other space.

*noun*, anatomy

Dorland Medical

**flow cytometry**

technique for counting cells suspended in fluid as they flow one at a time past a focus of exciting light.

*noun*, biology

Dorland Medical

**flow visualisation**

experimental technique for determining patterns of fluid flow within structures, for example the flow of blood through arteries, by making replicas of those structures and visualising flow patterns by video cameras or other means.

*noun*, bioengineering

Williams

**fluconazole**

antifungal agent used in the systemic treatment of candidiasis and cryptococcal meningitis.

*noun*, pharmacology

Dorland Medical

**fluid compartment**

the portion of the central nervous system (CNS) including the ventricles and subdural space, and extraventricular structures such as cysts.

*noun*, anatomy

ASTM

**fluid mechanics**

the study of fluids at rest and in motion.

*noun*, engineering

Oxford Science

**fluorapatite**

the commonest form of apatite in which there are fluorine atoms.

*noun*, material science  
Larousse Science

**fluorescein**

a fluorescing dye, C<sub>20</sub>H<sub>12</sub>O<sub>5</sub>, the sodium salt of which is used in solution to reveal corneal lesions and as a test of circulation in the retina.

*noun*, ophthalmology  
Dorland Medical

**fluorescein isothiocyanate FITC.**

green fluorescent dye used to tag antibodies for use in immunofluorescence.

*noun*, immunology  
Roitt Immunology

**fluorescence**

emission of radiation, generally light, from a material during illumination by radiation of usually higher frequency, or from the impact of electrons.

*noun*, physics  
Larousse Science

**fluorescence activated cell sorter FACS.**

instrument in which cells or chromosomes in a suitable medium have their fluorescence measured as they pass down a fine tube.

*noun*, biology  
Larousse Science

**fluorescence microscopy**

light microscopy in which the specimen is irradiated at wavelengths which will excite the natural or artificially introduced fluorochromes.

*noun*, biology  
Larousse Science

**fluorescent antibody**

antibody conjugated to a fluorescent dye such as FITC.

*noun*, immunology  
Roitt Immunology

**fluoridation**

the addition of inorganic fluorides (usually sodium fluoride) to water supplies with the intention of preventing dental caries.

*noun*, dentistry  
Larousse Science

**fluoride**

compound of fluorine with another element.

*noun*, dentistry  
Heinemann Dental

**fluoridisation (fluoridization)**

use of any fluoride, in any form, for the prevention of dental caries.

*noun*, dentistry  
Heinemann Dental

**fluorinated ethylene propylene FEP.**

copolymer of tetrafluoroethylene and

hexafluoropropylene, displaying most of the characteristics of PTFE, but being a thermoplastic.

*noun*, polymer science  
Szycher's Biomaterials

**fluorination**

chemical reaction in which a fluorine atom is introduced into a molecule.

*noun*, chemistry  
Oxford Science

**fluorine F.**

element, symbol F, at. no. 9, the lightest halogen and the most electronegative (non-metallic) element.

*noun*, chemistry  
Larousse Science

**fluoroapatite**

compound formed when a fluoride reacts with the enamel of a tooth.

*noun*, dentistry  
Heinemann Dental

**fluorocarbon plastic**

plastic based on polymers made with monomers composed of fluorine and carbon only.

*noun*, polymer science  
ASTM

**fluorocarbon polymer**

polymer made with monomers composed of fluorine and carbon only.

*noun*, polymer science  
Williams

**fluorocarbons**

hydrocarbons in which some or all of the hydrogen atoms have been replaced by fluorine.

*noun*, chemistry  
Larousse Science

**fluorochrome**

fluorescent compound used as a dye to mark protein with a fluorescent label.

*noun*, biology  
Dorland Medical

**fluorohydrocarbon plastic**

plastic based on polymers made with monomers composed of fluorine, hydrogen and carbon only.

*noun*, polymer science  
ASTM

**fluoroplastic**

plastic based on polymers made with monomers containing one or more atoms of fluorine or copolymers of such monomers with other monomers, the fluorine-containing monomer(s) being in greatest amount by mass.

*noun*, polymer science  
ASTM

**fluoropolymer**

organic polymer containing fluorine atoms and hence showing some degree of heat and solvent resistance.

*noun*, polymer science  
Larousse Science

**fluoroscope**

instrument for visual observation of the form and motion of the deep structures of the body by means of X-ray shadows projected on a fluorescent screen.  
*noun, medicine*  
Dorland Medical

**fluorouracil**

antimetabolite activated like uracil, used as an antineoplastic agent.  
*noun, pharmacology*  
Dorland Medical

**flux**

1. material used in the processing of ceramic and vitreous substances to aid in melting.  
*noun, material science*  
2. material used in soldering to prevent oxidation and aid the flow of the solder.  
*noun, metallurgy*  
Heinemann Dental

**foam**

1. dispersion or bubble in a liquid.  
*noun, chemistry*  
Oxford Science  
2. cellular solid that contains a large number of  
????  
*noun, material science*  
Notes: NEED TO CHECK ORIGINAL

**foetal material** (fetal material)

the placenta, amniotic fluid, foetal membranes, and umbilical cord.  
*noun, biology*  
IRB Guidebook

**foetus** (fetus)

the product of conception from the time of implantation until delivery.  
*noun, embryology*  
IRB Guidebook  
Notes: If the delivered or expelled foetus is viable, it is designated an infant. The term "foetus" generally refers to later phases of development; the term "embryo" is usually used for earlier phases of development.

**Foley catheter**

indwelling catheter retained in the bladder by a balloon that is inflated with liquid.  
*noun, medical device technology*  
ASTM

**folic acid**

water-soluble vitamin of the B complex.  
*noun, biology*  
Dorland Medical

**follicle**

sac or pouch-like depression or cavity.  
*noun, anatomy*  
Dorland Medical

**Food and Drug Administration FDA.**

U.S. federal agency that oversees and regulates foods, drugs, medical devices, and associated products.  
*noun, regulatory affairs*  
Biomedical Engineering Handbook

**foot**

distal portion of the leg.  
*noun, anatomy*

Dorland Medical

**footplate**

flat portion of the stapes, which is set into the oval window on the medial wall of the middle ear.  
*noun, anatomy*  
Dorland Medical

**foramen**

natural opening or passage, especially one into or through a bone.  
*noun, anatomy*  
Dorland Medical

**force**

that influence on a body which causes it to accelerate.  
*noun, physics*  
McGraw-Hill Engineering

**forceps**

1. pincer-like instrument for grasping objects.  
*noun, general*  
McGraw-Hill Engineering  
2. two-bladed instrument with a handle for compressing or grasping tissues in surgical operations, and for handling sterile dressings, etc.  
*noun, medicine*  
Dorland Medical

**forge**

to shape a metal by heating and hammering, either manually or by a machine.  
*verb, metallurgy*  
Williams

**formaldehyde**

HCHO. A gas of pungent odour, readily soluble in water, used in aqueous solution as a disinfectant, fixative and cross-linking agent.  
*noun, chemistry*  
Larousse Science

**forming**

general term encompassing all processes in which the shape of components such as tubing, sheets, etc., is changed to the final desired configuration of the device.  
*noun, engineering*  
Szycher's Biomaterials

**fossa**

shallow, irregular depression in a surface.  
*noun, anatomy*  
Heinemann Dental

**fouling**

1. coming into accidental contact with.  
*noun, biology*  
Larousse Science  
2. becoming contaminated by a surface layer derived from the environment.  
*noun, biology*  
Williams

**fourier transform infra red spectroscopy FTIR.**

form of infrared spectroscopy involving interferometric methods to give enhanced resolution.  
*noun, dentistry*  
Larousse Science

**fractography**

study of fracture surfaces of materials to determine the site of crack nucleation, the nature of crack propagation and the overall mechanism of failure.

*noun*, material science  
Larousse Science

**fracture**

1. the breaking or rupture of a component, structure or device.

*noun*, engineering  
Williams

2. break or rupture in a bone.

*noun*, medicine  
Dorland Medical

**fracture mechanics**

stress analysis of the conditions and criteria for crack propagation in materials.

*noun*, material science  
Larousse Science

**fracture of materials**

loss of structural integrity by propagation of cracks.

*noun*, material science  
Larousse Science

**fracture strength** *fracture stress*

stress that is necessary to cause fracture in a material.

*noun*, engineering  
McGraw-Hill Engineering

**fracture stress** *fracture strength*

the actual stress that causes fracture.

*noun*, engineering  
McGraw-Hill Engineering

**fracture toughness**

parameter that indicates the resistance of a material to crack propagation.

*noun*, engineering  
Larousse Science

**frame**

that part of a bioprosthetic heart valve on which tissue leaflets are mounted.

*noun*, medical device technology  
Williams

**framework**

metal skeleton of a denture or prosthesis on which the remaining portions are built up to produce a complete appliance.

*noun*, dentistry  
Heinemann Dental

**free energy**

the capacity of a system to perform work, a change in free energy being measured by the maximum work obtainable from a given process.

*noun*, chemistry  
Larousse Science

**free flap**

island flap detached from the body and reattached at the distant recipient site by microvascular anastomosis.

*noun*, surgery  
Dorland Medical

**free gingiva**

the closely adherent collar of gingiva around the neck of a tooth which also forms the outer wall of the gingival crevice.

*noun*, dentistry  
Heinemann Dental

**free radical**

atom or group of atoms in particular combinations with an unpaired electron capable of free existence only under special conditions and usually for only very short periods of time.

*noun*, chemistry  
Larousse Science

**free radical polymerisation**

mechanism of polymerisation that involves a reaction initiated by a free radical derived from a polymerisation catalyst.

*noun*, polymer science  
Szycher's Biomaterials

**freeway space**

interocclusal clearance of the dentition.

*noun*, dentistry  
Heinemann Dental

**freeze-drying**

method of tissue preparation in which the tissue specimen is frozen and then dehydrated at low temperature in a high vacuum.

*noun*, biology  
Dorland Medical

**French size**

scale used for denoting the size of tubular instruments and devices, each unit being roughly equivalent to 0.33 mm in diameter.

*noun*, medical device technology  
ASTM

Notes: Used in particular to denote the size of catheters.

**frenum**

membranous fold supporting or limiting the movement of an organ.

*noun*, anatomy  
Heinemann Dental

**fretting corrosion**

corrosion due to slight movements of unprotected metal surfaces, left in contact in a corroding atmosphere and under stress.

*noun*, material science  
Larousse Science

**Freund's adjuvant**

complete Freund's adjuvant is an emulsion of aqueous antigen in mineral oil that contains heat-killed mycobacteria; incomplete Freund's adjuvant lacks the mycobacteria.

*noun*, immunology  
Roitt Immunology

**friction**

the resistance to sliding motion between two surfaces in contact.

*noun*, physics  
Larousse Science

**friction welding**

welding process for metals and thermoplastic

materials in which two members are joined by rubbing the mating faces together under high pressure.

*noun*, engineering  
McGraw-Hill Engineering

**frit**

imperfectly fused material in pulverised form used as a basis for making glass and in the formation of porcelain teeth.

*noun*, material science  
Dorland Medical

**full board review**

review of proposed research at a convened meeting at which a majority of the membership of the IRB are present, including at least one member whose primary concerns are in non-scientific areas.

*noun*, medicine  
IRB Guidebook

**full denture** *complete denture*

denture that replaces all the teeth in either the upper or the lower jaw, or both.

*noun*, dentistry  
Heinemann Dental

**full thickness graft**

skin graft consisting of the full thickness of the skin, with little or none of the subcutaneous tissue.

*noun*, surgery  
Dorland Medical

**fulminate**

to occur suddenly with great intensity.

*verb*, medicine  
Dorland Medical

**function sensitivity**

lowest analyte concentration an assay can detect with reasonable precision and reliability.

*noun*, chemistry  
Witkin

**functional affinity** *avidity*

binding strength between two molecules (e.g. antibody and antigen) taking into account the valency of the interaction.

*noun*, immunology  
Roitt Immunology

**functional electrical stimulation FES.**

electric stimulation of peripheral nerves or muscles to gain functional, purposeful control over partially or fully paralysed muscles.

*noun*, bioengineering  
Biomedical Engineering Handbook

**functional group**

small cluster of linked atoms with chemically active bonds.

*noun*, chemistry  
Larousse Science

**functional residual capacity**

the lung volume at rest without breathing.

*noun*, biology  
Biomedical Engineering Handbook

**fungal**

pertaining to or caused by a fungus.

*adjective*, biology

Dorland Medical

**fungi**

kingdom of eukaryotic, heterotrophic organisms that live as saprobes or parasites, including mushrooms, yeasts, smuts, moulds, etc., and which have rigid cell walls but lack chlorophyll.

*noun*, biology  
Dorland Medical

**fungicide**

substance that kills fungal spores and/or mycelium.

*noun*, biology  
Larousse Science

**funiculus**

cord-like structure or part.

*noun*, anatomy  
Dorland Medical

**furcation**

anatomical area of a multi-coated tooth where the roots divide.

*noun*, dentistry  
Dorland Medical

**fusion**

1. merging or coherence of adjacent parts or bodies.

*noun*, medicine

2. the operative formation of an ankylosis or arthrosis.

*noun*, medicine

3. co-ordination of separate images of the same object in the two eyes into one.

*noun*, ophthalmology

Dorland Medical

4. solid to liquid phase change.

*noun*, physics

Larousse Science

**gait**

manner or style of walking.

*noun*, medicine  
Dorland Medical

**galactose**

$\text{CH}_2\text{OH}(\text{CHOH})_4\text{CHO}$ . A hexose.

*noun*, chemistry  
Larousse Science

**gallbladder**

a lateral diverticulum of the bile duct, in which the bile is stored.

*noun*, anatomy  
Larousse Science

**gallium Ga.**

symbol Ga, at. no. 31. A metallic element in the third group of the periodic system.

*noun*, chemistry  
Larousse Science

**gallstone**

pathological concretions in the gall bladder and bile passages.

*noun*, medicine  
Larousse Science

**galvanic cell** *voltaic cell*

electrochemical cell from which energy is drawn.  
*noun*, chemistry  
Larousse Science

**galvanic corrosion**

corrosion resulting from the current flow between two dissimilar metals that are in contact within an electrolyte.  
*noun*, engineering  
Larousse Science

**galvanic series**

electrochemical series for different metals and alloys in specific electrolytes.  
*noun*, chemistry  
Larousse Science

**gametes**

reproductive cells which will unite in pairs to produce zygotes.  
*noun*, genetics  
Larousse Science

**gamgee tissue**

surgical dressing composed of a thick layer of cotton-wool between two layers of absorbent gauze.  
*noun*, clinical practice  
Black's Medical

**gamma globulin**

one of the groups of serum proteins, mainly immunoglobulins, which on electrophoresis have the lowest anodic mobility at neutral pH.  
*noun*, immunology  
Larousse Science

**gamma iron**

the polymorphic form of iron stable between 906DEGREE SYMBOLC and 1403DEGREE SYMBOLC which has a face-centred cubic lattice and is non-magnetic.  
*noun*, metallurgy  
Larousse Science

**gamma radiation**

electromagnetic radiation of high quantum energy emitted after nuclear reactions or by radioactive atoms when the nucleus is left in excited state after emission of an alpha or beta particle.  
*noun*, physics  
Larousse Science

**ganglion**

1. group of nerve cell bodies, located outside the central nervous system.  
*noun*, anatomy
2. form of benign cystic tumour on an aponeurosis or a tendon.  
*noun*, medicine  
Dorland Medical

**gangrene**

the death and decay of body tissues caused by a deficiency or cessation of the blood supply, usually accompanied by infection and putrefaction.  
*noun*, medicine  
Black's Medical

**gap junction**

junction between cells which allows direct communication by molecules which can diffuse

through pores in the junction.  
*noun*, biology  
Larousse Science

**gas chromatography GC.**

an analytical method where the specimen is vaporised and introduced into a stream of carrier gas, which is then delivered through a chromatographic column that separates it into its constituent parts.  
*noun*, chemistry  
Szycher's Biomaterials

**gastr(o)-**

stomach  
*prefix*, medicine  
Dorland Medical

**gastrectomy**

surgical removal of the whole or part of the stomach.  
*noun*, surgery  
Black's Medical

**gastric ulcer**

ulcer of the gastric mucosa.  
*noun*, medicine  
Dorland Medical

**gastroenteritis**

inflammation of the stomach and intestines, usually resulting from an acute bacterial or viral infection.  
*noun*, medicine  
Black's Medical

**gastroenterology**

study of the stomach and intestine and their diseases.  
*noun*, medicine  
Dorland Medical

**gastrointestinal tube**

device that consists of flexible or semi-rigid tubing used for instilling fluids into, withdrawing fluids from, splinting, or suppressing bleeding of the alimentary tract.  
*noun*, medical device technology  
CFR

**gastroscope**

endoscope for inspecting the interior of the stomach.  
*noun*, medicine  
Dorland Medical

**gate**

in injection moulding, the channel through which the molten polymer is forced to flow from the runner system into the injection cavity.  
*noun*, polymer science  
Szycher's Biomaterials

**gauss**

CGS unit of magnetic flux density, equal to 10<sup>-4</sup>(SUPERSCRIPT) tesla.  
*noun*, physics  
Dorland Medical

**gauze**

light, open-meshed fabric of muslin or similar

material.  
*noun*, medicine  
Dorland Medical

**Geiger counter**

instrument that indicates the presence of ionising particles.  
*noun*, physics  
Dorland Medical

**gel**

1. substance with properties intermediate between the liquid and the solid states.  
*noun*, material science  
2. colloid in which the disperse phase is solid and the continuous phase liquid.  
*noun*, material science  
Larousse Science

**gel filtration**

type of column chromatography that separates molecules in solution according to size.  
*noun*, chemistry  
Larousse Science

**gel permeation chromatography**

analytical technique used for molecular weight characterisation in polymers, employing as the stationary phase a swollen gel made of cross-linked styrene.  
*noun*, polymer science  
Szycher's Biomaterials

**gelatine (gelatin)**

substance obtained by partial hydrolysis of collagen derived from skin, white connective tissue, and bones of animals.  
*noun*, biology  
Dorland Medical

**gelation**

conversion of a sol into a gel.  
*noun*, chemistry  
Dorland Medical

**genal**

relating to the cheek.  
*adjective*, anatomy  
Heinemann Dental

**gene**

hereditary determinant of a specified difference between individuals.  
*noun*, genetics  
Larousse Science

**gene expression**

any of the processes by which nuclear, cytoplasmic, or intercellular factors influence the differential control of gene action at the level of transcription or translation.  
*noun*, genetics  
Medline  
Notes: These processes include gene activation and genetic induction.

**gene probe**

single-stranded DNA or RNA fragment used in genetic engineering to search for a particular gene or other DNA sequence.  
*noun*, genetics

Oxford Science

**gene regulation**

transcriptional and post-transcriptional control of expression of genes in eukaryotes where regulatory proteins bind specific DNA sequences to turn a gene either on (positive control) or off (negative control).  
*noun*, genetics  
Biomedical Engineering Handbook

**gene sequencing**

process of elucidating the nucleotide sequence of a gene.  
*noun*, genetics  
Oxford Science

**gene splicing**

stage in the processing of messenger RNA.  
*noun*, genetics  
Oxford Science

**gene therapy**

1. modification or replacement of a defective or malfunctioning gene with one that functions adequately and properly  
*noun*, genetics  
Biomedical Engineering Handbook  
Notes: Used for instance, as in the addition of gene regulatory elements such as specific stress- or strain-sensitive response elements to specifically drive gene expression only in regions of interest in the vasculature so as to control proliferation, fibrinolytic capacity, etc.  
2. treatment of genetic disease accomplished by altering the genetic structure of either somatic (non-productive) or germ-line (reproductive) cells.  
*noun*, genetics  
IRB Guidebook

**general controls**

The group of FDA statutory provisions designed to control the safety of marketed drugs and devices.  
*noun*, general  
IRB Guidebook  
Notes: These include provisions on adulteration, misbranding, banned devices, good manufacturing practices, notification and record keeping, and other sections of the Medical Device Amendments to the Food, Drug and Cosmetic Act [21 U.S. Code §360(c) (Food, Drug and Cosmetic Act §513)].

**general thrombogenicity**

thrombogenicity of a blood-material system.  
*noun*, biomaterials science  
ESB Consensus Conference I

**generally recognised as safe and effective GRASE.**

*noun*, toxicology  
Notes: NEED FD&C ACT

**generic drug**

medicinal drug that is sold under its official (generic) name instead of its proprietary (patented brand) name.  
*noun*, pharmacology  
Black's Medical

**-genesis**

signifying formation or development.  
*suffix*, general  
Williams

**genetic**

- pertaining to reproduction or to birth or origin.  
*adjective*, genetics  
Dorland Medical
- genetic code**  
arrangement of nucleotides in the polynucleotide chain of a chromosome governing transmission of genetic information to proteins.  
*noun*, genetics  
Dorland Medical
- genetic engineering**  
techniques involved in altering the characters of an organism by inserting genes from another organism into its DNA.  
*noun*, genetics  
Oxford Science
- genetic fingerprinting**  
technique in which an individual's DNA is analysed to reveal the pattern of repetition of particular nucleotide sequences (the marker sequences) throughout the genome.  
*noun*, biology  
Oxford Science
- genetic screening**  
tests to identify persons who have an inherited predisposition to a certain phenotype or who are at risk of producing offspring with inherited diseases or disorders.  
*noun*, genetics  
IRB Guidebook
- genetic testing**  
the analysis of DNA, RNA or chromosomes for purposes such as the prediction of disease or vertical transmission risks, or monitoring, diagnosis or prognosis.  
*noun*, regulatory affairs  
Canadian Medical Devices
- genioplasty**  
plastic surgery of the chin.  
*noun*, surgery  
Heinemann Dental
- genit(o)-**  
referring to the organs of reproduction.  
*prefix*, anatomy  
Dorland Medical
- genital**  
pertaining to reproduction, or to the reproductive organs.  
*adjective*, anatomy  
Dorland Medical
- genitalia**  
reproductive organs.  
*noun*, anatomy  
Dorland Medical
- genito-urinary tract**  
the kidneys, ureter, bladder, and urethra and, in the male, the genital organs.  
*noun*, anatomy  
Black's Medical
- genome**  
complete set of chromosomes derived from one parent, or the total gene complement of a set of chromosomes.  
*noun*, biology  
Black's Medical
- genotoxicity**  
condition resulting from the interaction of toxic agents with DNA molecules in genes.  
*noun*, toxicology  
Oxford Science
- genotoxicity test**  
test that applies mammalian or non-mammalian cells, bacteria, yeasts or fungi to determine whether gene mutations, changes or chromosome structure, or other DNA or gene changes are caused by the test materials, devices and/or extracts from materials.  
*noun*, biomaterials science  
ISO
- genotype**  
genetic composition of an organism, i.e. the combination of alleles it possesses.  
*noun*, genetics  
Oxford Science
- gentamicin**  
antibiotic complex isolated from the actinomycetes of the genus *Micromonospora*, effective against many gram-negative bacteria.  
*noun*, pharmacology  
Dorland Medical
- gentian violet** *crystal violet*  
dye belonging to the rosaniline group, used as a superficial antiseptic.  
*noun*, medicine  
Black's Medical
- genus**  
category used in the classification of organisms that consists of a number of similar or closely related species.  
*noun*, biology  
Oxford Science
- germ**  
1. a living substance capable of developing into an organ, part, or organism as a whole; a primordium.  
*noun*, genetics  
2. a pathogenic micro-organism.  
*noun*, medicine  
Dorland Medical
- germanium Ge.**  
Element symbol Ge, at. no. 32, greyish-white, brittle metal.  
*noun*, chemistry  
Dorland Medical
- germicidal**  
lethal to pathogenic micro-organisms.  
*adjective*, biology  
Dorland Medical
- gerodontia, gerodontics** *gerontology*  
that branch of dentistry which is concerned with the care of elderly people.  
*noun*, dentistry  
Heinemann Dental

**geront(o)-**

old age; the aged.  
*prefix*, medicine  
Dorland Medical

**gerontology** *gerodontia, gerodontics*

that branch of dentistry which is concerned with the care of elderly people.  
*noun*, dentistry  
Heinemann Dental

**giant cell**

1. any very large cell.  
*noun*, medicine  
2. any of the very large, multi-nucleate, modified macrophages, which may be formed by coalescence of epithelioid cells or by nuclear division without cytoplasmic division of monocytes.  
*noun*, medicine  
Dorland Medical  
Notes: Characteristic of granulomatous inflammation and those that form around large foreign bodies.

**giga-**

prefix used to denote 10<sup>9</sup> times.  
*prefix*, general  
Larousse Science

**gingiva**

mucous membrane, with supporting fibrous tissue, covering the tooth-bearing border of the jaw.  
*noun*, dentistry  
Dorland Medical

**gingival crest** *gingival margin*

unattached edge of the gingiva at the necks of the teeth.  
*noun*, dentistry  
Heinemann Dental

**gingival crevice**

space between the cervical enamel of a tooth and the overlying unattached gingiva.  
*noun*, dentistry  
Dorland Medical

**gingival fluid**

transudate of blood plasma collecting in the gingival sulcus, produced by leakage from the capillaries in the free gingiva.  
*noun*, dentistry  
Heinemann Dental

**gingival hyperplasia**

enlargement of the gingiva, generally non-inflammatory.  
*noun*, dentistry  
Heinemann Dental

**gingival index GI.**

an index for assessing the quantity and severity of gingival disease in individual mouths.  
*noun*, dentistry  
Heinemann Dental

**gingival margin** *gingival crest*

unattached edge of the gingiva at the necks of the teeth.  
*noun*, dentistry  
Heinemann Dental

**gingival recession**

gradual shrinking back of the gums leaving the tooth cervix, and part of the root, exposed.  
*noun*, dentistry  
Heinemann Dental

**gingival septum**

that part of the gingiva lying between two teeth.  
*noun*, dentistry  
Heinemann Dental

**gingival sulcus**

space lying between the inner aspect of the free gingiva and the tooth enamel or cementum.  
*noun*, dentistry  
Heinemann Dental

**gingivectomy**

surgical excision of all loose infected and diseased gingival tissue.  
*noun*, dentistry  
Dorland Medical

**gingivitis**

inflammation of the gingiva.  
*noun*, dentistry  
Heinemann Dental

**gland**

aggregation of cells specialised to secrete or excrete materials not related to their ordinary metabolic needs.  
*noun*, anatomy  
Dorland Medical

**glass**

1. a hard, amorphous, brittle substance, made by fusing together one or more of the oxides of silicon, boron, or phosphorous, with certain basic oxides (e.g. sodium, magnesium, calcium, potassium), and cooling the product rapidly to prevent crystallisation or devitrification.  
*noun*, material science  
Larousse Science  
2. container, usually cylindrical, made from glass.  
*noun*, general  
Dorland Medical

**glass biomaterial**

any one of a number of compositions of amorphous inorganic solids that are used as implant materials for various medical or dental uses, or both.  
*noun*, biomaterials science  
ASTM

**glass ceramic**

ceramic processed to final shape as a glass and then induced to crystallise by controlled heat treatment.  
*noun*, material science  
Larousse Science

**glass fibre** (glass fiber)

glass melted and then drawn out into fine fibres which may be spun into threads and woven into tapes and cloths.  
*noun*, material science  
Larousse Science

**glass fibre reinforced plastic** (glass fiber reinforced plastic)

class of composite material comprising a polymeric matrix reinforced with glass fibre.

*noun*, material science  
Larousse Science

**glass ionomer cement** *glass polyalkenoate cement*  
translucent polyelectrolyte cement, based on an aluminosilicate glass powder.

*noun*, biomaterials science  
Heinemann Dental

Notes: It is used in restorations on anterior teeth, to fill pits and fissures, and as a base for other restorations.

**glass polyalkenoate cement** *glass ionomer cement*  
translucent polyelectrolyte cement, based on an aluminosilicate glass powder and a polyacid.

*noun*, biomaterials science  
Heinemann Dental

**glass transition**

reversible change that occurs in amorphous polymers when heated to a certain temperature, characterised by a transition to a rubbery condition.

*noun*, polymer science  
Szycher's Biomaterials

**glass transition temperature**

temperature at which a polymer transforms from a brittle to a rubbery condition.

*noun*, polymer science  
Williams

**glass-ceramic biomaterial**

any one of a number of compositions of an amorphous-derived crystalline solid that is used as an implantable biomaterial for medical or dental use, or both.

*noun*, biomaterials science  
ASTM

**glasses**

lenses arranged in a frame holding them in the proper position before the eyes, as an aid to vision.

*noun*, ophthalmology  
Dorland Medical

**glaucoma**

a group of eye diseases characterised by an increase in intraocular pressure, causing pathological changes in the optic disk and typical visual field defects.

*noun*, ophthalmology  
Dorland Medical

**glaze**

transparent or semi-transparent varnish coating, usually on a ceramic such as porcelain.

*noun*, material science  
Larousse Science

**glenoid**

resembling a pit or socket.

*adjective*, anatomy  
Dorland Medical

**glenoid fossa** *mandibular fossa*

the depression in the squamous portion of the temporal bone below the zygomatic process, in which the condyle of the mandible rests.

*noun*, anatomy

Heinemann Dental

**glial**

of or pertaining to the neuroglia.

*adjective*, anatomy  
Dorland Medical

**glial cell**

cell of the nervous system that supports the neurones

*noun*, anatomy  
Oxford Science

**glioblastoma**

any malignant astrocytoma.

*noun*, medicine  
Dorland Medical

**glioma**

tumour composed of neuroglia in any of its states of development.

*noun*, medicine  
Dorland Medical

**globule**

small spherical mass.

*noun*, biology  
Dorland Medical

**globulin**

class of proteins insoluble in water, but soluble in saline solutions, or water-soluble proteins.

*noun*, biology  
Dorland Medical

**glomerular**

pertaining to or of the nature of a glomerulus.

*adjective*, medicine  
Dorland Medical

**glomerular filtration rate**

the volume of plasma water, or primary urine, filtered in the glomerulus per unit of time.

*noun*, medicine  
Biomedical Engineering Handbook

**glomerulus**

tangled mass of blood capillaries enclosed by the cup-shaped end (Bowman's capsule) of a kidney tubule.

*noun*, anatomy  
Oxford Science

**gloss(o)-**

relating to the tongue.

*prefix*, anatomy  
Dorland Medical

**glossitis**

inflammation of the tongue.

*noun*, medicine  
Heinemann Dental

**glottis**

narrow opening at the upper end of the larynx.

*noun*, anatomy  
Black's Medical

**glow discharge**

electrical discharge through a low-pressure gas, producing plasma.

*noun*, physics

Larousse Science

**gluconate**

salt, ester, or anionic form of gluconic acid.

*noun*, biology

Dorland Medical

**glucosamine**

amino derivative of glucose,  $C_6H_{13}NO_5$  (SUBSCRIPT), occurring in many polysaccharides.

*noun*, biology

Dorland Medical

**glucose**

a six-carbon aldose, the end product of carbohydrate metabolism, and the chief source of energy for living organisms, its utilisation being controlled by insulin.

*noun*, biology

Dorland Medical

**glucose-6-phosphatase**

enzyme that catalyses the hydrolytic dephosphorylation of glucose 6 phosphate.

*noun*, biology

Dorland Medical

**glucose-6-phosphate dehydrogenase G6PD.**

enzyme that catalyses the dehydrogenation of glucose-6-phosphate to 6-phosphogluconolactone.

*noun*, medicine

Larousse Science

**glucosidase**

any of a group of enzymes of the hydrolase class that hydrolyse glucose residues from glucosides.

*noun*, medicine

Dorland Medical

**glucuronic acid**

compound,  $OC_6H_8O_6$  (SUBSCRIPT), derived from the oxidation of glucose.

*noun*, biology

Oxford Science

**$\beta$ -glucuronidase**

enzyme that attacks terminal glycosidic linkages in natural and synthetic glucuronides.

*noun*, biology

Dorland Medical

**glue**

substance used as an adhesive agent between surfaces to be united.

*noun*, general

Larousse Science

**glutamic acid Glu, short form E.**

2-amino-pentane-1,6-dioic acid.  
 $H_2NCH_2CH_2CH(NH_2)COOH$ , amino acid,

*noun*, chemistry

Larousse Science

**glutaraldehyde**

a disinfectant,  $C_5H_8O_2$  (SUBSCRIPT).

*noun*, biology

Dorland Medical

Notes: Used in aqueous solution for sterilisation of non-heat-resistant equipment; also used topically as an anhydrotic and as a tissue fixative.

**gluteal**

the region of the buttock and the structures situated in it, such as the gluteal muscles, arteries, and nerves.

*adjective*, anatomy

Black's Medical

**glycocalyx**

complex mixture of polysaccharide components found outside the bacterial cell wall.

*noun*, biology

Szycher's Biomaterials

**glycol**

any of a group of aliphatic dihydric alcohols, having marked hygroscopic properties and useful as solvents and plasticisers.

*noun*, medicine

Dorland Medical

**glycolic acid**

an intermediate in the conversion of serine to glycine.

*noun*, biology

Dorland Medical

Notes: NEED CHEMICAL FORMULA.

**glycolysis**

the sequence of reactions which converts glucose to pyruvate with the concomitant net synthesis of two molecules of ATP.

*noun*, biology

Larousse Science

**glycoprotein**

carbohydrate linked covalently to a protein.

*noun*, biology

Oxford Science

**glycosaminoglycans GAG.**

any of a group of high molecular weight linear polysaccharides with various disaccharide repeating units.

*noun*, biology

Dorland Medical

Notes: Occurs in proteoglycans, including the chondroitin sulphates, dermatan sulphates, heparan sulphate and heparin, keratan sulphates, and hyaluronic acid.

**glycosuria**

presence of sugar in the urine.

*noun*, medicine

Black's Medical

**glycosylation**

formation of linkages with glycosyl groups.

*noun*, chemistry

Dorland Medical

**gnathology**

science dealing with the masticatory apparatus as a whole, including morphology, anatomy, histology, physiology, pathology, and therapeutics.

*noun*, medicine

Dorland Medical

**gnotobiota**

the specifically and entirely known microfauna and microflora of a specially reared laboratory animal.

*noun*, biology

Dorland Medical

**gnotobiotic**

of a known (defined) environment for living organisms, either *in vitro* as a sterile culture inoculated with one or a few strains of bacteria, or an environment in which animals can be reared and in which all the living microbes are known.

*adjective*, biology  
Larousse Science

**gold Au.**

symbol Au, at. no. 79, heavy, yellow, metallic element.

*noun*, chemistry  
Larousse Science

**gold condenser**

instrument used to condense and compact direct filling gold into a prepared cavity.

*noun*, dentistry  
Heinemann Dental

**gold-based alloy** *precious metal alloys*

mixtures of metals, the major components of which are gold, silver, or palladium, and possibly small quantities of copper or platinum, that are intended to fabricate dental appliances, such as crowns and bridges.

*noun*, dentistry  
CFR

**Golgi complex** *Golgi apparatus*

complex cellular organelle consisting mainly of a number of flattened sacs (cisternae) and associated vesicles, involved in the synthesis of glycoproteins, lipoproteins, membrane-bound proteins, and lysosomal enzymes.

*noun*, biology  
Dorland Medical

**gomphosis**

type of fibrous joint in which a conical process is inserted into a socket-like portion.

*noun*, anatomy  
Dorland Medical

**goniometer**

1. device for measuring angles.

*noun*, engineering  
Williams

2. AC-powered medical device intended to evaluate joint function by measuring and recording ranges of motion, acceleration, or forces exerted by a joint.

*noun*, medical device technology  
CFR

**good manufacturing practices GMP.**

regulation covering the methods used in, and the facilities and controls used for the design, manufacture, packaging, storage, and installation of devices.

*noun*, regulatory affairs  
CFR

Notes: The GMP regulation contains general quality assurance (QA) or quality system requirements in areas of concern to all manufacturers of finished devices. Among other requirements, it covers the following general areas:

- organisation and personnel;
- design practices and procedures;
- buildings and environmental control;
- design of labelling and packaging;
- controls for components, processes, packaging and labelling;

- device holding, distribution and installation;
- device evaluation;
- device and manufacturing records;
- complaint processing; and
- QA system audits.

**Goretex**

trade name for microporous polytetrafluoroethylene.

*noun*, material science  
Larousse Science

Notes: It is made by stretching polymer in controlled way so as to create fine pores, which allow diffusion of air and water vapour but prevent liquid water ingress. Used extensively in implantable devices such as vascular prostheses.

**Gouy layer**

diffuse layer of counterions surrounding charged lattices at the surface of particles immersed in liquid.

*noun*, chemistry  
Larousse Science

**graft**

piece of viable tissue or collection of viable cells transferred from a donor site to a recipient site for the purpose of reconstruction of the recipient site.

*noun*, surgery  
ESB Consensus Conference I

**graft polymer**

heterogeneous polymer comprising a molecular structure where the main backbone has covalently bonded side chains at various points, containing radicals or groups different from those in the main chain.

*noun*, polymer science  
Szycher's Biomaterials

**graft rejection**

process by which the immune system recognises and ultimately destroys non-tissue matched organ grafts.

*noun*, immunology  
Larousse Science

**graft-versus-host reaction**

process that occurs when a tissue graft (notably bone marrow) contains T lymphocytes which can respond to antigens present in the recipient which are not identical with those of the donor.

*noun*, immunology  
Larousse Science

**grain**

1. minute particle.

*noun*, general

2. feature of the structure, or more usually microstructure, of a material that represents variation in molecular orientation, as in the grain of wood or (synonymous with crystal) in the microstructure of metals.

*noun*, material science  
Larousse Science

3. measure of weight, the twentieth part of a scruple; 0.065 gm.

*noun*, general  
Dorland Medical

**grain boundary** *crystal boundary*

zone formed at the junction of individual crystals in a polycrystalline material

*noun*, material science  
Larousse Science

**grain growth**

stage in the annealing process of cold-worked metals, in which holding the metal at above about 0.4-0.5  $T_{SUBSCRIPT m}$  (melting temperature) after recrystallisation has taken place, allows the average grain size of the metal crystals to increase.  
*noun*, metallurgy  
Larousse Science

**grain refining**

production of small closely knit grains, resulting in improved mechanical properties.  
*noun*, metallurgy  
Larousse Science

**grain size**

the average diameter or expressed dimension of the grains or crystals in a sample of metal or rock.  
*noun*, material science  
Larousse Science

**grant**

financial support provided for research study designed and proposed by the principal investigator(s).  
*noun*, general  
IRB Guidebook  
Notes: The granting agency exercises no direct control over the conduct of approved research supported by a grant.

**granulation**

1. formation in wounds of small, rounded masses of tissue during healing.  
*noun*, medicine
2. division of a hard substance into small particles.  
*noun*, general  
Dorland Medical

**granulation tissue**

new formation of vascular connective tissue which grows to fill up the gap of a wound or ulcer.  
*noun*, medicine  
Larousse Science

**granule**

1. main form in which a compounded polymer is supplied for further processing to shape.  
*noun*, polymer science  
Larousse Science
2. small particle or grain.  
*noun*, general  
Dorland Medical

**$\alpha$ -granule**

one of the two main types of intracellular granule of platelets that contain thrombospondin, platelet factor 4,  $\beta$ -thromboglobulin and platelet derived growth factor.  
*noun*, biology  
Williams

**granulocyte**

myeloid cells containing cytoplasmic granules (i.e. neutrophils, eosinophils and basophils).  
*noun*, anatomy  
Roitt Immunology

**granuloma**

inflammatory tissue nodule containing proliferating lymphocytes, fibroblasts, giant cells and epithelioid cells, which forms in response to chronic infection or persistence of antigen.  
*noun*, immunology  
Roitt Immunology

**graphite**

one of the two naturally occurring forms of crystalline carbon.  
*noun*, chemistry  
Larousse Science

**green compact**

ceramic pre-form before sintering, held together by the cohesive forces resulting from compaction alone or with the assistance of a temporary binder.  
*noun*, material science  
Larousse Science

**greenstick fracture**

fracture in which the bone is broken on one side but only bent on the other.  
*noun*, medicine  
Heinemann Dental

**grit blasting**

finishing technique where abrasive particles are blasted onto a surface in order to produce roughening.  
*noun*, engineering  
Szycher's Biomaterials

**ground substance**

the matrix of connective tissue, in which various cells and fibres are embedded.  
*noun*, anatomy  
Oxford Science

**grout**

fluid cement mixture for filling crevices.  
*noun*, engineering  
Larousse Science

**growth**

1. normal process of increase in size of an organism as a result of accretion of tissue similar to that originally present.  
*noun*, medicine
2. abnormal formation, such as a tumour.  
*noun*, medicine
3. proliferation of cells, as in a bacterial culture.  
*noun*, biology  
Dorland Medical

**growth factor**

any of a group of polypeptide hormones which regulate the division of cells.  
*noun*, biology  
Larousse Science

**growth hormone somatotrophin GH.**

product of the anterior part of the pituitary gland that promotes normal growth and development in the body by changing the chemical activity in the cells.  
*noun*, medicine  
Black's Medical

**guidance**

directed response to some high-order tensor-like

property of the environment in which opposite directions are equivalent.

*noun*, biology

Biomedical Engineering Handbook

**guided tissue regeneration**

process in which the characteristics of newly forming tissue are influenced by a surgical intervention.

*noun*, biomaterials science

Williams

Notes: Particularly applies to tissue regeneration guided by the morphology or topography of a biomaterial surface.

**gutta percha**

material made from coagulated sap of certain tropical trees intended to fill the root canal of a tooth.

*noun*, dentistry

CFR

**gypsum**

native calcium sulphate dihydrate; when calcined, it becomes plaster of Paris.

*noun*, medicine

Dorland Medical

Notes: Used in dressings for fractures and for taking dental impressions.

**haem(o)-** (hem(o)-)

relating to blood.

*prefix*, biology

Dorland Medical

**haemagglutinin** (hemagglutinin)

any molecule which agglutinates erythrocytes.

*noun*, immunology

Roitt Immunology

**haemangioendothelioma** (hemangioendothelioma)

true neoplasm of vascular origin, characterised by proliferation of endothelial cells in and about the vascular lumen.

*noun*, medicine

Dorland Medical

**haemangioma** (hemangioma)

benign tumour, usually in infants or children, made up of newly formed blood vessels.

*noun*, medicine

Dorland Medical

**haematocrit** (hematocrit)

1. the volume percentage of erythrocytes in whole blood.

*noun*, biology

Dorland Medical

(hematocrit)

2. graduated capillary tube of uniform bore in which whole blood is centrifuged, to determine the ratio, by volume, of blood cells to plasma.

*noun*, biology

Larousse Science

**haematogenous** (hematogenous)

produced by or derived from the blood.

*adjective*, medicine

Dorland Medical

**haematology** (hematology)

the science dealing with the morphology of blood

and blood forming tissues, and with their physiology and pathology.

*noun*, medicine

Dorland Medical

**haematoma** (hematoma)

localised collection of extravasated blood, usually clotted, in an organ, space, or tissue.

*noun*, medicine

Dorland Medical

**haematopoiesis** (hematopoiesis)

production of erythrocytes and leucocytes.

*noun*, immunology

Roitt Immunology

**haematoxylin** (hematoxylin)

acid colouring matter from the heartwood of *Haematoxylon campechianum*; used as a histologic stain and also as an indicator.

*noun*, biology

Dorland Medical

**haematoxylin-eosin stain** (hematoxylin-eosin stain) **H&E.**

mixture of haematoxylin in distilled water and aqueous eosin solution, employed universally for routine tissue examination.

*noun*, biology

Dorland Medical

**haematuria** (hematuria)

presence of blood in the urine.

*noun*, medicine

Larousse Science

**haemiplegia**

paralysis of one side of the body.

*noun*, medicine

Dorland Medical

**haemocompatibility** (hemocompatibility)

one aspect of biocompatibility, relating to the specific interactions between biomaterials and circulating blood.

*noun*, biomaterials science

Williams

**haemocompatibility test**

test to evaluate effects on blood or blood components by blood-contacting devices or materials using an appropriate model or system.

*noun*, biomaterials science

ISO

Notes: Specific haemocompatibility tests may also be designed to simulate the geometry, contact conditions and flow dynamics of the device or material during clinical applications.

**haemodialyser** (hemodialyzer)

apparatus for performing haemodialysis.

*noun*, medicine

Dorland Medical

**haemodialysis** (hemodialysis)

removal of certain elements from the blood by virtue of difference in rates of their diffusion through a semi-permeable membrane while being circulated outside the body.

*noun*, medicine

Dorland Medical

**haemodialysis system** (hemodialysis system)

device that is used for the treatment of patients with renal failure or toxæmic conditions and that consists of an extracorporeal blood system, a conventional dialyser, a dialysate delivery system, and accessories.

*noun*, medical device technology  
CFR

**haemodilution** (hemodilution)

1. increase in fluid content of blood, resulting in diminution in the concentration of formed elements.

*noun*, medicine  
Dorland Medical

(hemodilution)

2. temporary reduction in blood erythrocyte concentration (and consequently haemoglobin content, haematocrit, oxygen-carrying capacity, and viscosity) resulting from mixing with the erythrocyte-free or erythrocyte-poor content of the liquid used to prime an extracorporeal circuit.

*noun*, medical device technology  
Biomedical Engineering Handbook

**haemodynamic performance** (hemodynamic performance)

characteristics of a prosthetic heart valve that relate to the pattern and energetics of blood flow, including pressure drop, and regurgitation.

*noun*, medical device technology  
Williams

**haemofiltration** (hemofiltration)

removal of water and solutes by convective transport, controlled by a large hydrostatic pressure difference between blood and a liquid compartment across a large-pore, high-water-flux membrane.

*noun*, medical device technology  
Biomedical Engineering Handbook

**haemoglobin** (hemoglobin)

oxygen-carrying pigment of the erythrocytes, formed by the developing erythrocyte in the bone marrow, made up of four different globin polypeptide chains.

*noun*, biology  
Dorland Medical

**haemoglobinaemia** (hemoglobinaemia)

abnormal presence of haemoglobin in the blood, as a result of destruction of red blood cells.

*noun*, medicine  
Larousse Science

**haemoglobinuria** (hemoglobinuria)

presence of haemoglobin in the urine, as a result of excessive destruction of red blood cells.

*noun*, medicine  
Larousse Science

**haemolysis** (hemolysis)

the destruction of red blood cells with liberation of haemoglobin in surrounding plasma.

*noun*, medicine  
Biomedical Engineering Handbook

Notes: It is caused by mechanical damage of the erythrocyte membrane, osmotic imbalance between intracorporeal and extracorporeal ion concentration, or uncontrolled freezing-thawing cycles.

**haemolytic anaemia** (hemolytic anemia)

anaemia due to an abnormal increase in the rate of destruction of circulating erythrocytes.

*noun*, medicine  
Larousse Science

**haemoperfusion** (hemoperfusion)

process in which blood is passed through an external circuit that contains a device for removal of certain substances in the blood.

*noun*, medicine  
Williams

**haemoperfusion system** (hemoperfusion system)

device that consists of an extracorporeal blood system and a container filled with adsorbent material that removes a wide range of substances, both toxic and normal, from blood flowing through it.

*noun*, medical device technology  
CFR

Notes: It is used in the treatment of poisoning, drug overdose, hepatic coma, or metabolic disturbances.

**haemophilia** (hemophilia)

hereditary haemorrhagic diathesis due to deficiency of a blood coagulation factor.

*noun*, medicine  
Dorland Medical

**haemorrhage** (hemorrhage)

escape of blood from the vessels.

*noun*, medicine  
Dorland Medical

**haemorrheology** (hemorrheology)

study of the deformation and flow properties of cellular and plasmatic components of blood.

*noun*, medicine  
Dorland Medical

**haemosiderin** (hemosiderin)

insoluble form of tissue storage iron.

*noun*, biology  
Dorland Medical

**haemosiderosis** (hemosiderosis)

focal or general increase in tissue iron stores without associated tissue damage.

*noun*, medicine  
Dorland Medical

**haemostasis** (hemostasis)

arrest of bleeding by the physiological properties of vasoconstriction and coagulation or by surgical means.

*noun*, medicine  
Dorland Medical

**haemostat** (hemostat)

1. agent used to inhibit bleeding by applying it directly to the wound or the site of the bleeding.

*noun*, medicine  
Heinemann Dental

(hemostat)

2. small surgical clamp for constricting blood vessels.

*noun*, medicine  
Dorland Medical

**haemostatic** (hemostatic)

relating to the arrest of bleeding.

*adjective*, medicine

Heinemann Dental

**haemostatic agent** (hemostatic agent)

any substance used in haemostasis that exerts its effect by direct contact with the site of haemorrhage.

*noun*, biomaterials science

Williams

Notes: Used typically in the form of a powder, or gel, often based on collagen or alginate products.

**Hageman factor** *Factor XII*

factor which initiates the intrinsic process of blood clotting.

*noun*, medicine

Larousse Science

**hallux**

the great toe.

*noun*, anatomy

Dorland Medical

**halogen**

any of the seventh group of elements in the Periodic Table, for which there is one electron vacancy in the outer energy level.

*noun*, chemistry

Larousse Science

Notes: These elements are fluorine (F), chlorine (Cl), bromine (Br), iodine (I), astatine (At).

**halogenation**

introduction of halogen atoms into an organic molecule by substitution or addition.

*noun*, chemistry

Larousse Science

**handicap**

any physical or mental defect, congenital or acquired, preventing or restricting a person from participating in a normal life or limiting their capacity to work.

*noun*, medicine

Dorland Medical

**handpiece**

that part of a dental engine held in the operator's hand and engaging the bur or working point while it is being revolved.

*noun*, dentistry

Dorland Medical

**hapatocyte** *Hirschfeld canal*

one of the tubular canals or grooves occurring in the alveolar bone structure of the maxilla and of the mandible, through which pass anastomosing blood vessels.

*noun*, anatomy

Heinemann Dental

**haploid**

having half the number of chromosomes characteristically found in the somatic (diploid) cells of an organism.

*noun*, genetics

Dorland Medical

**haptan**

low molecular weight molecule that is recognised by pre-formed antibody but is not itself immunogenic unless conjugated to a 'carrier' molecule which provides epitopes recognised by helper T-cells.

*noun*, immunology

Roitt Immunology

Notes: Certain metal ions, for example of nickel, act as haptens, binding to plasma proteins; this is the mechanism by which hypersensitivity to metals occur.

**haptic**

non-optical part of an intraocular lens, being that part which provides for fixation or stabilisation in the eye.

*noun*, ophthalmology

Williams

**hard palate**

the bony, front portion of the roof of the mouth, covered by mucosa closely bound to the underlying bone.

*noun*, dentistry

Heinemann Dental

**hard segment**

rigid part of a block copolymer polymer.

*noun*, polymer science

Larousse Science

Notes: Particularly seen with polyurethanes and block polyesters, formed from isocyanate or polyester groups respectively.

**hardner** *curing agent*

1. compound normally used in a predetermined concentration to react chemically with a substance by means of several different mechanisms (for example, condensation or addition polymerisation) with or without heat or pressure in order to change the form of that substance from a liquid or fusible, friable, soluble solid to an infusible, insoluble solid having useful and desirable application or end-use properties.

*noun*, material science

ASTM

*curing agent*

2. compound that is added to a substance with the intention of converting that substance from a liquid or soluble solid to a useful insoluble solid.

*noun*, material science

Notes: A more generalised version of definition 1.

**hardness**

the general qualities of resistance to cutting, indentation and/or abrasion.

*noun*, engineering

Larousse Science

**hardness number**

number representing the relative hardness of a mineral, metal, or other material as determined by any hardness test.

*noun*, material science

McGraw-Hill Engineering

**hardness test**

a test to determine the relative hardness of a metal, mineral, or other material according to one of several scales, such as Brinell, Mohs or Shore.

*noun*, engineering

McGraw-Hill Engineering

**harm**

damage or adverse effect to a population, species, individual organism, organ, tissue or cell.

*noun*, biology  
Duffus, 1993

**Haversian canals**

small channels pervading compact bone and containing blood vessels.

*noun*, anatomy  
Larousse Science

**Haversian lamellae**

in compact bone, the concentrically arranged lamellae which surround a Haversian canal.

*noun*, anatomy  
Larousse Science

**Haversian system**

in compact bone, a Haversian canal with surrounding lamellae.

*noun*, anatomy  
Larousse Science

**hazard**

1. source of danger.

*noun*, general  
WHO

2. inherent property of a substance, agent, source of energy or situation having the potential of causing undesirable consequences.

*noun*, general  
OECD

**hazard assessment**

estimation of the incidence and severity of the adverse effects likely to occur in an environmental compartment due to actual or predicted exposure to a substance.

*noun*, general  
OECD

**hazard identification**

identification of the adverse effects which a substance has an inherent capacity to cause.

*noun*, general  
OECD

**healing**

process of cure; the restoration of integrity to injured tissue.

*noun*, medicine  
Dorland Medical

**healing by first intention**

wound healing in which union or restoration of continuity occurs directly, without intervention of granulations.

*noun*, medicine  
Dorland Medical

**healing by second intention**

union by closure of a wound with granulations.

*noun*, medicine  
Dorland Medical

**health care facility**

facility that provides diagnostic or therapeutic services to patients. It includes a group of such

facilities that report to one common management that has responsibility for the activities carried out in those facilities.

*noun*, regulatory affairs  
Canadian Medical Devices

**health care professional**

person who is entitled, under local legislation, to provide health services to the locality.

*noun*, regulatory affairs  
Canadian Medical Devices

**health problem**

condition that impairs people's health or increases their risk for impaired health.

*noun*, clinical practice  
Williams

**health status assessment**

measurement or evaluation of a person's or patient's health, as determined by self-reported responses to a questionnaire that can contain biological, functional, mental, social, emotional and other indicators.

*noun*, medicine  
Witkin

**hearing**

sense by which sounds are perceived.

*noun*, medicine  
Dorland Medical

**hearing aid**

generic wearable sound-amplifying device that is intended to compensate for impaired hearing.

*noun*, medical device technology  
CFR

Notes: Includes the air-conduction hearing aid and the bone-conduction hearing aid.

**heart**

the viscus of cardiac muscle that maintains the circulation of the blood.

*noun*, anatomy  
Dorland Medical

**heart block**

1. impairment of conduction of an impulse in heart excitation.

*noun*, medicine  
Dorland Medical

2. the condition in which a lesion of the special tissue that conducts the contraction impulse from the atrium to the ventricle prevents the spread of the wave of contraction, usually leading to a slow pulse.

*noun*, medicine  
Larousse Science

Notes:  
This is a more specific usage of the word than implied from definition 1 and is more common.

**heart rate**

the number of contractions of the cardiac ventricles per unit of time.

*noun*, medicine  
Dorland Medical

**heart-lung machine**

combination blood pump (artificial heart) and blood oxygenator (artificial lung) used in open-heart

surgery.  
*noun*, medical device technology  
Dorland Medical

**heat exchanger**

1. device for transferring heat from one fluid to another without permitting the two fluids to contact each other.  
*noun*, engineering  
Oxford Science  
2. device that is part of an extracorporeal circuit, which consists of a heat exchange system, to warm or cool the blood or perfusion fluid flowing through the circuit.  
*noun*, medical device technology  
Szycher's Medical Devices

**heat sealing**

the process of joining two or more thermoplastic materials by heating areas of contact under pressure.  
*noun*, polymer science  
Szycher's Biomaterials

**heat shock proteins HSP.**

class of protein produced in excess when the organism or culture is subject to an elevated temperature.  
*noun*, biology  
Larousse Science

**heat sterilisation** (heat sterilization)

an act of destroying all forms of life on and in bacteriological media, foods, hospital supplies, and other materials by means of moist or dry heat.  
*noun*, biology  
McGraw-Hill Engineering

**heat steriliser** (heat sterliizer)

a device that uses dry heat to sterilise medical products.  
*noun*, medical device technology  
Szycher's Biomaterials

**heavy chain**

any of the large polypeptide chains of five classes that, paired with the light chains, make up an antibody molecule.  
*noun*, immunology  
Dorland Medical

**helium**

Element symbol He, at. no. 2, inert gas.  
*noun*, chemistry  
Dorland Medical

**helix**

coiled structure.  
*noun*, general  
Dorland Medical

**helper cells** *helper T lymphocyte, helper T-cell*

thymus-derived lymphocyte which co-operates with B lymphocytes to enable them to produce antibody when stimulated by antigen or by some polyclonal mitogens.  
*noun*, immunology  
Larousse Science

**helper T lymphocyte** *helper cells, helper T-cell*

thymus-derived lymphocyte which co-operates with

B lymphocytes to enable them to produce antibody when stimulated by antigen or by some polyclonal mitogens.  
*noun*, immunology  
Larousse Science

**helper T-cell** *helper cells, helper T lymphocyte*

a thymus-derived lymphocyte which co-operates with B lymphocytes to enable them to produce antibody when stimulated by antigen or by some polyclonal mitogens.  
*noun*, immunology  
Larousse Science

**heme**

iron compound of protoporphyrin which constitutes the pigment portion or protein-free part of the haemoglobin molecule and is responsible for its oxygen-carrying properties.  
*noun*, biology  
Dorland Medical

**hemiarthroplasty**

surgical treatment of a diseased or injured joint involving the replacement of one of the joint surfaces only.  
*noun*, surgery  
Williams

**hemiatrophy**

wasting of muscles of one side of the body, or of one half of a part of the body.  
*noun*, medicine  
Larousse Science

**hemidesmosome**

structure found on the basal surface of an epithelial cell, the attachment site between the cell and the underlying membrane.  
*noun*, anatomy  
Heinemann Dental

**hemisphere**

half of a spherical or roughly spherical structure or organ.  
*noun*, anatomy  
Dorland Medical

**hepar**

the liver.  
*noun*, anatomy  
Dorland Medical

**heparan sulphate** (heparan sulfate)

glycosaminoglycan occurring in the cell membrane of most cells, consisting of a repeating disaccharide unit of glucosamine and uronic acid residues.  
*noun*, biology  
Dorland Medical

**heparin**

sulphated glycosaminoglycan of mixed composition, released by mast cells and by blood basophils in many tissues, especially the liver and lungs, and having potent anticoagulant properties.  
*noun*, medicine  
Dorland Medical

**heparin coating**

layer of heparin that is attached by any method to the surface of a medical device in order to confer

- superior biocompatibility characteristics.  
*noun*, biomaterials science  
Williams
- heparinise** (heparinize)  
to render blood incoagulable with heparin.  
*verb*, medicine  
Dorland Medical
- hepatic**  
pertaining to the liver.  
*adjective*, medicine  
Dorland Medical
- hepatitis**  
inflammation of the liver.  
*noun*, medicine  
Dorland Medical
- hepatitis A**  
self-limited viral disease of world-wide distribution, usually transmitted by oral ingestion of infected material but sometimes transmitted parenterally.  
*noun*, medicine  
Dorland Medical
- hepatitis B**  
acute viral disease transmitted primarily parenterally, but also orally, by intimate personal contact, and from mother to neonate.  
*noun*, medicine  
Dorland Medical
- hepatitis C**  
viral disease commonly occurring after transfusion or parenteral drug abuse.  
*noun*, medicine  
Dorland Medical
- hermetic**  
impervious to air.  
*adjective*, engineering  
Dorland Medical
- hermetic seal**  
joint created between two components of a device such that no air or fluid can pass between them  
*noun*, engineering  
Williams
- hernia**  
protusion of a portion of an organ or tissue through an abnormal opening.  
*noun*, medicine  
Dorland Medical
- herniorrhaphy**  
surgical repair of hernia, with suturing.  
*noun*, surgery  
Dorland Medical
- heroin**  
diacetylmorphine; a highly addictive morphine derivative, C<sub>21</sub>H<sub>23</sub>NO<sub>5</sub>  
*noun*, medicine  
Dorland Medical
- herpes**  
acute inflammatory skin infection, of viral origin, and characterised by vesicles which appear in clusters.  
*noun*, medicine  
Heinemann Dental
- heterogeneous**  
1. not of uniform composition, quality or structure.  
*adjective*, general  
Dorland Medical  
2. consisting of two or more distinguishable phases.  
*adjective*, material science  
Oxford Science
- heterograft** *xenograft*  
tissue graft in which donor and recipient are of different species.  
*noun*, surgery  
Dorland Medical
- heterophilic**  
having affinity for antigens or antibodies other than the one for which it is specific.  
*adjective*, immunology  
Dorland Medical
- heteropolymer**  
a copolymer formed by an addition polymerisation that involves the combination of two dissimilar unsaturated organic monomers.  
*noun*, polymer science  
Szycher's Biomaterials
- hexamethylenediamine**  
a colourless solid, which is used primarily in the polycondensation reaction to form nylon 66.  
*noun*, polymer science  
Szycher's Biomaterials
- hiatus**  
a gap, cleft or opening.  
*noun*, anatomy  
Dorland Medical
- high density polyethylene HDPE.**  
polyethylene polymers ranging in density from about 0.94 to 0.96 and higher.  
*noun*, polymer science  
Szycher's Biomaterials
- hip arthroplasty**  
any process of surgical repair of the hip joint.  
*noun*, surgery  
Williams
- hip joint**  
the spheroidal joint between the head of the femur and the acetabulum of the hip bone.  
*noun*, anatomy  
Dorland Medical
- Hirschfeld canal** *hapatocyte, interdental canal*  
one of the tubular canals or grooves occurring in the alveolar bone structure of the mailla and of the mandible, through which pass anastomosing blood vessels.  
*noun*, anatomy  
Heinemann Dental
- hirudin**  
the active principle of the buccal secretion of leeches.  
*noun*, pharmacology

Dorland Medical

Notes: It prevents coagulation by acting as an antithrombin.

**histamine**

vasoactive amine present in basophil and mast cell granules which, following degranulation, causes increased vascular permeability and smooth muscle contraction.

*noun*, immunology

Roitt Immunology

**histi(o)-**

relating to tissue.

*prefix*, medicine

Dorland Medical

**histiocyte**

macrophage located in tissue.

*noun*, anatomy

Dorland Medical

**histochemistry**

branch of histology dealing with the identification of chemical components in cells and tissues.

*noun*, biology

Dorland Medical

**histocompatibility**

the degree to which tissue from one organism will be tolerated by the immune system of another organism.

*noun*, immunology

Oxford Science

**histocompatibility antigens**

genetically determined antigens present on the surface of nucleated cells, including blood leucocytes.

*noun*, immunology

Larousse Science

**histocompatibility test**

procedure whereby donor and recipient are matched as closely as possible prior to tissue grafting in humans.

*noun*, immunology

Larousse Science

**histogenesis**

formation of new tissues.

*noun*, biology

Larousse Science

**histology**

the study and examination of the minute structure, composition and function of tissues.

*noun*, biology

Dorland Medical

**historical control**

control subjects who have been followed at some time in the past or for whom data are available through records who are used for comparison with subjects being treated concurrently.

*noun*, medicine

IRB Guidebook

Notes: The study is considered historically controlled when the present condition of subjects is compared with their own condition on a prior regimen or treatment.

**hives** *urticaria*

condition in which smooth, elevated, whitish

patches appear on the skin and itch intensely, as a result of taking drugs or certain foods, or as a reaction to the injection of serum, insect bites or the stings of plants.

*noun*, medicine

Larousse Science

Notes: Hives is the term most commonly used in the USA.

**Hodgkin's disease**

form of malignant lymphoma marked clinically by painless, progressive enlargement of lymph nodes, spleen, and general lymphoid tissue.

*noun*, medicine

Dorland Medical

**hollow fibre**

capillary tube of polymeric material produced by spinning a melted or dissolved polymer through an annular orifice.

*noun*, polymer science

Biomedical Engineering Handbook

Notes: Used in devices in which large surface areas of semi-permeable or selectively permeable materials are required, for example in oxygenators.

**homeostasis**

tendency for the internal environment of an organism to be maintained constant.

*noun*, biology

Larousse Science

**homocyclic**

compound which has a ring of atoms, all of the same type, in its molecules.

*noun*, chemistry

Oxford Science

**homogeneous**

1. of uniform quality, composition, or structure throughout.

*adjective*, general

Dorland Medical

2. mixture or solution comprised of two or more substances that are uniformly dispersed in each other.

*adjective*, material science

Szycher's Biomaterials

**homograft** *allograft*

tissue or an organ transplanted from one to another of the same species: e.g. from man to man.

*noun*, surgery

Black's Medical

**homologous series**

series of organic compounds, each member of which differs from the next by the insertion of a -CH<sub>2</sub>- group in the molecule.

*noun*, chemistry

**homopolymer**

1. polymer that is derived from a single monomer and consists of identical repeating units.

*noun*, polymer science

ISO

2. DNA or RNA strand whose nucleotides are all of the same kind.

*noun*, genetics

Larousse Science

**Hookes Law**

the basic statement of linear elasticity; that is the proportionality between stress, GREEK SYMBOL, and strain GREEK E, where the proportionality constant is Young's modulus.

*noun*, physics

Larousse Science

**hoop stress**

circumferential stress in a material of cylindrical dimensions subjected to internal or external pressure.

*noun*, engineering

Szycher's Biomaterials

**hormone**

chemical substance produced in the body which has a specific regulatory effect on the activity of certain cells or certain organs.

*noun*, medicine

Dorland Medical

**host**

1. organism that harbours or nourishes another organism (the parasite).

*noun*, biology

Dorland Medical

2. in molecular biology that structure in which a plasmid or virus can replicate.

*noun*, biology

Larousse Science

3. recipient of an organ or other tissue derived from a donor.

*noun*, medicine

4. recipient of an implanted device.

*noun*, medical device technology

Dorland Medical

**host response**

reaction of a living system to the presence of a material.

*noun*, biomaterials science

ESB Consensus Conference I

**hot isostatic pressing**

making a compact by application of heat as well as pressure.

*noun*, engineering

Larousse Science

**hot melt adhesive**

thermoplastic applied in molten state directly onto surfaces to be joined, which bond together as the melt solidifies.

*noun*, engineering

Larousse Science

**hot working**

the process of shaping metals by rolling, extrusion, forging etc. at temperatures above about 0.6

TSUBSCRIPT m italics.

*noun*, metallurgy

Larousse Science

**Howship's lacunae** (Howship's lacuna) *resorption*

*lacuna*

resorption lacunae in bone.

*noun*, anatomy

Heinemann Dental

**human immunodeficiency virus HIV.**

the retrovirus that causes AIDS in humans.

*noun*, medicine

Oxford Science

**human leucocyte antigen HLA.**

series of four gene loci (A,B,C, and D) in humans that code for separate loci in the MHC gene complex present on the surface of cell membranes.

*noun*, genetics

Oxford Science

Notes: They are important in determining the acceptance or rejection by the body of a tissue or organ transplant.

**human subjects**

individuals whose physiologic or behavioural characteristics and responses are the object of study in a research project.

*noun*, medicine

IRB Guidebook

Notes: Under the US federal regulations, human subjects are defined as: living individual(s) about whom an investigator conducting research obtains: (1) data through intervention or interaction with the individual; or (2) identifiable private information.

**human tissue**

any tissue derived from a human body, which is intended for transplantation to another human for the diagnosis, cure, mitigation, treatment, or prevention of any condition or disease, which is recovered, processed, stored, or distributed by methods that do not change tissue function or characteristic, and which is not currently regulated as a human drug, biological product, or medical device.

*noun*, regulatory affairs

CFR

Notes: Excludes kidney, liver, heart, lung, pancreas, or any other vascularised human organ; as well as semen or other reproductive tissue, human milk, and bone marrow.

**humanitarian use device HUD.**

medical device intended to benefit patients in the treatment or diagnosis of a disease or condition that affects or is manifested in fewer than 4,000 individuals in the United States per year.

*noun*, regulatory affairs

CFR

**humeral**

in vertebrates, pertaining to the region of the shoulder.

*adjective*, anatomy

Larousse Science

**humor**

any fluid or semi-fluid of the body.

*noun*, medicine

Dorland Medical

**humoral**

pertaining to extracellular fluid such as plasma and lymph.

*adjective*, immunology

Roitt Immunology

**humoral immunity**

acquired immunity in which the role of circulating antibodies is predominant.

*noun*, immunology

Dorland Medical

**Hunter-Schreger bands**

lines in tooth enamel.

*noun*, dentistry

Heinemann Dental

**hyaline**

descriptive of any tissue that is translucent and colourless, without obvious fibres or granules.

*adjective*, anatomy

Larousse Science

**hyaluronan** *hyaluronic acid*

glycosaminoglycan found in lubricating proteoglycans of synovial fluid, vitreous humour, cartilage, blood vessels, skin, and the umbilical cord, being a linear chain of about 2500 repeating disaccharide units.

*noun*, biology

Dorland Medical

**hyaluronate**

salt, anion, or ester of hyaluronic acid.

*noun*, biology

Dorland Medical

**hyaluronic acid** *hyaluronan*

a glycosaminoglycan found in lubricating proteoglycans of synovial fluid, vitreous humour, cartilage, blood vessels, skin, and the umbilical cord, being a linear chain of about 2500 repeating disaccharide units.

*noun*, biology

Dorland Medical

**hyaluronidase**

any of the enzymes that catalyse the hydrolysis of hyaluronic acid and similar glycosaminoglycans.

*noun*, biology

Dorland Medical

**hybrid**

1. offspring of a cross between two different strains, varieties, races or species.

*noun*, biology

Larousse Science

Notes:

Can also be adjective.

2. said of any new product that combines some of the characteristics of one existing class of product with those of a different existing class of product.

*adjective*, general

Williams

**hybrid artificial organ**

artificial organ that is a combination of viable cells and one or more biomaterials.

*noun*, medical device technology

ESB Consensus Conference I

**hybridisation** (hybridization)

1. the act or process of producing hybrids.

*noun*, biology

(hybridization)

2. formation of a heterokaryon by fusion of two somatic cells, usually of different species.

*noun*, genetics

Dorland Medical

(hybridization)

3. formation of a new organism by normal sexual

processes or by protoplast fusion.

*noun*, biology

Larousse Science

(hybridization)

4. procedure whereby orbitals of intermediate energy and desired directional character are constructed.

*noun*, chemistry

Dorland Medical

**hybridoma**

cell line obtained by the fusion of myeloma cell line, which is able to grow indefinitely in culture, with a normal antibody secreting B-cell.

*noun*, biology

Larousse Science

**hydr(o)-**

signifying either hydrogen or water.

*prefix*, general

Dorland Medical

**hydration**

absorption of or combination with water.

*noun*, chemistry

Dorland Medical

**hydrocarbon plastics**

plastics derived from monomers containing carbon and hydrogen only.

*noun*, polymer science

Szycher's Biomaterials

**hydrocephalus**

state of excessive accumulation of cerebrospinal fluid (CSF) within the ventricular system of the head due to a congenital or acquired disturbance of secretion, flow or absorption, usually resulting in a pathological increase in intracranial pressure (ICP).

*noun*, medicine

ASTM

**hydrocephalus shunt**

one-way pressure-activated or flow-controlling device or combination of devices intended to be surgically implanted in the body of a patient with hydrocephalus and designed to divert cerebrospinal fluid from a fluid compartment in the central nervous system or CNS (the cerebral ventricles or other site within the cerebrospinal fluid system) to an internal delivery site in another part of the body (internal shunt) or an external collection site (external shunt), for the purpose of relieving elevated intracranial pressure (ICP) or CSF volume.

*noun*, medical device technology

ASTM

**hydrocephalus shunt reflux**

flow of fluid within a hydrocephalus shunt towards the cerebral ventricles or cerebrospinal fluid system

*noun*, medical device technology

ASTM

**hydrocephalus shunt valved catheter**

an assembly or element of a shunt which provides a pathway for diversion of CSF to an internal

delivery site and contains one or more valves, and a significant portion of tubing for the fluid pathway.

*noun*, medical device technology  
ASTM

**hydrocephalus shunt, flow impedance device**

those components of a shunt assembly which, by virtue of their resistance properties, provide the principal means of controlling intracranial pressure or flow of cerebrospinal fluid, or both.

*noun*, medical device technology  
ASTM

**hydrocolloid**

1. colloid system in which water is the dispersion medium.

*noun*, chemistry  
Dorland Medical

2. type of dental impression material.

*noun*, dentistry  
Heinemann Dental

**hydrocortisone**

name given to natural or synthetic cortisol when it is used as a pharmaceutical.

*noun*, pharmacology  
Dorland Medical

**hydrogel**

polymeric material that exhibits the ability to swell in water and to retain a significant fraction (>20 percent) of water within its structure, but which will not dissolve in water.

*noun*, polymer science  
Szycher's Biomaterials

**hydrogen H.**

element symbol H, at. no. 1, (gas) most abundant element.

*noun*, chemistry  
Dorland Medical

**hydrogen bond**

a type of electrostatic interaction between electronegative atoms in one molecule and hydrogen atoms bound to electronegative atoms in another molecule.

*noun*, chemistry  
Oxford Science

**hydrogen embrittlement**

effect produced on metal by sorption of hydrogen during pickling, electroplating or other operations in which the ductility is considerably reduced.

*noun*, metallurgy  
Larousse Science

**hydrogen peroxide**

colourless or pale blue viscous unstable liquid, H SUBSCRIPT 2 O SUBSCRIPT 2.

*noun*, chemistry  
Oxford Science

**hydrolase**

one of the six main classes of enzymes, comprising those that catalyse the hydrolytic cleavage of a compound.

*noun*, biology  
Dorland Medical

**hydrolysate**

any compound produced by hydrolysis.

*noun*, chemistry  
Dorland Medical

**hydrolysis**

1. chemical reaction of a compound with water.

*noun*, chemistry  
Oxford Science

2. process by which a polymer undergoes degradation resulting from exposure to water, with or without effects due to other environmental factors.

*noun*, polymer science  
Williams

3. the cleavage of a compound by the addition of water, the hydroxyl group being incorporated in one fragment and the hydrogen atom in the other.

*noun*, chemistry  
Dorland Medical

**hydrophilic**

having an affinity for water.

*adjective*, chemistry  
Oxford Science

**hydrophilicity**

tendency of a material to attract and hold water.

*noun*, material science  
Biomedical Engineering Handbook

**hydrophobic**

not readily absorbing or interacting with water.

*noun*, chemistry  
Dorland Medical

**hydrophobicity**

tendency of a material to repel or avoid contact with water.

*noun*, material science  
Biomedical Engineering Handbook

**hydroureter**

distension of the ureter with urine or watery fluid, due to obstruction.

*noun*, medicine  
Dorland Medical

**hydroxide**

any compound containing a hydroxyl group.

*noun*, chemistry  
Dorland Medical

**hydroxy-**

indicates the presence of the univalent radical OH.

*prefix*, chemistry  
Dorland Medical

**hydroxyapatite**

1. hydrated calcium phosphate occurring widely in natural tissues such as enamel, bone, etc.

*noun*, biology  
Larousse Science

2. hydrated calcium phosphate, prepared by any one of several routes and existing in several different forms, that is used as a ceramic biomaterial.

*noun*, biomaterials science  
Williams

Notes: Sometimes referred to as hydroxylapatite.

**hydroxybutyrate**

salt or anionic form of hydroxybutyric acid.

*noun*, chemistry  
Dorland Medical

**hydroxybutyric acid**

any of several hydroxy derivatives of butyric acid.

*noun*, chemistry  
Dorland Medical

**hydroxyl group**

-OH. A monovalent group consisting of a hydrogen atom and an oxygen atom linked together.

*noun*, chemistry  
Larousse Science

**hydroxyproline**

1. hydroxylated form of proline.

*noun*, chemistry  
Dorland Medical

2. 4-hydroxy-pyrrole-2-carboxylic acid, an amino-acid formed by the post-translational hydroxylation of proline residues within protein molecules.

*noun*, biology  
Larousse Science

**hygienist**

specialist in hygiene.

*noun*, clinical practice  
Dorland Medical

**hygr(o)-**

denoting moisture.

*prefix*, general  
Dorland Medical

**hygroscopic**

denoting substances that have the tendency to spontaneously absorb moisture from the air.

*adjective*, chemistry  
Szycher's Biomaterials

**hyper-**

denoting abnormally increased or excessive.

*prefix*, general  
Dorland Medical

**hyperplasia**

overdevelopment of an organ or tissue, due to increased production of cells, normally giving an increased volume.

*noun*, medicine  
Heinemann Dental

**hyperplastic gingivitis**

gingival inflammation associated with chronic enlargement.

*noun*, dentistry  
Heinemann Dental

**hyperplastic inflammation**

inflammation leading to the formation of new connective tissue fibres.

*noun*, medicine  
Dorland Medical

**hypersensitivity**

excessive immune response which leads to undesirable consequences e.g. tissue or organ damage.

*noun*, immunology

Roitt Immunology

**hypertension**

persistently high arterial blood pressure.

*noun*, medicine  
Dorland Medical

Notes: It may have no known cause (essential, idiopathic, or primary) or may be associated with other diseases (secondary).

**hypertonic**

denoting a solution having greater osmotic pressure than the solution with which it is compared.

*adjective*, chemistry  
Dorland Medical

**hypertrophy**

enlargement or overgrowth of an organ or part due to an increased amount of work of that organ.

*noun*, medicine  
Dorland Medical

**hypervolaemia** (hypervolemia)

increase in the volume of circulating blood above the normal range.

*noun*, medicine  
Black's Medical

**hypo-**

denoting abnormally decreased.

*prefix*, medicine  
Dorland Medical

**hypocalcaemia** (hypocalcemia)

a serum concentration of calcium below the normal range (9-11 mg of calcium per 100 ml of serum.)

*noun*, medicine  
Black's Medical

**hypodermic**

under the skin.

*adjective*, medicine  
Heinemann Dental

**hypodermic injection**

injection into the subcutaneous tissues.

*noun*, medicine  
Dorland Medical

**hypodontia**

congenital absence of several teeth.

*noun*, dentistry  
Heinemann Dental

**hypoglycaemia** (hypoglycemia)

deficiency of glucose in the blood.

*noun*, medicine  
Dorland Medical

**hypoplasia**

incomplete development or underdevelopment of an organ or tissue.

*noun*, medicine  
Dorland Medical

**hypotension**

abnormally low blood pressure.

*noun*, medicine  
Dorland Medical

**hypothermic crystalloid cardioplegia**

arrest of myocardial contractions during cardiac

surgery through the use of lowered temperature.  
*noun*, surgery  
Dorland Medical

**hypovolaemia** (hypovolemia)  
reduced circulating blood volume.  
*noun*, medicine  
Black's Medical

**hypoxia**  
low blood tension of oxygen.  
*noun*, medicine  
Black's Medical

**hysteresis**  
1. time lag in the occurrence of two associated phenomena, as between cause and effect.  
*noun*, general  
2. in cardiac pacemaker terminology, the number of pulses per minute below the programmed pacing rate that the heart must drop in order to cause initiation of pacing.  
*noun*, medicine  
Dorland Medical

**iatrogenic**  
produced by the action of a doctor, or of medical treatment.  
*adjective*, medicine  
Heinemann Dental

**ibuprofen**  
non-steroidal anti-inflammatory drug used in the treatment of musculo-skeletal pain and rheumatoid arthritis.  
*noun*, pharmacology  
Larousse Science

**identifier**  
unique series of letters or numbers or any combination of these or a bar code that is assigned to a medical device by the manufacturer and that identifies it and distinguishes it from a similar device.  
*noun*, regulatory affairs  
Canadian Medical Devices

**idi(o)**  
relating to self; peculiar to a substance or organism.  
*prefix*, general  
Dorland Medical

**idiopathic**  
term applied to diseases to indicate that their cause is unknown.  
*adjective*, medicine  
Black's Medical

**Ig**  
immunoglobulin of any of the five classes: IgA, IgD, IgE, IgG, and IgM.  
*noun*, immunology  
Dorland Medical

**IgA**  
immunoglobulin involved in the activation of the alternative complement pathway, responsible for the main humoral defence mechanism against micro-organisms on mucosal surfaces.  
*noun*, immunology

Dorland Medical

**IgD**  
immunoglobulin present in only very low concentrations in blood, but present at the surface of B-lymphocytes where it functions as an antigen receptor.  
*noun*, immunology  
Larousse Science

**IgE**  
immunoglobulin, of molecular weight 190,000, which binds strongly to receptors on the surface of most cells and is involved in the mediation of immediate hypersensitivity reactions.  
*noun*, immunology  
Dorland Medical

**IgG**  
the major immunoglobulin in humans, of molecular weight 150,000, involved in the activation of classic and alternative complement pathways and opsonisation.  
*noun*, immunology  
Dorland Medical

**IgM**  
immunoglobulin, of molecular weight 900,000, involved in the activation of classic complement pathway and opsonisation.  
*noun*, immunology  
Dorland Medical

**ileostomy**  
surgical creation of an opening into the ileum, with a stoma on the abdominal wall.  
*noun*, surgery  
Dorland Medical

**ileus**  
intestinal obstruction.  
*noun*, medicine  
Dorland Medical

**iliac crest**  
the thickened, expanded upper border of the ilium.  
*noun*, anatomy  
Dorland Medical

**ilium**  
dorsal cartilage bone of the pelvic girdle.  
*noun*, anatomy  
Larousse Science

**image**  
general term to describe the visual representation of structural features of a cell, tissue, organ or organism by use of an appropriate microscopic, radiographic or photographic technique.  
*noun*, anatomy  
Williams

**image analysis**  
any computer-assisted technique for the objective or quantitative analysis of the details of an image.  
*noun*, physics  
Williams

**imaging**  
production of diagnostic images, e.g., radiography, ultrasonography, or scintillation photography.

*noun*, medicine  
Dorland Medical

**imide**

any compound containing the bivalent group, =NH, to which is attached only acid radicals.  
*noun*, chemistry  
Dorland Medical

**imido-**

prefix denoting the presence of the bivalent group =NH attached to two acid radicals.  
*adjective*, chemistry  
Dorland Medical

**immediate denture**

denture constructed for insertion immediately after the removal of the natural teeth.  
*noun*, dentistry  
Heinemann Dental

**immediate hypersensitivity**

antibody-mediated hypersensitivity characterised by release of mediators from sensitised mast cells.  
*noun*, immunology  
Dorland Medical

**immiscible**

said of substances that cannot be uniformly mixed or blended.  
*adjective*, chemistry  
Szycher's Biomaterials

**immune**

resistant to a disease because of the formation of humoral antibodies or the development of cellular immunity, or both.  
*noun*, immunology  
Dorland Medical

**immune complex**

complex of antibody bound to antigen which may also contain complement components.  
*noun*, immunology  
Roitt Immunology

**immune system**

complex system of cellular and molecular components having the primary function of distinguishing self from not self and of defence against foreign organisms or substances.  
*noun*, immunology  
Dorland Medical

**immunisation (immunization)**

process of rendering a subject immune, or of becoming immune.  
*noun*, immunology  
Dorland Medical

**immunity**

1. condition of being immune.  
*noun*, immunology  
2. heightened responsiveness to antigenic challenge that leads to more rapid binding or elimination of antigen than in the non-immune state.  
*noun*, medicine  
Dorland Medical

**immunoadjuvant**

non-specific stimulator of the immune response.  
*noun*, immunology  
Dorland Medical

**immunoabsorbent**

preparation of antigen attached to a solid support or antigen in an insoluble form, which adsorbs homologous antibodies from a mixture of immunoglobulins.  
*noun*, immunology  
Dorland Medical

**immunoabsorption**

method for removal of antibody or antigen by allowing it to bind to solid phase antigen or antibody.  
*noun*, immunology  
Roitt Immunology

**immunoassay**

quantitative determination of antigenic substances by serological means.  
*noun*, immunology  
Dorland Medical  
Notes: These techniques include immunofluorescence, radioimmunoassay, etc.

**immunochemistry**

study of the physico-chemical basis of immune phenomena and their interactions.  
*noun*, immunology  
Dorland Medical

**immunocompetence**

capacity to develop an immune response following exposure to antigen.  
*noun*, immunology  
Dorland Medical

**immunocompromised**

having the immune response attenuated by administration of immunosuppressive drugs, by irradiation, by malnutrition, and by certain disease processes.  
*adjective*, immunology  
Dorland Medical

**immunocytochemistry**

laboratory techniques of staining tissue sections using antibodies which specifically bind to particular cell proteins.  
*noun*, immunology  
Larousse Science  
Notes: When the enzymes are reacted with their substrates colour develops allowing the identification of individual cells within a tissue.

**immunodeficiency**

deficiency of the immune response due to hypoactivity or decreased numbers of lymphoid cells.  
*noun*, immunology  
Dorland Medical

**immunoelectrophoresis**

electrophoretic displacement of antigens or antibodies followed by immunodiffusion.  
*noun*, immunology  
Szycher's Biomaterials

**immunofluorescence**

technique for detection of cell or tissue-associated

antigens by the use of a fluorescently-tagged ligand (e.g. an anti-immunoglobulin conjugated to a fluorescein isothiocyanate.)  
*noun*, immunology  
Roitt Immunology

**immunogen**

any substance which elicits an immune response.  
*noun*, immunology  
Roitt Immunology

**immunogenicity**

property enabling a substance to provoke an immune response.  
*noun*, immunology  
Dorland Medical

**immunoglobulin Ig.**

family of proteins all of which have a similar basic structure, made up of light chains and heavy chains linked together by disulphide bonds so as to form a Y shaped molecule with two flexible arms.  
*noun*, immunology  
Larousse Science

**immunological means**

action in or on the body by stimulation and/or mobilisation of cells and/or products involved in a specific immune reaction.  
*noun*, regulatory affairs  
EU Guidance  
Notes: This definition is used in the context of the definition of a medicinal product.

**immunology**

scientific study of immunity and the defence mechanisms of the body.  
*noun*, immunology  
Larousse Science

**immunomodulation**

adjustment of the immune response to a desired level.  
*noun*, immunology  
Dorland Medical

**immunostimulation**

stimulation of an immune response, typically by the use of a vaccine.  
*noun*, immunology  
Dorland Medical

**immunosuppression**

artificial suppression of the immune response by the use of drugs which interfere with lymphocyte growth, by irradiation, or by the use of antibodies against lymphocytes.  
*noun*, immunology  
Larousse Science

**impact**

elastic or inelastic collision between bodies during which the rate of change of momentum is high, so that large contact forces are generated.  
*noun*, engineering  
Larousse Science

**impact resistance**

relative ability of materials to resist fracture under stresses applied at high speeds.  
*noun*, engineering

Szycher's Biomaterials

**impact strength**

measure of the resistance of materials to impact loading applied in an impact test.  
*noun*, engineering  
Larousse Science

**impacted tooth**

tooth so placed in the jaw that it cannot erupt.  
*noun*, dentistry  
Heinemann Dental

**impedance Z.**

the quantity that measures the opposition of a circuit to the passage of a current and therefore determines the amplitude of the current.  
*noun*, physics  
Oxford Science

**impermeable**

not permitting the passage of liquids or gas.  
*adjective*, material science  
Williams

**implant**

1. medical device made from one or more biomaterials that is intentionally placed within the body, either totally or partially buried beneath an epithelial surface.  
*noun*, medical device technology  
ESB Consensus Conference I
2. medical device that is placed into a surgically or naturally formed cavity of the human body if it is intended to remain there of a period of 30 days or more.  
*noun*, regulatory affairs  
CFR
3. to insert any object into a surgically or naturally formed site in the body, with the intention of leaving it there after the procedure is complete.  
*verb*, medical device technology  
Williams

**implant abutment**

that part of an oral implant which protrudes through the gingiva into the mouth, and on which a denture is supported.  
*noun*, dentistry  
Heinemann Dental

**implant dentistry** *dental implantology, oral implantology*

branch of dentistry concerned with the design and use of prostheses involving some form of oral implant surgically inserted into hard or soft tissue within the mouth.  
*noun*, dentistry  
Heinemann Dental

**implant denture**

artificial denture supported by a framework fastened to the alveolar process beneath the periosteum.  
*noun*, dentistry  
Heinemann Dental

**implantable cardioverter defibrillator**

implantable device that detects sustained ventricular tachycardia or fibrillation and

terminates it by shock or shocks delivered directly to the atrium.

*noun*, medical device technology  
Dorland Medical

#### **implantable clip**

device intended to join internal tissues in order to aid healing.

*noun*, medical device technology  
Szycher's Medical Devices

#### **implantable device**

any device which is intended to be totally introduced into the human body or to replace an epithelial surface or the surface of the eye by surgical intervention, which is intended to remain in place after the procedure, or which is intended to be partially introduced into the human body through surgical intervention and intended to remain in place after the procedure, for at least 30 days.

*noun*, regulatory affairs  
EU Directive

#### **implantable staple**

staple-like device intended to connect internal tissues in order to aid in healing.

*noun*, medical device technology  
CFR

#### **implantation**

1. insertion of an organ or tissue in a new site in the body.

*noun*, medicine

2. process of attachment of the blastocyst to the epithelial lining of the uterus, its penetration through the epithelium, and, in humans, its embedding in the compact layer of the endometrium, occurring six or seven days after fertilisation of the ovum.

*noun*, embryology

3. insertion or grafting into the body of biological, living or inert material.

*noun*, medicine

Dorland Medical

4. process by which foreign ions are inserted into the lattice of a material at its surface in order to modify the surface properties.

*noun*, material science

Williams

#### **implantation test**

test to assess the local pathological effects on living tissue, at both the gross level and microscopic level, of a sample of a material or final product that is surgically implanted or placed into an implant site or tissue appropriate to the intended application.

*noun*, biomaterials science

ISO

Notes: These tests should be appropriate for the route and duration of contact. For a material, these tests are equivalent to sub-chronic toxicity tests if systemic effects are also investigated.

#### **implantology**

science and practice of placing implants within the body.

*noun*, medicine

Heinemann Dental

#### **impotence**

lack of copulative power in the male due to failure to initiate an erection or maintain an erection until ejaculation.

*noun*, medicine  
Dorland Medical

#### **impression**

1. any dent or hollow in a soft substance.

*noun*, general

Heinemann Dental

2. negative imprint of an object made in some material that later solidifies.

*noun*, general

Dorland Medical

#### **impression compound**

material used for taking dental impressions, and composed of fatty acids, shellac, glycerine, and some form of filler.

*noun*, dentistry

Heinemann Dental

#### **impression coping**

in implant dentistry, a thin covering designed to fit an implant abutment and connect it to the prosthesis or superstructure.

*noun*, dentistry

Heinemann Dental

#### **impression material**

material intended to be placed on a pre-formed impression tray and used to reproduce the structure of a patient's teeth and gums, in order to provide models for study and for production of restorative prosthetic devices.

*noun*, dentistry

CFR

#### **impression tray**

metal receptacle in which wax or plastic impression material is placed when taking mouth impressions.

*noun*, dentistry

Heinemann Dental

#### **impurity**

1. substance that is present in small amounts in a material, that makes no proactive contribution to the properties of the material, its presence being accidental or unavoidable.

*noun*, material science

Williams

2. small proportion of foreign matter added to a pure semiconductor to obtain the required type of conduction and conductivity for solid-state devices.

*noun*, physics

Larousse Science

#### **in situ hybridisation** (*in situ* hybridization)

molecular hybridisation used to analyse prepared cells or histologic sections *in situ* in order to analyse the intracellular or intrachromosomal distribution, transcription, or other characteristics of specific nucleic acids.

*noun*, biology

Dorland Medical

#### **in vitro**

1. within a glass.

*adverb*, general

Dorland Medical

Notes: The literal definition.

2. literally, "in glass" or "test tube;" used to refer to processes that are carried out outside the living body, usually in the laboratory, as distinguished from *in vivo*.

*noun*, biology

IRB Guidebook

3. an artificial biological environment that attempts to simulate some of the features of a physiological location.

*adverb*, biology

Williams

4. pertaining to a situation which involves the experimental reproduction of biological processes in the more easily defined environment such as a culture vessel.

*adjective*, biology

Larousse Science

***in vitro* diagnostic device**

a medical device that is intended to be used *in vitro* for the examination of specimens taken from the body.

*noun*, regulatory affairs

Canadian Medical Devices

***in vitro* diagnostic medical device *in vitro* diagnostic product**

any medical device which is a reagent, reagent product, calibrator, control material, kit, instrument, apparatus, equipment, or system, whether used alone or in combination, intended by the manufacturer to be used *in vitro* for the examination of specimens, including blood and tissue donations, derived from the human body, solely or principally for the purpose of providing information concerning a physiological or pathological state or concerning a congenital abnormality, or to determine the safety and compatibility with potential recipients, or to monitor therapeutic measures.

*noun*, regulatory affairs

EU Directive

***in vitro* diagnostic product *in vitro* diagnostic medical device**

any reagent, instrument, or system intended for use in the diagnosis of disease or other conditions, including a determination of the state of health, in order to cure, mitigate, treat, or prevent disease or its sequelae.

*noun*, regulatory affairs

CFR

***in vitro* fertilisation (*in vitro* fertilization) IVF.**

technique in which an ovum is fertilised by sperm outside the body.

*noun*, embryology

Larousse Science

***in vitro* transcription**

use of a laboratory medium without the presence of cells to obtain specific mRNA production for a DNA sequence.

*noun*, biology

Larousse Science

***in vivo***

1. within the living body.

*adverb*, general

Dorland Medical

2. pertaining to a biological process occurring within the living organism or cell.

*adjective*, biology

Larousse Science

**inactivation**

1. destruction of biological activity, as of a virus, by the action of heat or other agent.

*noun*, biology

Dorland Medical

2. process by which the risk of viruses and transmissible agents causing infection or pathogenic reaction is significantly reduced.

*noun*, regulatory affairs

CEN

Notes: The effectiveness of the process should be expressed in mathematical terms.

**incisal**

cutting.

*adjective*, dentistry

Heinemann Dental

**incisal angle**

any angle formed by the junction of an incisal edge or cavity wall, in an anterior tooth, with any other tooth surface or cavity wall.

*noun*, dentistry

Heinemann Dental

**incisal edge**

the edge of a tooth that cuts.

*noun*, dentistry

Heinemann Dental

**incised wound**

wound in a tissue caused by a cutting instrument.

*noun*, surgery

Dorland Medical

**incision**

cut or a wound made by cutting with a sharp instrument.

*noun*, surgery

Dorland Medical

**incisor**

any of the four front teeth in either jaw.

*noun*, dentistry

Dorland Medical

**inclusion**

particle of an alien substance retained in a solid material.

*noun*, material science

Larousse Science

**inclusion body**

any particulate body found in the cells of tissue infected with a virus.

*noun*, biology

Larousse Science

**incompetence**

1. inability to perform proper function.

*noun*, general

2. condition in which a heart valve is unable to

close properly.  
*noun*, medicine  
Larousse Science

**incontinence**

inability to control excretory functions.  
*noun*, medicine  
Dorland Medical

**incubation**

1. development of the embryo in the eggs of oviparous animals.  
*noun*, embryology
2. development of an infectious disease from time of the entrance of the pathogen to the appearance of clinical symptoms.  
*noun*, medicine
3. provision of proper conditions for growth and development, as for bacterial or tissue cultures.  
*noun*, biology
4. maintenance of an artificial environment for an infant, especially a premature infant.  
*noun*, medicine  
Dorland Medical

**incubation period**

period intervening between the infection of a host by bacteria or viruses and the appearance of the first symptoms.  
*noun*, biology  
Larousse Science

**incus**

one of the small bones in the ear.  
*noun*, anatomy  
Heinemann Dental

**independent variable**

conditions of an experiment that are systematically manipulated by the investigator.  
*noun*, medicine  
IRB Guidebook

**indium In.**

element, symbol In, at. no. 49, soft, silvery-white metal.  
*noun*, chemistry  
Dorland Medical

**indwelling**

pertaining to a catheter or other tube left within an organ or body passage for drainage, to maintain patency, or for the administration of drugs or nutrients.  
*adjective*, medical device technology  
Dorland Medical

**indwelling catheter**

catheter held in position in the urethra.  
*noun*, medical device technology  
Dorland Medical

**inert**

not readily changed by chemical means.  
*adjective*, chemistry  
Larousse Science

**inertia**

the property of a body, proportional to its mass, which opposes a change in the motion of the body.  
*noun*, physics

Larousse Science

**infarct**

localised area of ischemic necrosis produced by occlusion of the arterial supply or the venous drainage of the part.  
*noun*, medicine  
Dorland Medical

**infection**

1. infectious disease.  
*noun*, medicine
2. invasion and multiplication of micro-organisms in body tissues, especially that causing local cellular injury due to competitive metabolism, toxins, intracellular replication, or antigen-antibody response.  
*noun*, medicine  
Dorland Medical

**infectious**

pertaining to diseases caused by micro-organisms.  
*adjective*, medicine  
Williams

**infectious endocarditis** *bacterial endocarditis*

serious bacterial infection of the endocardium overlying the heart valves, particularly if they are diseased or altered.  
*noun*, medicine  
Larousse Science

**infective agent**

strain of any of the classes of micro-organism that is capable of causing infection.  
*noun*, medicine  
Williams

**infectivity**

extent to which an object is infectious.  
*noun*, medicine  
Williams  
Notes: Used in the risk assessment of animal-to-human transmission of disease associated with drugs or devices of animal origin.

**inferior**

situated below.  
*adjective*, anatomy  
Heinemann Dental

**inferolateral**

situated below and on one side.  
*adjective*, anatomy  
Heinemann Dental

**inferomedian**

situated below and in the middle.  
*adjective*, anatomy  
Heinemann Dental

**inferoposterior**

situated both below and behind.  
*adjective*, anatomy  
Heinemann Dental

**infiltration**

diffusion or accumulation in a tissue or cells of substances not normal to it or in amounts in excess of the normal.  
*noun*, medicine  
Dorland Medical

**inflammation**

tissue response to trauma, characterised by increased blood flow and entry of leucocytes into the tissues, resulting in swelling, redness, elevated temperature and pain.

*noun*, immunology  
Roitt Immunology

**inflammatory cell**

generic term used to describe any of the cells specifically attracted to the site of injury, irritation or foreign object as part of the defensive response.

*noun*, biology  
Williams

**inflammatory reaction** *inflammatory response*

that part of the response of a host to the implantation of, or attachment to, a medical device that is characterised by the presence of inflammatory cells.

*noun*, biomaterials science  
Williams

**inflammatory response** *inflammatory reaction*

that part of the response of a host to the implantation of, or attachment to, a medical device that is characterised by the presence of inflammatory cells.

*noun*, biomaterials science  
Williams

**inflation valve**

valve attached to an inflation system for inflating and deflating a cuff.

*noun*, medical device technology  
ASTM

**informed consent**

a person's voluntary agreement, based upon adequate knowledge and understanding of relevant information, to participate in research or to undergo a diagnostic, therapeutic, or preventive procedure.

*noun*, medicine  
CFR

Notes: In giving informed consent, subjects may not waive or appear to waive any of their legal rights, or release or appear to release the investigator, the sponsor, the institution or agents thereof from liability for negligence.

**infra-**

signifying beneath, within.

*prefix*, anatomy  
Heinemann Dental

**infraorbital**

lying beneath the floor of the orbit.

*noun*, ophthalmology  
Heinemann Dental

**infrared radiation IR.**

electromagnetic radiation with wavelengths longer than that of red light but shorter than radiowaves, i.e. radiation in the wavelength range 0.7 micrometer to 1 millimetre.

*noun*, physics  
Oxford Science

**infrared spectroscopy IR spectroscopy.**

routine analytical tool for detection of functional groups by infrared absorption in molecules.

*noun*, chemistry  
Larousse Science

**infrastructure**

that part of a dental implant below the soft tissues and providing retention.

*noun*, dentistry  
Heinemann Dental

**infusion**

intravenous or subcutaneous injection of one of a variety of therapeutic solutions, such as saline, glucose, or gum acacia, in the treatment of plasma electrolyte imbalance.

*noun*, clinical practice  
Black's Medical

**infusion pump**

device used to pump fluids into a patient in a controlled manner.

*noun*, medical device technology  
Szycher's Biomaterials

**ingestion**

taking of food, drugs, etc., into the body by mouth.

*noun*, biology  
Dorland Medical

**inguinal**

relating to the area of the body where the lower part of the abdomen meets the upper thigh.

*adjective*, anatomy  
Black's Medical

**inhalation** *inspiration*

the drawing of air or other substances into the lungs.

*noun*, biology  
Dorland Medical

**inherent immunity**

immunity determined by the genetic constitution of the individual.

*noun*, immunology  
Dorland Medical

**inherent thrombogenicity**

reaction-controlled thrombogenicity of the surface of a material.

*noun*, biomaterials science  
ESB Consensus Conference I

**inhibition**

1. arrest or restraint of a process.

*noun*, general  
Dorland Medical

2. reduction in the rate of a catalysed reaction by inhibitors.

*noun*, chemistry  
Oxford Science

**inhibitor**

1. any substance that interferes with a chemical reaction, growth, or other biologic activity.

*noun*, chemistry  
Dorland Medical

2. compound that retards or stops an undesired chemical reaction, such as polymerisation, oxidation, or corrosion.

*noun*, chemistry  
Szycher's Biomaterials

3. effector that reduces the catalytic activity of an enzyme.

*noun*, biology  
Dorland Medical

4. substance which reduces or prevents some metabolic or physiological process.

*noun*, biology  
Larousse Science

#### **initiation**

1. the creation of a small alteration in the genetic coding of a cell by a low level of exposure to a carcinogen, priming the cell for neoplastic transformation upon later exposure to a carcinogen or a promoter.

*noun*, biology  
Dorland Medical

2. the first phase of polymerisation.

*noun*, polymer science  
Larousse Science

#### **initiator**

1. agent necessary to cause a reaction to commence.

*noun*, chemistry  
Szycher's Biomaterials

2. additive used to cause a resin or elastomer to react with itself in order to increase molecular weight.

*noun*, polymer science  
ASTM

#### **injection**

forcing of a liquid into a part, as into the subcutaneous tissues, the vascular tree, or an organ.

*noun*, clinical practice  
Dorland Medical

#### **inlay**

type of tooth filling which is cast to fit the prepared tooth cavity and cemented in position.

*noun*, dentistry  
Heinemann Dental

#### **innate**

inborn; hereditary; congenital.

*adjective*, biology  
Dorland Medical

#### **innate immunity**

immunity which is not intrinsically affected by prior contact with antigen, i.e. all aspects of immunity not directly mediated by lymphocytes.

*noun*, immunology  
Roitt Immunology

#### **innervation**

distribution or supply of nerves to a part.

*noun*, anatomy  
Dorland Medical

#### **innominate artery**

short artery that branches from the aorta to divide into the subclavian artery and the right carotid artery.

*noun*, anatomy  
Oxford Science

#### **inoculation**

introduction of micro-organisms, infective material, serum, or other substances into tissues of living organisms, or culture media.

*noun*, medicine  
Dorland Medical

#### **inoculum**

material used in inoculation.

*noun*, medicine  
Dorland Medical

#### **inoperable**

untreatable by surgery.

*adjective*, surgery  
Dorland Medical

#### **inorganic polymer**

polymer whose chains are composed of atoms other than carbon.

*noun*, polymer science  
Larousse Science

#### **insertion**

1. the act of placing something in.

*noun*, general

2. point of attachment of a muscle to the part which it moves.

*noun*, anatomy  
Heinemann Dental

#### **inspiration** *inhalation*

drawing of air into the lungs.

*noun*, biology  
Dorland Medical

#### **institutional review board** *institutional review committee* **IRB.**

any board, committee, or other group formally designated by an institution to review biomedical research involving subjects and established, operated, and functioning in conformance with prescribed regulations.

*noun*, regulatory affairs  
CFR

#### **institutional review committee** *institutional review board*

any board, committee, or other group formally designated by an institution to review biomedical research involving subjects and established, operated, and functioning in conformance with prescribed regulations.

*noun*, regulatory affairs  
CFR

#### **insulation**

1. any means for confining as far as possible a transmissible phenomenon (e.g. electricity, heat, sound, vibration) to a particular channel or location in order to obviate or minimise loss, damage, or annoyance.

*noun*, general  
Larousse Science

2. any structure suitable for the prevention of transmission of electricity or heat.

*noun*, material science  
Williams

#### **insulator**

substance that is a poor conductor of heat and

electricity.  
*noun*, material science  
Oxford Science

**insulin**

protein hormone, secreted by the GERMAN B cells of the islets of Langerhans in the pancreas, that promotes the uptake of glucose by body cells.  
*noun*, biology  
Oxford Science

**insulin dependent diabetes**

diabetes mellitus, a metabolic disorder which gives rise to an excess of sugar in the blood.  
*noun*, medicine  
Larousse Science

**integrin**

any of a family of heterodimeric cell adhesion receptors, each consisting of an (greek fish symbol) and B(Greek) polypeptide chain, that mediate cell-to-cell and cell-to-extracellular matrix interactions.  
*noun*, biology  
Dorland Medical

**integument**

covering layer of tissue.  
*noun*, anatomy  
Larousse Science

**intellectual property**

term covering patents, registered designs, design right, copyright, confidential information and moral rights.  
*noun*, legal  
Larousse Science

**intended purpose**

the use for which a medical device is intended, according to the data supplied by the manufacturer on the labelling, in the instructions for use and/or in promotional materials.  
*noun*, regulatory affairs  
EU Directive

**intended use**

the objective intent of the person legally responsible for the labelling of a medical device, evidenced by labelling claims, advertising matter or oral or written statements.  
*noun*, regulatory affairs  
CFR

**inter-**

between.  
*prefix*, general  
Dorland Medical

**interarticular**

between articular surfaces.  
*adjective*, anatomy  
Heinemann Dental

**interarticular disc prosthesis** *interpositional implant*

device that is intended to be an interface between the natural articulating surface of the mandibular condyle and glenoid fossa.  
*noun*, medical device technology  
CFR

**interatomic bond** *interatomic force*

interactions between atoms in molecules or materials.  
*noun*, chemistry  
Larousse Science

**interatomic force** *interatomic bond*

interactions between atoms in molecules or materials.  
*noun*, chemistry  
Larousse Science

**intercellular**

between cells.  
*adjective*, anatomy  
Larousse Science

**intercostal**

between the ribs.  
*adjective*, anatomy  
Larousse Science

**intercrystalline fracture**

fractures in crystalline materials that follow the crystal boundaries instead of passing through the crystals.  
*noun*, material science  
Larousse Science

**intercurrent**

occurring during and modifying the course of another disease.  
*adjective*, medicine  
Dorland Medical

**interdental**

between the teeth.  
*adjective*, dentistry  
Heinemann Dental

**interdental canal** *Hirschfeld canal*

one of the tubular canals or grooves occurring in the alveolar bone structure of the maxilla and of the mandible, through which pass anastomosing blood vessels.  
*noun*, anatomy  
Heinemann Dental

**interdental wire**

wire passed round several teeth on each side of a fracture of the jaw in order to immobilise the jaw.  
*noun*, dentistry  
Heinemann Dental

**interdigitating cell**

bone marrow-derived cell found in lymphoid tissues where they interdigitate with T lymphocytes.  
*noun*, biology  
Larousse Science

**interface**

sharp contact boundary between two substances, materials, or phases, either or both of which may be solid, liquid or gaseous.  
*noun*, material science  
Larousse Science

**interfacial polymerisation**

polymerisation reaction occurring at the interfacial boundary of two solutions.

*noun*, polymer science  
Szycher's Biomaterials

**interference fringe**

alternate light and dark bands formed when two beams of monochromatic light having a constant phase relation overlap and illuminate the same portion of a screen.

*noun*, physics  
Larousse Science

**interference microscopy**

optical microscopic method for examining material or tissue specimens that utilises interference phenomena.

*noun*, physics  
Larousse Science

**interferon**

any of a family of glyco-proteins, production of which can be stimulated by viral infection, by intracellular parasites, and by bacteria and bacterial endotoxins, that exert antiviral activity and have immunoregulatory functions.

*noun*, biology  
Dorland Medical

**intergranular corrosion**

corrosion in a polycrystalline mass of metal, taking place preferentially at the boundaries between the grains.

*noun*, metallurgy  
Larousse Science

**interleukin IL.**

designation for some of the cytokines secreted by leucocytes.

*noun*, immunology  
Roitt Immunology

**interleukin-1 IL-1.**

molecule secreted by activated macrophages.

*noun*, immunology  
Larousse Science

**interleukin-10 IL-10.**

cytokine produced by lymphocytes, keratinocytes and macrophages, which suppresses macrophage activation, enhances Ig secretion by and proliferation of B lymphocytes.

*noun*, immunology  
Larousse Science

**interleukin-11 IL-11.**

cytokine produced by stromal fibroblasts.

*noun*, immunology  
Larousse Science

**interleukin-12 IL-12.**

cytokine produced by B lymphocytes and macrophages, which induces the differentiation of T helper cells and natural killer cells.

*noun*, immunology  
Larousse Science

**interleukin-2 IL-2.**

growth factor for T lymphocytes made by T lymphocytes which have been activated by IL-1 and a mitogenic agent.

*noun*, immunology  
Larousse Science

**interleukin-3 IL-3.**

cytokine made by activated T lymphocytes which acts to stimulate growth and differentiation of the progenitors of all haematopoietic cells.

*noun*, immunology  
Larousse Science

**interleukin-4 IL-4.**

cytokine made by activated T lymphocytes which causes resting B lymphocytes to divide.

*noun*, immunology  
Larousse Science

**interleukin-5 IL-5.**

cytokine produced by T lymphocytes and mast cells.

*noun*, immunology  
Larousse Science

**interleukin-6 IL-6.**

cytokine produced by T lymphocytes, monocytes/macrophages, fibroblasts, hepatocytes, which induces growth and differentiation of T and B lymphocytes, hepatocytes, keratinocytes and nerve cells.

*noun*, immunology  
Larousse Science

**interleukin-7 IL-7.**

cytokine produced by bone marrow stromal cells and foetal liver cells, which supports the growth of B lymphocyte precursor cells and T lymphocytes.

*noun*, immunology  
Larousse Science

**interleukin-8 IL-8.**

cytokine produced by a wide variety of cells including lymphocytes, monocytes, fibroblasts, keratinocytes, neutrophils and epithelial cells and is chemotactic for neutrophil granulocytes.

*noun*, immunology  
Larousse Science

**interleukin-9 IL-9.**

cytokine produced by T lymphocytes that enhances T lymphocyte growth and mast cell activity.

*noun*, immunology  
Larousse Science

**intermaxillary**

between the maxillae.

*adjective*, dentistry  
Heinemann Dental

**intermaxillary fixation**

method of immobilising the mandible by fastening it to the maxilla.

*noun*, dentistry  
Heinemann Dental

**intermediate**

1. starting point for manufacture of materials or products, but excluding raw material.

*noun*, chemistry

2. short-lived species in a chemical reaction.

*noun*, chemistry  
Larousse Science

**intermetallic compound**

compound consisting of two or more metallic elements present in definite proportions in an

alloy.  
*noun*, metallurgy  
Oxford Science

**intermittent claudication**

pain, tension, and weakness in the legs on walking, which intensifies to produce lameness and is relieved by rest, seen in occlusive arterial disease.  
*noun*, medicine  
Dorland Medical

**International Standards Organization ISO.**

main international body setting standards by agreement with national standards bodies.  
*noun*, regulatory affairs  
Larousse Science

**interocclusal clearance**

the slight gap between the upper and lower teeth when the mandible is at rest.  
*noun*, dentistry  
Heinemann Dental

**interphase**

the interval between two successive cell divisions, during which the chromosomes are not individually distinguishable.  
*noun*, genetics  
Dorland Medical

**interpositional implant** *interarticular disc prosthesis*

device that is intended to be an interface between the natural articulating surface of the mandibular condyle and glenoid fossa.  
*noun*, medical device technology  
CFR

**interproximal**

between two adjoining spaces.  
*adjective*, anatomy  
Dorland Medical

**interrupted suture**

wound closure in which each stitch is made with a separate piece of material.  
*noun*, surgery  
Dorland Medical

**interstice**

1. narrow gap or small space between things that are already close together.  
*noun*, general  
Williams  
2. space between atoms in a defined crystal lattice where other atoms can be inserted.  
*noun*, material science  
Larousse Science  
Notes: Usually seen in a close-packed lattice of a metallic element where atoms of another element are inserted between those of the parent element, giving rise to considerable lattice strain.

**interstitial**

relating to or situated within the interstices of a part or of tissue.  
*adjective*, biology  
Heinemann Dental

**interstitial fluid**

extracellular fluid within tissue spaces which is not

lymph, plasma or transcellular fluid.  
*noun*, biology  
Heinemann Dental

**interstitial solid solution**

type of solid solution formed in alloys when there is a large difference in relative atomic sizes of the constituent elements that enables the solute atoms to take up positions within the interstices of the crystal lattice of the solvent.  
*noun*, metallurgy  
Larousse Science

**intestine**

part of the alimentary canal extending from the pyloric opening of the stomach to the anus.  
*noun*, anatomy  
Dorland Medical

**intra aortic ballon**

device consisting of an inflatable balloon, which is placed in the aorta to improve cardiac function.  
*noun*, medical device technology  
Szycher's Biomaterials

**intra-**

signifying within.  
*prefix*, general  
Heinemann Dental

**intraarterial**

1. within an artery.  
*adjective*, anatomy  
Heinemann Dental  
2. route of administration of a drug or device into an artery.  
*adjective*, medicine  
Szycher's Biomaterials

**intraarticular**

1. within a joint.  
*adjective*, anatomy  
Heinemann Dental  
2. route of administration of a drug or device into a joint.  
*adjective*, medicine  
Szycher's Biomaterials

**intra buccal**

within the cheek, or within the oral cavity.  
*adjective*, dentistry  
Heinemann Dental

**intracardiac**

route of administration of a drug or device into the heart.  
*adjective*, medicine  
Szycher's Biomaterials

**intracardiac patch**

fabric placed in the heart and used to repair septal defects, to patch grafting, to repair tissue and to buttress sutures.  
*noun*, medical device technology  
Szycher's Medical Devices

**intracellular**

occurring within a cell or cells.  
*adverb*, anatomy  
Heinemann Dental

**intracellular fluid**

portion of the total body water with its dissolved solutes which are within the cell membranes.

*noun*, anatomy  
Dorland Medical

**intracoronal**

within the tooth crown.

*adjective*, dentistry  
Heinemann Dental

**intracranial**

within the cranium.

*adjective*, anatomy  
Heinemann Dental

**intracranial aneurysm clip**

device introduced surgically to occlude the blood inlet into an intracranial aneurysm with the intention that it remain within the body following surgery.

*noun*, medical device technology  
ASTM

**intractable**

resistant to cure, relief, or control.

*adjective*, clinical practice  
Dorland Medical

**intracutaneous injection**

injection made into the corium or substance of the skin.

*noun*, medicine  
Dorland Medical

**intracutaneous reactivity test**

tests to assess the localised reaction of tissue to medical device extracts.

*noun*, biomaterials science  
ISO

Notes: These tests are applicable where determination of irritation by dermal or mucosal tests are inappropriate (e.g. devices having access to the blood path). These test may also be useful where extractables are hydrophobic.

**intra lingual**

within the tongue.

*adjective*, dentistry  
Heinemann Dental

**intra maxillary**

within one jaw.

*adjective*, dentistry  
Heinemann Dental

**intra medullary**

within the bone marrow.

*adjective*, anatomy  
Heinemann Dental

**intra medullary fixation**

method of uniting the ends of a fractured bone by means of a metal pin placed within the bone marrow cavity.

*noun*, surgery  
Heinemann Dental

**intra medullary fixation rod**

implantable medical device that consists of a rod that is inserted into the medullary (bone marrow) canal of long bones for the fixation of fractures.

*noun*, medical device technology

CFR

**intra membranous**

within a membrane.

*noun*, anatomy  
Heinemann Dental

**intra muscular**

1. within the muscular substance.

*adjective*, anatomy  
Dorland Medical

2. route of administration of a drug or device into the muscle.

*adjective*, medicine  
Szycher's Biomaterials

**intra nasal**

route of administration of a drug or device through the nose.

*adjective*, medicine  
Szycher's Biomaterials

**intra ocular**

route of administration of a drug or device into the eye.

*adjective*, ophthalmology  
Szycher's Biomaterials

**intra ocular fluid**

non-gaseous fluid intended to be introduced into the eye to aid performance of surgery, such as to maintain anterior chamber depth, preserve tissue integrity, protect tissue from surgical trauma, or function as a tamponade during retinal reattachment.

*noun*, ophthalmology  
CFR

**intra ocular gas**

gaseous fluid intended to be introduced into the eye to place pressure on a detached retina.

*noun*, ophthalmology  
CFR

**intra ocular lens**

device made of transparent materials intended to be implanted to replace the natural lens of an eye.

*noun*, ophthalmology  
CFR

**intra operative**

occurring during a surgical operation.

*adjective*, surgery  
Dorland Medical

**intra oral**

within the oral cavity.

*adjective*, dentistry  
Heinemann Dental

**intra osseous**

1. within bone.

*adjective*, anatomy  
Heinemann Dental

2. route of administration of a drug or device into a bone.

*adjective*, medicine  
Szycher's Biomaterials

**intra osseous fixation screw**

device in the form of a screw or screws intended to

be inserted into fractured jaw bone segments to prevent their movement.

*noun*, dentistry  
CFR

**intraosseous fixation wire**

device in the form of a wire or wires intended to be inserted into fractured jaw bone segments to prevent their movement.

*noun*, dentistry  
CFR

**intrathecal**

1. within a sheath; through the theca of the spinal cord in to the subarachnoid space.

*adjective*, anatomy  
Dorland Medical

2. route of administration of a drug or device into the spine.

*adjective*, medicine  
Szycher's Biomaterials

**intrauterine contraceptive device IUD.**

device used to prevent pregnancy, placed high in the uterine fundus with a string extending from the device through the cervical os into the vagina

*noun*, medical device technology  
CFR

**intravascular**

within a vessel or vessels.

*adjective*, anatomy  
Heinemann Dental

**intravascular catheter**

tubular device that is inserted into the vascular system for short-term use (fewer than 30 days) to sample blood, monitor blood pressure, or administer fluids intravenously.

*noun*, medical device technology  
Szycher's Medical Devices

**intravenous**

within or into a vein.

*adjective*, medicine  
Heinemann Dental

**intravenous injection**

injection made into a vein.

*noun*, medicine  
Dorland Medical

**intrinsic**

1. belonging to an object itself without the influence of anything external.

*adjective*, general  
Williams

2. situated entirely within or pertaining exclusively to a part.

*noun*, biology  
Dorland Medical

**intrusion**

distance of flow of the mixture into a standard mould under load.

*noun*, engineering  
ASTM

**intubation**

insertion of a tube into a body canal or hollow organ.

*noun*, medicine

Dorland Medical

**invaginate**

to fold back one part of a tube or other tissue so that it is enclosed within another part of itself.

*verb*, medicine  
Heinemann Dental

**invasive**

involving puncture of the skin or insertion of an instrument or foreign material into the body.

*adjective*, medicine  
Dorland Medical

**invasive device**

1. device which, in whole or in part, penetrates inside the body, either through a body orifice or through the surface of the body.

*noun*, regulatory affairs  
EU Directive

2. medical device that is intended to come into contact with the surface of the eye or penetrate the body, either through a body orifice or through the body surface.

*noun*, regulatory affairs  
Canadian Medical Devices

**inversion**

stretch of chromosome that has been turned round so that the order of the nucleotides in the DNA is reversed.

*noun*, genetics  
Larousse Science

**invest**

to pack in investment material, as in the construction of artificial dentures, in the process of investment casting.

*verb*, material science  
Heinemann Dental

**investigational device**

a device, including a transitional device, that is the object of an investigation.

*noun*, regulatory affairs  
CFR

**investigational device exemptions IDE.**

exemptions from certain regulations found in the Medical Device Amendments that allow shipment of unapproved devices for use in clinical investigations

*noun*, regulatory affairs  
CFR

**investigator**

1. individual who actually conducts a clinical investigation.

*noun*, regulatory affairs  
CFR

2. the scientist or scholar with primary responsibility for the design and conduct of a research project.

*noun*, general  
IRB Guidebook

**investment**

material in which a denture, tooth, crown, or model for a dental restoration is enclosed for casting.

*noun*, dentistry  
Dorland Medical

**investment casting** *lost wax casting*  
method of casting in which a wax pattern of the desired object is surrounded by a refractory material, the wax eliminated by heat and metal poured into the resulting space.

*noun*, engineering  
Larousse Science

**investment material**  
any refractory setting material used to enclose the wax pattern of dentures, crowns or inlays preparatory to casting.  
*noun*, dentistry  
Heinemann Dental

**iodination**  
incorporation or addition of iodine in a compound.  
*noun*, chemistry  
Dorland Medical

**iodine I.**  
element, symbol I, at.no. 53, greyish-black, lustrous solid or violet-blue gas.  
*noun*, chemistry  
Dorland Medical

**ion**  
any atom or molecule which has resultant electric charge due to loss or gain of valency electrons.  
*noun*, chemistry  
Larousse Science

**ion beam**  
beam of ions moving in the same direction with similar speeds.  
*noun*, physics  
Larousse Science

**ion channel**  
hydrophilic pore that allows ions to cross the cell membrane.  
*noun*, biology  
Larousse Science

**ion etching**  
removal of a surface layer of a material by bombardment with a stream of ions, used particularly in the chemical analysis of surface and subsurface layers.  
*noun*, material science  
Williams

**ion exchange**  
exchange of ions of the same charge between a solution (usually aqueous) and a solid in contact with it.  
*noun*, chemistry  
Oxford Science

**ion exchange resin**  
high-molecular-weight insoluble polymer of simple organic compounds capable of exchanging its attached ions for other ions in the surrounding medium.  
*noun*, chemistry  
Dorland Medical

**ion implantation**

technique of implanting ions in the lattice of a crystal in order to modify its properties.

*noun*, material science  
Oxford Science

**ionic bond**  
coulomb force between ion-pairs in molecule or ionic crystal.  
*noun*, chemistry  
Larousse Science

**ionic material**  
any solid with structure composed partly or wholly of charged species, anions and cations.  
*noun*, chemistry  
Larousse Science

**ionic polymerisation**  
polymerisation process in which monomeric vinyl moieties are added to agents containing electrically charged ions.  
*noun*, polymer science  
Szycher's Biomaterials

**ionic radius**  
approximate limiting radius of ions in crystals.  
*noun*, chemistry  
Larousse Science

**ionomer**  
thermoplastic containing covalent and ionic bonds.  
*noun*, polymer science  
Szycher's Biomaterials

**ionophore**  
any molecule, as of a drug, that increases the permeability of cell membranes to a specific ion.  
*noun*, biology  
Dorland Medical

**iontophoresis**  
introduction of ions of soluble salts into the body by means of electric current.  
*noun*, medicine  
Dorland Medical

**iontophoresis device**  
device that is intended to use a direct current to introduce ions of soluble salts or other drugs into the body.  
*noun*, medical device technology  
CFR

**ipsilateral side**  
the working side.  
*noun*, anatomy  
Heinemann Dental

**iridium Ir.**  
element, symbol Ir, at.no. 77, white, brittle metal of platinum family.  
*noun*, chemistry  
Dorland Medical

**iris**  
circular pigmented membrane behind the cornea, perforated by the pupil.  
*noun*, ophthalmology  
Dorland Medical

**iron Fe.**

symbol Fe, at no 26. a metallic element in the eight group of the periodic system.

*noun*, chemistry  
Larousse Science

**α-iron**

one of the polymorphic forms of iron, stable below 1179K, which has a body-centred cubic lattice.

*noun*, metallurgy  
Larousse Science

**irreducible**

not susceptible to reduction

*adjective*, general  
Dorland Medical

Notes: As a fracture, hernia, or chemical substance.

**irrigation**

process of washing by a stream of water, saline solution or other fluid.

*noun*, clinical practice  
Dorland Medical

**irritation**

localised inflammatory response to single, repeated or continuous application of a substance, without involvement of an immunological mechanism.

*noun*, biomaterials science  
ISO

**irritation test**

tests to estimate the irritation potential of devices, materials and/or their extracts, using appropriate site or implant tissue such as skin, eye and mucous membrane in a suitable model.

*noun*, biomaterials science  
ISO

Notes: The test(s) performed should be appropriate for the route (skin, eye, mucosa) and duration of exposure or contact to determine irritant effects of devices, materials and potential leachables.

**ischaemia (ischemia)**

bloodlessness of a part of the body, due to contraction, spasm, constriction or blocking of the arteries.

*noun*, medicine  
Black's Medical

**island islet**

cluster of cells or isolated piece of tissue.

*noun*, biology  
Dorland Medical

**islet island**

cluster of cells or isolated piece of tissue.

*noun*, biology  
Dorland Medical

**islets of Langerhans**

irregular microscopic structures scattered throughout the pancreas and comprising its endocrine portion.

*noun*, anatomy  
Dorland Medical

**iso electric focusing**

technique for separating proteins according to their iso electric points.

*noun*, chemistry  
Larousse Science

**iso-**

equal; alike; uniform.

*prefix*, general  
Dorland Medical

**isoantigen alloantigen**

antigen existing in alternative forms, thus inducing an immune response when one form is transformed to members who lack it.

*noun*, immunology  
Williams

**isoelectric**

showing no variation in electric potential.

*adjective*, chemistry  
Dorland Medical

**isoelectric point**

the pH of a medium at which a protein carries no net charge and therefore will not migrate in an electric field.

*noun*, chemistry  
Oxford Science

**isoclinic**

loci of points at which directions of principal axes of stress are parallel to the axes of the crossed plane polarisers in photoelasticity.

*noun*, physics  
Larousse Science

**isocyanate**

compound with isocyanate group -NCO.

*noun*, chemistry  
Larousse Science

**isomer**

molecules that contains the same number and kind of atoms, but which differ in structure, thus displaying wide differences in properties.

*noun*, chemistry  
Szycher's Biomaterials

**isomerism**

possession by two or more distinct compounds of the same molecular formula, each molecule having the same number of atoms of each element, but in different arrangement.

*noun*, chemistry  
Dorland Medical

**isomorphous**

having the same form.

*adjective*, general  
Heinemann Dental

**isotactic**

pertaining to a type of polymeric molecular structure containing a sequence of regularly spaced asymmetric atoms arranged in like configuration in a polymer chain.

*adjective*, polymer science  
ASTM

**isothermal transformation**

change in phase which occurs in a metal or alloy at constant temperature after cooling or heating through the equilibrium temperature.

*noun*, metallurgy  
Larousse Science

**isotonic**

1. denoting a solution having the same tonicity as another solution with which it is compared.

*adjective*, chemistry

2. denoting a solution in which body cells can be bathed without net flow of water across the semi-permeable cell membrane.

*adjective*, biology

Dorland Medical

**isotope**

one of two or more atoms of the same element that have the same number of protons in their nucleus but different numbers of neutrons.

*noun*, chemistry

Oxford Science

**isotropic**

having the same value of a property, e.g., refractive index, in all directions.

*adjective*, chemistry

Dorland Medical

**isotropy**

the ability of materials to display similar mechanical properties in all directions regardless of direction of applied stress.

*noun*, material science

Williams

**jacket crown**

porcelain or acrylic veneer crown which is placed over the prepared remains of a vital natural tooth.

*noun*, dentistry

Heinemann Dental

**jaw**

either of the two bony tooth-bearing structures (mandible and maxilla) in the head of dentate vertebrates.

*noun*, anatomy

Dorland Medical

**joint**

the site of junction or union between two or more bones, especially one that permits motion of one or more of the bones.

*noun*, anatomy

Dorland Medical

**joint capsule** *articular capsule*

the sac-like envelope enclosing the cavity of a synovial joint.

*noun*, anatomy

Dorland Medical

**jugular**

pertaining to the neck.

*adjective*, anatomy

Dorland Medical

**juvenile rheumatoid arthritis**

rheumatoid arthritis in children, with swelling, tenderness, and pain involving one or more joints, leading to impaired growth and development, limitation of movement, and ankylosis and flexion contractures of the joints.

*noun*, medicine

Dorland Medical

**juxta-**

situated near; adjoining.

*prefix*, general

Dorland Medical

**kallikrein**

one of a group of enzymes present in plasma, various glands, urine, and lymph, the major action of which is liberation of kinins from FISH SYMBOL-2-globulins.

*noun*, biology

Dorland Medical

**kaolin**

soft white clay that is composed chiefly of the mineral kaolinite.

*noun*, material science

Oxford Science

Notes: Used as a raw material for the production of certain ceramics.

**Kaposi's sarcoma**

malignant tumour containing blood vessels, lymph vessels or fibrous tissues and blood pigment.

*noun*, medicine

Heinemann Dental

**kary(o)-**

pertaining to a nucleus.

*prefix*, biology

Dorland Medical

**karyon**

the nucleus of a cell.

*noun*, biology

Dorland Medical

**karyotype**

the number and structure of the chromosomes in the nucleus of a cell.

*noun*, biology

Oxford Science

**kerat(o)-**

relating to horny tissue or the cornea.

*prefix*, anatomy

Dorland Medical

**keratan sulphate** (keratan sulfate)

either of two glycosaminoglycans (I and II), consisting of repeating disaccharide units of N-acetylglucosamine and galactose, but differing slightly in carbohydrate content and localisation.

*noun*, chemistry

Dorland Medical

**keratin**

any of a family of scleroproteins that are the main constituents of epidermis, hair, nails, and horny tissues.

*noun*, biology

Dorland Medical

**keratinocyte**

the epidermal cell that synthesises keratin.

*noun*, biology

Dorland Medical

**keratinogenesis**

the development of horny tissue.

*noun*, biology

Heinemann Dental

**keratinous**

relating to or containing keratin.  
*adjective*, anatomy  
Szycher's Biomaterials

**keratitis**

inflammation of the cornea.  
*noun*, ophthalmology  
Dorland Medical

**keratome**

knife for incising the cornea.  
*noun*, ophthalmology  
Dorland Medical

**keratoplasty**

reconstructive surgery of the cornea, particularly by corneal grafting.  
*noun*, ophthalmology  
Dorland Medical

**keratoprosthesis**

device intended to be implanted to replace the central area of an opacified natural cornea of the eye to maintain or restore sight.  
*noun*, medical device technology  
Szycher's Medical Devices

**keratosis**

general term for epithelial lesions showing excess keratin.  
*noun*, medicine  
Heinemann Dental

**ketone**

organic compound that contains the carbonyl group (>C=O) linked to two hydrocarbon groups.  
*noun*, chemistry  
Oxford Science

**Kevlar**

trade name for aramid fibre.  
*noun*, material science  
Larousse Science

**kidney**

either of the two organs that filter the blood, excreting the end-products of body metabolism in the form of urine.  
*noun*, anatomy  
Dorland Medical

**killer cells K c's.**

cells that are morphologically indistinguishable from small lymphocytes without T or B-cell surface markers, but which have cytotoxic activity against target cells coated with specific IgG antibody.  
*noun*, immunology  
Dorland Medical

**kinase**

enzyme which catalyses the phosphorylation of its substrate by ATP.  
*noun*, biology  
Larousse Science

**kinesiology**

scientific study of movement of body parts.  
*noun*, biology  
Dorland Medical

**kinesis**

1. movement.  
*noun*, general  
2. stimulus-induced motion, for example of a cell responsive only to the intensity of the stimulus, not the direction.  
*noun*, biology  
Dorland Medical

**kinin**

any of a group of endogenous peptides that increase vascular permeability, cause hypotension, and induce contraction of smooth muscles.  
*noun*, biology  
Dorland Medical

**kininogen**

FISH SYMBOL <sub>2</sub> SUBSCRIPT-globulin of plasma that is a precursor of the kinins.  
*noun*, biology  
Dorland Medical

**kink**

short tight twist or curl caused by something doubling or winding upon itself, particularly seen in thin-walled hollow tubes such as artificial arteries.  
*noun*, general  
Longmans

**kink resistance**

quality of an artificial artery or other tubular implantable device to resist kinking, either on insertion into the body or during use, especially taking into account the normal movement and bending of parts of the body.  
*noun*, medical device technology  
Williams

**knee**

genu; the point of articulation of the femur with the tibia.  
*noun*, anatomy  
Dorland Medical

**Knoop hardness**

hardness measured with Knoop diamond, an elongated rhombus pyramid.  
*noun*, engineering  
Larousse Science

**Koch's postulates**

the academic criteria to be used in testing for scientific validity.  
*noun*, medicine  
Journal of Women's Health  
Notes: Developed to establish a causative association between an organism and a specific disease.

**krypton Kr.**

element symbol Kr, at. no. 36, inert gas.  
*noun*, chemistry  
Dorland Medical

**Kupffer's cell**

one of the fixed tissue macrophage that lines the blood sinuses in the liver.  
*noun*, immunology  
Roitt Immunology

**kyphosis**

abnormally increased convexity in the curvature of the thoracic spine as viewed from the side.

*noun*, anatomy  
Dorland Medical

#### **label**

1. all written, printed or graphic matter: a) on a medical device or any of its containers or wrappers; or b) accompanying a medical device.

*noun*, regulatory affairs  
CEN

Notes: The label relates to identification, technical description and use of the medical device but excluding shipping document.

2. display of written, printed, or graphic matter upon the immediate container of any article.

*noun*, regulatory affairs  
CFR

#### **labial**

relating to the lips.

*adjective*, anatomy  
Heinemann Dental

#### **labile**

1. unstable, moving from point to point over a surface.

*adjective*, general  
Dorland Medical

2. describing a chemical compound in which certain atoms or groups can easily be replaced by other atoms or groups.

*adjective*, chemistry  
Oxford Science

#### **labiolingual appliance**

orthodontic appliance used for intermaxillary treatment, having a labial maxillary archwire and a lingual mandibular archwire attached to first molars and supporting springs.

*noun*, dentistry  
Heinemann Dental

#### **labyrinth**

the internal ear.

*noun*, anatomy  
Dorland Medical

#### **lacerated wound**

wound in which the tissues are torn.

*noun*, medicine  
Dorland Medical

#### **laceration**

wound made by tearing.

*noun*, medicine  
Heinemann Dental

#### **lacrimation**

process of secretion and discharge of tears.

*noun*, biology  
Dorland Medical

#### **lactate**

1. to secrete milk.

*verb*, biology

2. any salt or ester of lactic acid.

*noun*, biology  
Dorland Medical

#### **lactate dehydrogenase LDH.**

enzyme that catalyses the interconversion of lactate and pyruvate.

*noun*, biology  
Dorland Medical

#### **lactic acid**

CH<sub>3</sub> (SUBSCRIPT) CHO<sub>2</sub>COOH, a compound formed in the body in anaerobic metabolism of carbohydrate.

*noun*, biology  
Dorland Medical

#### **lacuna**

small pit or hollow cavity.

*noun*, anatomy  
Dorland Medical

#### **lag**

the time between application of a stimulus and the reaction.

*noun*, biology  
Dorland Medical

#### **lamella**

1. thin leaf or scale.

*noun*, anatomy  
Heinemann Dental

2. plate-like microscopic crystal found in partially crystalline polymers.

*noun*, polymer science  
Larousse Science

#### **lamellar bone**

fully developed cortical bone with the collagen fibres in parallel rows.

*noun*, anatomy  
Heinemann Dental

#### **lamellipodia**

delicate sheet-like extensions of cytoplasm which form transient adhesions with the cell substrate.

*noun*, anatomy  
Dorland Medical

#### **lamina**

thin, flat plate or layer.

*noun*, anatomy  
Dorland Medical

#### **lamina dura**

thin layer of cortical bone lining the tooth socket.

*noun*, dentistry  
Heinemann Dental

#### **lamina propria**

layer of connective tissue which supports the epithelium of the digestive tract and with it forms the mucous membrane.

*noun*, anatomy  
Larousse Science

#### **laminar flow**

streamline flow of a fluid in which the fluid moves in layers without fluctuations or turbulence so that successive particles passing the same point have the same velocity.

*noun*, physics  
Oxford Science

#### **laminar flow hood**

cabinet in a laboratory or production facility

through which air is drawn under laminar flow conditions order to provide an environment of sterility or cleanliness, protecting material or operator as appropriate.

*noun*, engineering  
Williams

**lamine**

a structural sheet material made from two or more dissimilar layers bonded together.

*noun*, engineering  
Larousse Science

**laminectomy**

excision of the posterior arch of a vertebra.

*noun*, surgery  
Dorland Medical

**laminin**

large fibrous protein which is a major component of the basal lamina.

*noun*, biology  
Larousse Science

**lancet**

small, pointed, two-edged surgical knife.

*noun*, surgery  
Dorland Medical

**Langerhans cell**

cell with dendritic shape present in the epidermis and characterised by the presence in the cytoplasm of Birbeck granules.

*noun*, anatomy  
Larousse Science

**Langmuir-Blodgett film**

monomolecular assemblies on a substrate.

*noun*, chemistry  
Larousse Science

**lapar(o)-**

of the abdomen.

*prefix*, anatomy  
Dorland Medical

**laparoscope**

endoscope for examining the peritoneal cavity.

*noun*, medical device technology  
Dorland Medical

**laparoscopy**

examination or treatment of the interior of the abdomen by means of a laparoscope.

*noun*, medicine  
Dorland Medical

**laryngeal**

pertaining to the larynx.

*adjective*, anatomy  
Dorland Medical

**laryngeal prosthesis**

device intended to direct pulmonary air flow to the pharynx in the absence of the larynx, thereby permitting oesophageal speech

*noun*, medical device technology  
CFR

**laryngoplasty**

repair of the larynx.

*noun*, surgery

Dorland Medical

**laryngoscope**

endoscope used within the larynx.

*noun*, medical device technology  
Szycher's Biomaterials

**larynx**

organ of voice production, a musculocartilaginous structure situated between the trachea and the pharynx.

*noun*, anatomy  
Heinemann Dental

**laser**

source of intense monochromatic light in the ultraviolet, visible or infrared region of the spectrum.

*noun*, physics  
Larousse Science

**laser cladding**

the use of a focused beam of high intensity radiation from a laser to melt one substance and apply it as a coating to another material.

*noun*, engineering  
Williams

**latency**

1. state of seeming inactivity.

*noun*, general

2. the time between the instant of stimulation and the beginning of a response.

*noun*, biology  
Dorland Medical

**latent period**

the time that elapses between the reception of a stimulus and the start of the response in tissue.

*noun*, medicine  
Oxford Science

**lateral**

denoting a position farther from the median plan or midline of the body or a structure.

*adjective*, anatomy  
Dorland Medical

**latero-**

signifying at the side or towards the side.

*prefix*, anatomy  
Heinemann Dental

**latex**

1. any emulsion of a non-soluble component in a water solution.

*noun*, material science

Notes: This could be a natural product, as in definition 2, or a synthetic product, as used in adhesives and paints.

2. milky viscous fluid extruded when a rubber tree is tapped.

*noun*, biology  
Larousse Science

**latex allergy**

an allergic response associated with the wearing of surgical gloves.

*noun*, medicine  
Williams

**lathe-cut**

term given to that form of dental amalgam alloy that is prepared by the machining of a solid ingot.  
*adjective*, dentistry  
Williams

**latissimus**

denoting a broad structure.  
*adjective*, anatomy  
Dorland Medical

**latissimus dorsi**

large muscle that originates in the lower thoracic, lumbar and sacral vertebrae with insertion in the humerus.  
*noun*, anatomy  
Dorland Medical  
Notes: Used in cardiomyoplasty.

**lattice**

a regular space arrangement of points as for the sites of atoms in a crystal.  
*noun*, chemistry  
Larousse Science

**laxity**

slackness or displacement in the motion of a joint.  
*noun*, medicine  
Dorland Medical

**Le Fort's fracture**

classes of fracture of the maxilla.  
*noun*, medicine  
Heinemann Dental

**leach**

1. to separate the soluble components from a mixture by the action of a percolating liquid.  
*verb*, chemistry  
2. to remove soluble matter by the action of a percolating or stationary liquid.  
*verb*, biomaterials science  
Longmans

**leachable**

capable of being extracted from a material by the action of a surrounding fluid.  
*adjective*, biomaterials science  
Williams

**leaching**

extraction of soluble components of a solid material or mixture by immersion in a solvent or by percolating a solvent through it.  
*noun*, chemistry  
Oxford Science

**lead Pb.**

symbol Pb, at. no. 82; a metallic element in the fourth group of the periodic system.  
*noun*, chemistry  
Larousse Science

**lecithin phosphatidyl choline**

term now replaced by phosphatidylcholine.  
*noun*, biology  
Dorland Medical

**legally authorised representative**

a person authorised either by statute or by court appointment to make decisions on behalf of

another person.

*noun*, regulatory affairs  
IRB Guidebook

Notes: In human subjects research, this is an individual or judicial or other body authorised under applicable law to consent on behalf of a prospective subject to the subject's participation in the procedure(s) involved in the research.

**lens**

1. piece of glass or other transparent material so shaped as to converge or scatter light rays.  
*noun*, physics  
2. transparent, biconvex body separating the posterior chamber and vitreous body, and constituting part of the refracting mechanism of the eye.  
*noun*, ophthalmology  
Dorland Medical

**lesion**

any pathological or traumatic discontinuity of tissue or loss of function of a part.  
*noun*, medicine  
Dorland Medical

**lethal dosage LD.**

quantity of a substance administered either orally or by skin contact necessary to kill a prescribed fraction of test animals exposed to the substance within a specified time.  
*noun*, toxicology  
Szycher's Biomaterials  
Notes: Usually refers to 50% of animals that are killed.

**leucine Leu, short form L.**

2-amino-4-methylpentanoic acid.  
(CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>CH<sub>2</sub>COOH, amino acid.  
*noun*, chemistry  
Larousse Science

**leuco-, leuko-**

signifying white.  
*prefix*, biology  
Dorland Medical

**leucocyte**

white cell, colourless blood corpuscle.  
*noun*, anatomy  
Dorland Medical

**leucocyte inhibitory factor LIF.**

lymphokine that prevents polymorphonuclear leucocytes from migrating.  
*noun*, biology  
Dorland Medical

**leucocytosis**

transient increase in the number of leucocytes in the blood, due to various causes.  
*noun*, medicine  
Dorland Medical

**leucopenia**

abnormal diminution in the numbers of white cells in the blood.  
*noun*, medicine  
Larousse Science

**leucoplakia**

white thickened patches which develop on the tongue, gums, the palate and the buccal mucous

membrane.  
*noun*, medicine  
Heinemann Dental

**leukaemia** (leukemia)  
progressive, malignant disease of the blood-forming organs, marked by distorted proliferation and development of leucocytes and their precursors in the blood and bone marrow.  
*noun*, medicine  
Dorland Medical

**leukotriene**  
one of the metabolic products of arachidonic acid which promote inflammatory processes (e.g. chemotaxis, increased vascular permeability) and are produced by a variety of cell types including mast cells, basophils and macrophages.  
*noun*, immunology  
Roitt Immunology

**levodopa**  
the levorotatory isomer of dopa, the amino acid precursor of dopamine, used as an anti-Parkinsonian agent.  
*noun*, pharmacology  
Dorland Medical

**Lewis acids and bases**  
concept that defines any substance donating an electron pair as a base, and any substance accepting an electron pair as an acid.  
*noun*, chemistry  
Larousse Science

**lichen**  
any papular skin eruption.  
*noun*, medicine  
Larousse Science

**lichen planus**  
inflammatory skin disease with wide, flat, violaceous, shiny papules in circumscribed patches, which may involve the hair follicles, nails, and buccal mucosa.  
*noun*, medicine  
Dorland Medical

**lidocaine**  
anaesthetic with sedative, analgesic, and cardiac depressant properties.  
*noun*, medicine  
Dorland Medical

**life cycle**  
various stages through which an organism passes, from fertilised ovum to the fertilised ovum of the next generation.  
*noun*, biology  
Larousse Science

**life cycle analysis**  
consideration of the flow of energy and materials through manufacturing system from raw material in the ground, through processing to shape, assembly of finished product and disposal following use.  
*noun*, engineering  
Larousse Science

**ligament**

1. band of fibrous tissue connecting bones or cartilages, serving to support and strengthen joints.  
*noun*, anatomy  
2. double layer of peritoneum extending from one visceral organ to another.  
*noun*, anatomy  
Dorland Medical

**ligand**  
1. ion or molecule that donates a pair of electrons to a metal atom or ion in forming a co-ordination complex.  
*noun*, chemistry  
Oxford Science  
2. general term for a molecule recognised by a binding structure such as a receptor.  
*noun*, immunology  
Roitt Immunology

**ligature**  
piece of thread, silk, wire, catgut or any other material, for tying round blood vessels etc.  
*noun*, surgery  
Larousse Science

**light chain**  
either of the two small polypeptide chains (molecular weight 22,000) that, when linked to heavy chains by disulphide bonds, make up the antibody molecule.  
*noun*, immunology  
Dorland Medical

**limb orthosis**  
device intended for medical purposes that is worn on the upper or lower extremities to support, to correct, or to prevent deformities or to align body structures for functional improvement.  
*noun*, medical device technology  
CFR

**line angle**  
angle formed at the junction of two tooth surfaces or of two cavity walls.  
*noun*, dentistry  
Heinemann Dental  
Notes: Line angles are named according to the surfaces of walls that form them.

**linear polymer**  
polymer whose molecules are linked together in the form of chains, with little or no branching or side links,  
*noun*, polymer science  
Szycher's Biomaterials

**liner**  
any material used on the inner surfaces of a cavity or container for protection or insulation.  
*noun*, dentistry  
Heinemann Dental

**lingual**  
pertaining to or near the tongue.  
*adjective*, anatomy  
Dorland Medical

**lingual angle**  
any angle formed by the junction of a lingual tooth surface or cavity wall with any other tooth surface

or cavity wall.  
*noun*, dentistry  
Heinemann Dental

**lipase**  
any enzyme that catalyses the cleavage of a fatty acid anion from a triglyceride or phospholipid.  
*noun*, biology  
Dorland Medical

**lipid**  
any of a heterogeneous group of fats and fat-like substances, including fatty acids, neutral fats, waxes, and steroids, which are water-insoluble and soluble in non-polar solvents.  
*noun*, biology  
Dorland Medical

**lipo-**  
signifying fat.  
*prefix*, biology  
Heinemann Dental

**lipoma**  
benign, soft, rubbery, encapsulated tumour of adipose tissue.  
*noun*, medicine  
Dorland Medical

**lipophilic**  
capable of being dissolved in lipids.  
*adjective*, biology  
Biomedical Engineering Handbook

**lipopolysaccharide LPS.**  
endotoxin derived from Gram-negative bacterial cell walls which has inflammatory and mitogenic actions.  
*noun*, immunology  
Roitt Immunology

**lipoprotein**  
complex of protein and lipid in varying proportions.  
*noun*, biology  
Larousse Science  
Notes: These are classified according to their increasing density into chylomicrons, very low density lipoproteins (VLDL), low density lipoproteins (LDL) and high density lipoproteins (HDL).

**liposome**  
spherical shell formed when mixtures of phospholipids, with or without cholesterol, are dispersed in aqueous solutions.  
*noun*, biology  
Larousse Science

**liposuction**  
surgical removal of localised fat deposits with a high pressure vacuum, which is applied via a cannula inserted subdermally through a small incision.  
*noun*, surgery  
Dorland Medical

**liquidus**  
line in a phase diagram indicating the temperatures at which solidification of one phase or constituent begins or melting is completed.  
*noun*, material science  
Larousse Science

**lithiasis**  
formation of calculi in the body. The condition in which an excess of uric acid and urates is excreted in the urine.  
*noun*, biology  
Larousse Science

**lithium Li.**  
element symbol Li, at. no. 3, lightest of all metals.  
*noun*, chemistry  
Dorland Medical

**lithotomy**  
cutting into the bladder or ureter for the removal of a stone or calculus.  
*noun*, surgery  
Larousse Science

**lithotripsy**  
crushing of a calculus within the urinary system or gallbladder and the washing out of the fragments.  
*noun*, medicine  
Dorland Medical  
Notes: It may be performed surgically or by non-invasive methods, such as by laser or by shock waves.

**liver**  
large, dark-red gland in the upper part of the abdomen on the right side, just beneath the diaphragm whose functions include storage and filtration of blood, secretion of bile, conversion of sugars into glycogen.  
*noun*, anatomy  
Dorland Medical

**load**  
1. the weight supported by a structure.  
*noun*, physics  
2. force applied to a body.  
*noun*, physics  
Larousse Science

**lobe**  
a more or less well-defined portion of an organ or gland.  
*noun*, anatomy  
Dorland Medical

**lobotomy**  
incision of a lobe; particularly in psychosurgery, incision of all the fibres of a lobe of the brain.  
*noun*, surgery  
Dorland Medical

**location control**  
control of the direction of the principal active component of a drug to the desired site of action.  
*noun*, pharmacology  
Williams

**locus**  
1. place; site.  
*noun*, general  
2. specific site of a gene on a chromosome.  
*noun*, genetics  
Dorland Medical

**lod score**  
expression of the probability that a gene and a marker are linked.  
*noun*, genetics

IRB Guidebook

**long term**

normally intended for continuous use for more than 30 days.

*noun*, regulatory affairs  
EU Directive

**longitudinal study**

study designed to follow subjects forward through time.

*noun*, medicine  
IRB Guidebook

**lordosis**

forward curvature of the lumbar spine.

*noun*, anatomy  
Dorland Medical

**loss tangent**

ratio of imaginary to real parts of a dielectric constant.

*noun*, physics  
Larousse Science

**lost wax casting** *investment casting*

method of casting in which a wax pattern of the desired object is surrounded by a refractory material, the wax eliminated by heat and metal poured into the resulting space.

*noun*, engineering  
Williams

**lot batch**

one or more components or finished devices that consist of a single type, model, class, size, composition, or software version that are manufactured under essentially the same conditions and that are intended to have uniform characteristics and quality within specified limits.

*noun*, engineering  
CFR

**low density polyethylene LDPE.**

polyethylene resins ranging in density from 0.915 to 0.925.

*noun*, polymer science  
Szycher's Biomaterials

Notes: Widely used as a commodity plastic, for catheters, films, etc.

**lubricant**

substance applied as a surface film to reduce friction between moving parts.

*noun*, engineering  
Dorland Medical

**lubricity**

the quality of having a smooth or slippery surface.

*noun*, engineering  
Longmans

**Lucite** *Perspex*

trade name for thermoplastic polymethylmethacrylate.

*noun*, polymer science  
Larousse Science

Notes: Mose widely used in the USA. Equivalent in the UK is Perspex.

**lug**

projection from a prosthetic appliance which fits

into a prepared seat in an abutment and acts as support and retention.

*noun*, dentistry  
Heinemann Dental

**lumbar**

pertaining to the loins.

*adjective*, anatomy  
Dorland Medical

**lumbar puncture** *spinal puncture*

withdrawal of fluid from the subarachnoid space in the lumbar region, usually between the third and fourth lumbar vertebrae.

*noun*, medicine  
Dorland Medical

**lumen**

1. cavity or channel within a tubular organ.

*noun*, anatomy  
Dorland Medical

2. channel within a tube, especially of a medical device such as a catheter or vascular prosthesis.

*noun*, medical device technology  
Williams

**luminescence**

emission of light by a substance for any reason other than a rise in its temperature.

*noun*, physics  
Oxford Science

Notes: For example, bioluminescence, fluorescence, phosphorescence.

**lumpectomy**

surgical excision of a mass, particularly of a palpable lesion in carcinoma of the breast.

*noun*, surgery  
Dorland Medical

**lupus**

any of a group of skin diseases in which the lesions are characteristically eroded.

*noun*, medicine  
Dorland Medical

**lupus erythematosus LE.**

group of chronic connective tissue diseases, usually considered to be due to autoimmunity.

*noun*, medicine  
Dorland Medical

**luting agent**

form of thin, fine-grained cement used to retain crowns, inlays, etc.

*noun*, dentistry  
Heinemann Dental

**luxation**

separation of a tooth from its socket due to injury.

*noun*, dentistry  
Heinemann Dental

**lymph**

transparent, usually slightly yellow, often opalescent, liquid found within the lymphatic vessels, and collected from tissues in all parts of the body and returned to the blood via the lymphatic system.

*noun*, biology  
Dorland Medical

**lymph gland**

an aggregation of reticular connective tissue, crowded with lymphocytes, surrounded with a fibrous capsule, and provided with afferent and efferent lymph vessels.

*noun*, anatomy  
Larousse Science

**lymph node**

any of the accumulations of lymphoid tissue organised as definite lymphoid organs along the course of lymphatic vessels.

*noun*, anatomy  
Dorland Medical

**lymphadenopathy**

disease of the lymph nodes.

*noun*, medicine  
Dorland Medical

**lymphatic**

pertaining to lymph or to a lymphatic vessel.

*adjective*, anatomy  
Dorland Medical

**lymphatic system**

body-wide system of vessels, connecting all lymph nodes, which carry lymph and eventually drain into either the thoracic or right lymphatic duct and thence into the subclavian veins.

*noun*, anatomy  
Larousse Science

**lymphatic vessels**

the capillaries, collecting vessels, and trunks that collect lymph from the tissues and carry it to the blood stream.

*noun*, anatomy  
Dorland Medical

**lymphocyte**

spherical actively mobile cell with a large round nucleus and very scanty cytoplasm.

*noun*, immunology  
Larousse Science  
Notes: the term is essentially morphological and is used to refer to cells responsible for development of specific immunity, B lymphocytes being associated with humoral and T lymphocytes with cellular immunity.

**lymphocytopenia**

reduction of the number of lymphocytes in the blood.

*noun*, medicine  
Dorland Medical

**lymphoedema (lymphedema)**

chronic swelling of a part due to accumulation of interstitial fluid secondary to obstruction of lymphatic vessels or lymph nodes.

*noun*, medicine  
Dorland Medical

**lymphokine**

cytokine produced by lymphocytes.

*noun*, immunology  
Roitt Immunology

**lymphoma**

any neoplastic disorder of lymphoid tissue.

*noun*, medicine

Dorland Medical

**lyophilic**

having an affinity for, or stable in, solution.

*adjective*, chemistry  
Dorland Medical

**lyophilisation**

removal of water from a frozen material via the application of vacuum, where moisture evaporates as a result of sublimation.

*noun*, chemistry  
Szycher's Biomaterials

**lyophilise (lyophilize)**

to freeze dry.

*verb*, engineering  
Longmans

**lyophobic**

not having an affinity for or unstable in, solution.

*adjective*, chemistry  
Dorland Medical

**lysate**

product of lysis.

*noun*, biology  
Longmans

**lysine Lys, short form K.**

$\text{HSUBSCRIPT}_2\text{N(CHSUBSCRIPT}_2\text{)SUBSCRIPT}_4\text{C H(NH SUBSCRIPT}_2\text{)OOH}$ , a naturally occurring amino acid, essential for optimal growth in human infants and for maintenance of nitrogen equilibrium in adults.

*noun*, biology  
Dorland Medical

**-lysis**

signifying dissolution, destruction or decomposition.

*suffix*, biology  
Dorland Medical

**lysis**

destruction or decomposition, as of a cell or other substance, under influence of a specific agent.

*noun*, biology  
Dorland Medical

**lysosome**

cytoplasmic granule of a cell containing hydrolytic enzymes involved in the digestion of phagocytosed material.

*noun*, biology  
Roitt Immunology

**lysozyme**

anti-bacterial enzyme present in phagocytic cell granules, tears and saliva, which digests peptidoglycans in bacterial cell walls.

*noun*, biology  
Roitt Immunology

**macro-**

signifying large, or of abnormal size.

*prefix*, general  
Dorland Medical

**macrocephalic**

having an abnormally large head.

*noun*, anatomy  
Heinemann Dental

**macrocyte**

abnormally large red cell in the blood.  
*noun*, medicine  
Larousse Science

**macrodontia**

condition of having abnormally large teeth.  
*noun*, dentistry  
Heinemann Dental

**macroglobulin**

globulin of unusually high molecular weight, in the range of 1,000,000.  
*noun*, biology  
Dorland Medical

**macrognathia**

enlargement of the jaw.  
*noun*, medicine  
Dorland Medical

**macromolecule**

a very large molecule having a polymeric chain structure, as in proteins, polysaccharides, etc.  
*noun*, chemistry  
Dorland Medical

**macrophage**

cell of the mononuclear phagocyte system, derived from blood monocytes which migrate into tissues and differentiate there.  
*noun*, anatomy  
Larousse Science  
Notes: These cells are actively phagocytic, and ingest particulate materials including microbes. They are particularly involved in the host response to implanted biomaterials.

**macroscopic**

visible to the naked eye.  
*adjective*, general  
Larousse Science

**macrostructure**

the structure of a metal as seen by the naked eye or at low magnification on a ground or polished surface or on one which has been subsequently etched.  
*noun*, metallurgy  
Larousse Science

**mad cow disease** *bovine spongiform encephalopathy*

an infectious degenerative brain disease of cattle, originally caused by cattle feed processed from scrapie-infected sheep remains.

*noun*, medicine  
Larousse Science  
Notes: NEED TO DELETE THIS ENTRY AFTER IMPORTATION

**magnesium Mg.**

symbol Mg, at. no. 12; a light metallic element in the second group of the periodic system.  
*noun*, chemistry  
Larousse Science

**magnetic resonance diagnostic device**

device intended for general diagnostic use to

present images which reflect the spatial distribution and/or magnetic resonance spectra which reflect frequency and distribution of nuclei exhibiting nuclear magnetic resonance  
*noun*, medical device technology  
CFR

**magnetic resonance imaging MRI.**

the use of nuclear magnetic resonance of protons to produce proton density maps or images of the human body.  
*noun*, medicine  
Larousse Science

**major histocompatibility complex MHC.**

genetic region encoding molecules involved in antigen presentation to T-cells.  
*noun*, immunology  
Roitt Immunology  
Notes: Class I MHC molecules are present on virtually all nucleated cells and are encoded mainly by the H-2K, D and L loci in mice and by HLA-A, B, and C in man, whilst Class II MHC molecules are expressed on antigen-presenting cells (primarily macrophages, B-cells and interdigitating dendritic cells) and are encoded by H-2A and E in mice and HLA-DR, DQ, and DP in man.

**malacia**

morbid softening of the tissues or of other parts.  
*noun*, medicine  
Heinemann Dental

**malar**

relating to the cheek, or to the cheek-bone.  
*adjective*, anatomy  
Heinemann Dental

**maleic acid**

unsaturated dibasic acid, the cis-isomer of fumaric acid.  
*noun*, chemistry  
Dorland Medical

**maleic anhydride**

anhydride of maleic acid.  
*noun*, chemistry  
Larousse Science

**malfunction**

failure of a device to meet any of its performance specifications or otherwise to perform as intended.  
*noun*, regulatory affairs  
CFR

**malignant**

1. tending to become worse and end in death.  
*adjective*, biology  
2. in relation to tumours, having the properties of anaplasia, invasiveness, and metastasis.  
*noun*, medicine  
Dorland Medical

**malleability**

capable of being mechanically manipulated into the desired shape.  
*noun*, metallurgy  
Williams

**malleolus**

1. rounded process.  
*noun*, anatomy  
Dorland Medical

2. process of the lower end of the tibia or fibula.

*noun*, anatomy  
Larousse Science

**malocclusion**

any deviation from the normal occlusion of the teeth, resulting in impaired function.

*noun*, dentistry  
Heinemann Dental

**mamm(o)-**

relating to the breast or mammary gland.  
*prefix*, anatomy  
Dorland Medical

**mammary**

pertaining to the mammary gland, or breast.  
*adjective*, anatomy  
Dorland Medical

**mammary prosthesis**

breast implant.  
*noun*, medical device technology  
Larousse Science

**mammogram**

radiograph of the breast.  
*noun*, medicine  
Dorland Medical

**mammography**

radiological examination of the breast.  
*noun*, medicine  
Larousse Science

**mammoplasty**

reconstruction of the breast, to either augment or reduce its size.  
*noun*, surgery  
Dorland Medical

**man**

the human race, all living races being included in the genus *Homo*, suborder Anthropeidea of the Primates.  
*noun*, biology  
Larousse Science

**mandatory mode**

mode of mechanically ventilating the lungs where the ventilator controls all breath delivery parameters such as tidal volume, respiration rate, flow waveform, etc.  
*noun*, medical device technology  
Biomedical Engineering Handbook

**mandible**

the lower jaw.  
*noun*, anatomy  
Dorland Medical

**mandibular canal**

inferior dental canal.  
*noun*, anatomy  
Heinemann Dental

**mandibular condyle prosthesis**

device that is intended to be implanted in the human jaw to replace the mandibular condyle and to articulate within a glenoid fossa.  
*noun*, medical device technology

CFR

**mandibular fossa glenoid fossa**

depression in the squamous portion of the temporal bone below the zygomatic process, in which the condyle of the mandible rests.

*noun*, anatomy  
Heinemann Dental

**mandrel**

1. accurately turned rod over which metal is forged, drawn or shaped during working so as to create or preserve desired axial cavity.

*noun*, engineering  
Larousse Science

2. core around which polymers, fabrics or resin impregnated fabrics are wound to form tubes.

*noun*, engineering  
Szycher's Biomaterials

3. shaft on which a dental tool is held in the dental handpiece, for rotation by the dental engine.

*noun*, dentistry  
Dorland Medical

**manganese Mn.**

symbol Mn, at. no. 25; a hard, brittle metallic element, in the seventh group of the periodic system.

*noun*, chemistry  
Larousse Science

**mannitol**

polyhydric alcohol, CH SUBSCRIPT 2 OH (CHOH) SUBSCRIPT 4 CH SUBSCRIPT 2 OH, derived from mannose or fructose.

*noun*, chemistry  
Oxford Science

**mantle**

1. an enveloping cover or layer.

*noun*, general  
2. cerebral cortex.

*noun*, anatomy  
Dorland Medical

**manufacturer**

1. natural or legal person with responsibility for the design, manufacture, packaging and labelling of a device before it is placed on the market under his own name, regardless of whether these operations are carried out by that person himself or on his behalf by a third party.

*noun*, regulatory affairs  
EU Directive

Notes: This definition applies in the European Union for regulatory purposes.

2. a person who sells a medical device under their own name, or under a trademark, design, trade name or other name or mark owned or controlled by the person, and who is responsible for designing, manufacturing, assembling, processing, labelling, packaging, refurbishing or modifying the device, or for assigning to it a purpose, whether those tasks are performed by that person or on their behalf.

*noun*, regulatory affairs  
Canadian Medical Devices

3. any person who manufactures, prepares, propagates, compounds, assembles or processes a device by a chemical, physical, biological, or other procedure.

*noun*, regulatory affairs

CFR

Notes: This definition applies in the USA for regulatory purposes. Also includes any person who:

- 1) repackages or otherwise changes the container, wrapper or labelling of a device in furtherance of the distribution of the device from the original place of manufacture;
- 2) initiates specifications for devices that are manufactured by a second party for subsequent distribution by the person initiating the specifications;
- 3) manufactures components or accessories which are devices that are ready to be used and are intended to be commercially distributed and intended to be used as is, or are processed by a licensed practitioner;
- 4) is the U.S. agent of a foreign manufacturer.

**margin of exposure** *margin of safety*

ratio of the no-observed-adverse-effect level (NOAEL) to the estimated exposure intake or dose.

*noun*, toxicology

OECD

**margin of safety** *margin of exposure*

ratio of the no-observed-adverse-effect level (NOAEL) to the estimated exposure intake or dose.

*noun*, toxicology

OECD

**marker**

something that identifies or that is used to identify.

*noun*, general

Dorland Medical

**market withdrawal**

correction or removal of a distributed device that involves a minor violation of the act that would not be subject to legal action by FDA or that involves no violation of the act, e.g., normal stock rotation practices.

*noun*, regulatory affairs

CFR

**marrow**

vascular connective tissue which occupies the central cavities of the long bones in most vertebrates, and also the spaces in certain types of cancellated bone.

*noun*, anatomy

Larousse Science

**marsupialisation** (marsupialization)

1. conversion of a closed cavity into an open pouch, by incising it and suturing the edges of its wall to the edges of the wound.

*noun*, surgery

Dorland Medical

(marsupialization)

2. process by which epithelium migrates around a percutaneous implanted device, causing loss of continuity between the device and subcutaneous tissues, and usually expulsion of the device.

*noun*, biomaterials science

Williams

**martensite**

non-equilibrium microstructure formed in steel when the austenite phase is cooled too rapidly for carbon to diffuse out of solid solution to form Fe<sub>3</sub>C.

*noun*, metallurgy

Larousse Science

**martensitic transformation**

type of rapid transition from one crystal structure to another by shear rather than the more common, and much slower, diffusion, nucleation and growth.

*noun*, metallurgy

Larousse Science

**Maryland bridge**

bridge in which the abutments are bonded to the acid-etched surfaces of the supporting teeth.

*noun*, dentistry

Heinemann Dental

**mask**

opaque material used to protect specified areas of a printing plate during exposure.

*noun*, engineering

Larousse Science

**masked study design** *blind study design*

study design comparing two or more interventions in which either the investigators, the subjects, or some combination thereof do not know the treatment group assignments of individual subjects.

*noun*, medicine

IRB Guidebook

**mass**

quantity of matter in a body.

*noun*, physics

Larousse Science

**mass spectrometer MS.**

device that identifies relative concentration of gases by means of mass-to-charge ratios of gas ions.

*noun*, chemistry

Biomedical Engineering Handbook

**mast cell**

cell with basophil cytoplasmic granules similar to but smaller than those of basophil leucocytes in the blood.

*noun*, anatomy

Larousse Science

**mastectomy**

excision of the breast.

*noun*, surgery

Dorland Medical

**master file**

1. principal source of information for a job.

*noun*, general

Larousse Science

2. reference source that a person submits to a regulatory body.

*noun*, regulatory affairs

CFR

Notes: A master file may contain detailed information on a specific manufacturing facility, process, methodology, or component used in the manufacture, processing, or packaging of a medical device.

**mastication**

the process of chewing food.

*noun*, dentistry

Dorland Medical

**masticatory apparatus**

all the organs and structures that are involved in mastication, including the teeth, tongue, lips, oral mucosa, jaws, temporomandibular joints, masticatory muscles and their associated nervous system.

*noun*, dentistry  
Heinemann Dental

**mastoid**

thick process of the temporal bone.

*noun*, anatomy  
Heinemann Dental

**mastopexy**

surgical fixation of a pendulous breast.

*noun*, surgery  
Dorland Medical

**material**

1. pertaining to matter.

*adjective*, general

2. any substance that is useful for making objects.

*noun*, material science  
Williams

**materials handling**

the process, which includes mechanical handling, of transporting and positioning raw materials, semi-finished and finished products in connection with industrial operations, by conveyors, cranes, trucks, hopperfeeds etc.

*noun*, engineering  
Larousse Science

**materials science**

study of chemical and physical properties of elements, compounds, mixtures (blends and alloys) and minerals for understanding of atomic and/or molecular causes.

*noun*, material science  
Larousse Science

**materials selection**

activity involving matching materials available to product specification.

*noun*, engineering  
Larousse Science

**materials technology**

application of materials science to the development and practical use of conventional or new materials, especially for manufactured products.

*noun*, engineering  
Larousse Science

**mathematical model**

representation by mathematical expressions of a physical event as an aid to understanding the process.

*noun*, physics  
Larousse Science

**matrix**

1. more or less continuous matter in which something is embedded.

*noun*, general  
Larousse Science

2. intercellular substance of a tissue or the tissue from which a structure develops.

*noun*, anatomy

Dorland Medical

3. component of a composite material in which the fibres or filler materials are embedded.

*noun*, material science  
Larousse Science

**matrix band**

thin band of metal used to provide a temporary tooth wall to support a filling.

*noun*, dentistry  
Heinemann Dental

**mattress suture**

method of wound closure in which the stitches are parallel with (horizontal mattress suture) or at right angles to (vertical mattress suture) the wound edges.

*noun*, surgery  
Dorland Medical

**maturation**

1. process of becoming mature.

*noun*, general

2. process of cell division during which the number of chromosomes in the germ cells is reduced to one half the number characteristic of the species.

*noun*, genetics  
Dorland Medical

**maxilla**

one of the two bones that form the upper jaw.

*noun*, anatomy  
Heinemann Dental

**maxillofacial prosthesis**

prosthesis that replaces part of the facial structure following trauma, disease or congenital absence that is worn wholly or partially externally.

*noun*, medical device technology  
Williams

**maxillofacial surgery**

branch of dentistry that deals with the diagnosis and surgical and adjunct treatment of diseases and defects of the mouth and dental structures.

*noun*, dentistry  
Dorland Medical

**maximum dosage**

largest dose consistent with safety.

*noun*, pharmacology  
Dorland Medical

**maximum implantable dose MID.**

maximum amount of implant material (dose) that a test animal can tolerate without any adverse physical or mechanical effects.

*noun*, biomaterials science  
ISO

**meatus**

opening or passage.

*noun*, anatomy  
Dorland Medical

**mechanical adhesion**

adhesion between two surfaces in which the adhesive holds the parts together by an interlocking action.

*noun*, engineering  
Szycher's Biomaterials

**mechanical condenser**

instrument used to condense gold or amalgam in restorations.

*noun*, dentistry  
Heinemann Dental

**mechanical properties**

group of characteristics of a material that relate to its behaviour when subjected to mechanical forces.

*noun*, engineering  
Williams

**mechanoreceptor**

receptor that responds to such mechanical stimuli as touch, sound, and pressure.

*noun*, biology  
Oxford Science

**medial**

situated toward the midline of the body or a structure.

*adjective*, anatomy  
Dorland Medical

**mediate**

to serve as an intermediate agent.

*verb*, general  
Dorland Medical

**medical device**

1. an instrument, apparatus, implement, machine, contrivance, *in vitro* reagent, or other similar or related article, including any component, part or accessory, which is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease in man or intended to affect the structure or any function of the body of man or other animals, and which does not achieve its primary intended purposes through chemical action with in or on the body of man or other animals and which is not dependent upon being metabolised for the achievement of its primary intended purposes.

*noun*, regulatory affairs  
CFR

2. a diagnostic or therapeutic article that does not achieve any of its principal intended purpose through chemical action within or on the body.

*noun*, regulatory affairs  
IRB Guidebook

Notes: Such devices include diagnostic test kits, crutches, electrodes, pacemakers, arterial grafts, intraocular lenses, and orthopaedic pins or other orthopaedic equipment.

3. an instrument, apparatus, implement, machine, contrivance, *in vitro* reagent, or other similar or related article, including any component, part or accessory, which is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease in man.

*noun*, regulatory affairs

ESB Consensus Conference I

4. any instrument, apparatus, appliance, material or other article, whether used alone or in combination, including the software necessary for its proper application intended by the manufacturer to be used for human beings for the purpose of: diagnosis, prevention, monitoring, treatment or alleviation of disease; diagnosis,

monitoring, treatment, alleviation of or compensation for an injury or handicap; investigation, replacement or modification of the anatomy or of a physiological process; and control of conception, and which does not achieve its principal intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its function by such means.

*noun*, regulatory affairs  
EU Directive

**Medical Device Act**

US legislation enacted in 1976 which provided the FDA with the authority to regulate medical devices.

*noun*, regulatory affairs  
Szycher's Biomaterials

**Medical Device Agency MDA.**

*noun*, regulatory affairs

**Medical Device Amendments MDA.**

amendments to the U.S. Federal Food, Drug and Cosmetic Act passed in 1976 to regulate the distribution of medical devices and diagnostic products.

*noun*, regulatory affairs  
IRB Guidebook

**medical device family**

1. group of devices manufactured by or for the same manufacturer and having the same basic design and performance characteristics related to device safety and effectiveness, the same intended use and function, and the same device classification and product code.

*noun*, regulatory affairs  
CFR

2. group of medical devices that are made by the same manufacture, that differ only in shape, colour, flavour or size, that have the same design and manufacturing process and that have the same intended use.

*noun*, regulatory affairs  
Canadian Medical Devices

**medical device group**

medical device comprising a collection of medical devices, such as a procedure pack or tray, that is sold under a single name.

*noun*, regulatory affairs  
Canadian Medical Devices

**medical device group family**

collection of medical device groups that are made by the same manufacturer, that have the same generic name specifying their intended use, and that differ only in the number and combination of products that comprise each group.

*noun*, regulatory affairs  
Canadian Medical Devices

**medical device reportable event**

event about which manufacturers have received or become aware of information that reasonably suggests that one of their marketed devices may have caused or contributed to a death or serious injury; or has malfunctioned and that the device or

a similar device marketed by the manufacturer would be likely to cause or contribute to a death or serious injury if the malfunction were to recur.  
*noun*, regulatory affairs  
CFR

### **Medical Devices Directive**

any of the Directives of the European Commission that relate directly to the regulation of medical devices.  
*noun*, regulatory affairs  
Williams  
Notes: There are three such directives: Medical Devices Directive, Active Implantable Medical Devices Directive and the In-Vitro Diagnostics Directive.

### **medical grade**

term loosely used to describe the quality of a material on the basis that it is acceptable for use in medical devices.  
*adjective*, medical device technology  
Williams  
Notes: the term has evolved over many years and conveys different meanings, including a) a grade of a material that has been specifically designed for medical applications b) a grade of a material that is prepared under special (usually clean room) conditions c) a grade of a material that is associated with a regulatory master file

### **medical jurisprudence**

branch of law that deals specifically with medical matters.  
*noun*, legal  
Longmans

### **medical material**

any synthetic or natural polymer, metal, alloy, ceramic or other non-viable substance, including tissue rendered non-viable, used as a device or any part thereof.  
*noun*, biomaterials science  
ISO  
Notes: The use of this term is not recommended since it is too imprecise. Better terms are biomaterial and biomedical material.

### **medicinal product**

any substance or combination of substances presented for treating or preventing disease in human beings or animals, or any substance or combination of substances which may be administered to human beings or animals with a view to making a medical diagnosis or to restoring, correcting or modifying physiological functions in human beings or in animals.  
*noun*, regulatory affairs  
EU Directive

### **medicolegal**

pertaining to medical jurisprudence.  
*adjective*, legal  
Dorland Medical

### **mediolateral**

pertaining to the midline and one side.  
*adjective*, anatomy  
Dorland Medical

### **medium**

mixture of substances which are essential, beneficial, or harmless to cells in culture.  
*noun*, biology

ASTM

### **medulla**

inner region of an organ.  
*noun*, anatomy  
Roitt Immunology

### **medullary canal**

1. cavity of the central nervous system in vertebrates.  
*noun*, anatomy  
2. central cavity of a shaft-bone.  
*noun*, anatomy  
Larousse Science

### **megakaryocyte**

bone marrow precursor of platelets.  
*noun*, anatomy  
Roitt Immunology

### **meiosis**

a process of cell division by which the chromosomes are reduced from the diploid to the haploid number.  
*noun*, genetics  
Larousse Science

### **melamine plastic**

plastic based on resins made by the condensation of melamine and aldehydes.  
*noun*, material science  
ASTM

### **melanin**

the dark pigment of the skin, hair, choroid coat of the eye, substantia nigra, and various tumours, it is produced by polymerisation of oxidation products of tyrosine and dihydroxyphenol compounds.  
*noun*, biology  
Dorland Medical

### **melanoma**

tumour, of variable malignancy, arising from cells in the skin and retina that produce melanin.  
*noun*, medicine  
Larousse Science

### **melatonin**

hormone derived from serotonin and secreted by the pineal gland and retinas of vertebrates.  
*noun*, biology  
Oxford Science

### **melt flow index (MFI)**

measure of melt viscosity of polymers.  
*noun*, polymer science  
Larousse Science

### **melt index**

amount in grams, of a thermoplastic resin which can be forced through an orifice of 0.0825" diameter when subjected to a force of 2160 grams in ten minutes at 190 DEGREE SYMBOL C.  
*noun*, polymer science  
Szycher's Biomaterials

### **melt spinning**

formation of continuous filaments by extrusion of molten polymer.  
*noun*, polymer science  
Larousse Science

**melt viscosity**

viscosity of molten polymer.

*noun*, polymer science

Larousse Science

**melting point**

temperature at which a solid begins to liquefy.

*noun*, chemistry

Larousse Science

**member**

1. organ of the body, especially an appendage.

*noun*, anatomy

2. constituent part of a structural framework.

*noun*, engineering

Larousse Science

**membrane**

1. thin layer of tissue that covers a surface, lines a cavity, or divides a space or organ.

*noun*, anatomy

Dorland Medical

2. solid or liquid phase which acts as a barrier to prevent coalescence of neighbouring compartments while allowing restricted or regulated passage of one or more molecular species.

*noun*, biology

Biomedical Engineering Handbook

**membrane attack complex MAC.**

complex of complement components C5b-C9 which inserts as a pore into the membrane of target cells leading to cell lysis.

*noun*, immunology

Roitt Immunology

**membrane oxygenator**

blood-gas transfer device in which the blood compartment is shielded from the gas phase by a porous or solid, hydrophobic polymer membrane permeable to gases but not to liquids.

*noun*, medical device technology

Biomedical Engineering Handbook

**membrane polarisation (membrane polarization)**

the sustained transmembrane potential of a cell at rest that arises due to different intracellular and extracellular ionic concentrations.

*noun*, biology

Biomedical Engineering Handbook

**memory**

characteristic of the acquired immune response of lymphocytes whereby a second encounter with a given antigen produces a secondary immune response, faster, greater and longer lasting than the primary immune response.

*noun*, immunology

Roitt Immunology

**memory cells**

clonally expanded T- and B- cells produced during a primary immune response and which are 'primed' to mediate a secondary immune response to the original antigen.

*noun*, immunology

Roitt Immunology

**meninges**

three membranes covering the brain and spinal

cord: dura mater, arachnoid, and pia mater.

*noun*, anatomy

Dorland Medical

**meniscectomy**

surgical removal of an interarticular disc, for example from the temporomandibular joint.

*noun*, surgery

Heinemann Dental

**meniscus**

1. crescent-shaped structure, particularly an interarticular disc of fibrocartilage.

*noun*, anatomy

Heinemann Dental

2. C-shaped fibrocartilage located between the femoral condyles and tibial plateau providing stability and shock absorption and assisting in lubrication of the knee joint.

*noun*, anatomy

Biomedical Engineering Handbook

3. departure from a flat surface where a liquid meets a solid, due to surface tension.

*noun*, physics

Larousse Science

**mental foramen**

large foramen in the mandible, below the second premolar, through which pass the mental branches of the inferior dental nerve, and their accompanying blood vessels.

*noun*, dentistry

Heinemann Dental

**mentoplasty**

reconstructive surgery of the chin.

*noun*, surgery

Dorland Medical

**mer**

repeating structural unit of any high polymer.

*noun*, polymer science

Szycher's Biomaterials

**mercaptan**

any compound containing the --SH group bound to carbon.

*noun*, chemistry

Dorland Medical

**mercury Hg.**

chemical symbol Hg, at. no. 80; a white metallic element which is liquid at atmospheric temperature.

*noun*, chemistry

Larousse Science

**mes(o)-**

denoting the middle.

*prefix*, general

Dorland Medical

**mesenchyma**

meshwork of embryonic connective tissue in the mesoderm from which are formed the connective tissues of the body and the blood and lymphatic vessels.

*noun*, anatomy

Dorland Medical

**mesh**

- expanded metal or plastic used as a reinforcement.  
*noun*, engineering  
Larousse Science
- mesial**  
in the region of, nearer to, the midline.  
*adjective*, anatomy  
Heinemann Dental
- mesio-**  
signifying toward the midline or mesial.  
*prefix*, anatomy  
Heinemann Dental
- mesio-occlusal**  
relating to the mesial and occlusal surfaces of a tooth.  
*adjective*, dentistry  
Heinemann Dental
- mesiolingual**  
relating to the mesial and lingual surfaces of a tooth.  
*adjective*, dentistry  
Heinemann Dental
- mesoderm**  
the middle of the three primary germ layers of the embryo.  
*noun*, embryology  
Dorland Medical
- 4-META**  
a methacryl substituted melittic anhydride used as part of dentine adhesive systems.  
*noun*, dentistry  
Williams
- meta-**  
after  
*prefix*, general  
Larousse Science
- meta-analysis**  
any systematic method that uses statistical analysis to integrate the data from a number of independent studies.  
*noun*, statistics  
Dorland Medical
- metabolic burst**  
burst of increased oxygen uptake when a phagocyte ingests a particle, leading to the production of hydrogen peroxide, superoxide anion, singlet oxygen and the hydroxyl radical.  
*noun*, biology  
Larousse Science
- metabolic means**  
an action which involves an alteration, including stopping, starting or changing the speed of the normal chemical processes participating in, and available for, normal body function.  
*noun*, regulatory affairs  
EU Guidance
- metabolism**  
the sum of all the physical and chemical processes by which living organised substance is produced and maintained (anabolism), and the transformation by which energy is made available for the uses of the organism (catabolism).  
*noun*, biology  
Dorland Medical
- metabolite**  
substance involved in metabolism, being either synthesised during metabolism or taken in from the environment.  
*noun*, biology  
Larousse Science
- metacarpus**  
part of the hand between the wrist and fingers, its skeleton being five bones (metacarpals) extending from the carpus to the phalanges.  
*noun*, anatomy  
Dorland Medical
- metal**  
any material whose Fermi surface lies predominantly in its conduction band, more particularly an element which is held together by metallic bonds and shows characteristic properties, which include high reflectivities and electrical and thermal conductivities and relatively high density compared with non-metals.  
*noun*, chemistry  
Larousse Science
- metal matrix composite**  
class of composite material that incorporates fibres (typically ceramics such as alumina, silicon carbide) in a metallic matrix.  
*noun*, material science  
Larousse Science
- metallic bond**  
the force which holds like ions together in a metallic structure, derived from the attraction between the positively charged ions and the negatively charged free electrons.  
*noun*, metallurgy  
Williams
- metallisation** (metallization)  
the deposition of thin films of metal on to any surface for decorative or electrical purposes.  
*noun*, material science  
Larousse Science
- metallising** (metallizing)  
processes by which polymers are coated with a thin layer of metal.  
*noun*, engineering  
Szycher's Biomaterials
- metallo-organic compound**  
compound in which carbon atoms are linked directly with metal atoms.  
*noun*, chemistry  
Larousse Science
- metallocene**  
type of organometallic complex in which one or more aromatic rings (e.g. C<sub>5</sub>H<sub>5</sub> OR C<sub>6</sub>H<sub>5</sub>) co-ordinate to a metal ion or atom by the pi electrons of the ring.  
*noun*, chemistry  
Oxford Science

**metalloenzyme**

any enzyme containing tightly bound metal atoms.

*noun*, biology  
Dorland Medical

**metallography**

microscopic study of the structure of metals and their alloys.

*noun*, metallurgy  
Oxford Science

**metalloprotein**

protein molecule with a bound metal ion.

*noun*, biology  
Dorland Medical

**metaphase**

second stage of cell division (mitosis or meiosis), in which the chromosomes, each consisting of two chromatids, are arranged in the equatorial plane of the spindle prior to separation.

*noun*, genetics  
Dorland Medical

**metaphysis**

the wider part at the end of a long bone, adjacent to the epiphyseal disc.

*noun*, anatomy  
Dorland Medical

**metaplasia**

change in the type of adult cells in a tissue to a form abnormal for that tissue.

*noun*, biology  
Dorland Medical

**metastable state**

state which is apparently stable, often because of the slowness with which equilibrium is attained, but where the stability can be disturbed.

*noun*, chemistry  
Larousse Science

**metastasis**

transfer of disease from one organ or part of the body to another not directly connected with it.

*noun*, medicine  
Dorland Medical

**metatarsus**

part of the foot between the ankle and the toes, its skeleton being the five bones (metatarsals) extending from the tarsus to the phalanges.

*noun*, anatomy  
Dorland Medical

**methacrylic acid**

colourless liquid  $\text{CH}_2\text{C}(\text{CH}_3)\text{COOH}$  used in the synthesis of a variety of methacrylate resins

*noun*, medical device technology  
Szycher's Biomaterials

**methyl**

pertaining to the chemical group or radical  $\text{CH}_3$

*adjective*, chemistry  
Dorland Medical

**methyl group**

the monovalent radical  $\text{CH}_3$

*noun*, chemistry

Larousse Science

**methylation**

introduction of methyl groups into organic compounds, such as a nucleic acid base.

*noun*, chemistry  
Larousse Science

**mica**

any of a group of silicate minerals with a layered structure.

*noun*, material science  
Oxford Science

**micelle**

1. aggregate of molecules in a colloid.

*noun*, chemistry  
Oxford Science

2. form of crystallite found in partly crystalline polymers.

*noun*, chemistry  
Larousse Science

**Michaelis-Menten curve**

graph that shows the relationship between the concentration of a substrate and the rate of the corresponding enzyme-controlled reaction.

*noun*, biology  
Oxford Science

**miconazole**

antifungal agent.

*noun*, pharmacology  
Dorland Medical

**micro-**

signifying small.

*prefix*, general  
Heinemann Dental

**micro-organism**

microscopic organism including any of the bacteria, viruses, fungi, and protozoa.

*noun*, biology  
Dorland Medical

**microbe**

micro-organism, especially a pathogenic bacterium.

*noun*, biology  
Dorland Medical

**microbiology**

the biology of microscopic or ultramicroscopic organisms such as bacteria, viruses or fungi.

*noun*, biology  
Larousse Science

**microdontia**

condition of having abnormally small teeth.

*noun*, dentistry  
Heinemann Dental

**microelectrode**

an electrode with a tip less than 1  $\mu\text{m}$  wide that can be used to non-destructively puncture a cell membrane, thus allowing intracellular recordings and measurements.

*noun*, physics  
Larousse Science

**microencapsulation**

1. a process whereby a substance in a state of extreme comminution is enclosed in sealing capsules from which components of the substance may be released by impact, solution, heat or other means.

*noun*, chemistry  
Larousse Science

2. process whereby a cell is enclosed by a thin polymeric membrane, the nature of which is designed to permit certain cellular functions whilst protecting it from its environment.

*noun*, biomaterials science  
Williams

#### **microfabrication**

device or component manufacture on a small scale (typically of the order of micrometers).

*noun*, engineering  
Larousse Science

#### **micrognathia**

unusual smallness of the jaws, especially the lower jaw.

*noun*, medicine  
Dorland Medical

#### **microgram**

unit of mass equal to one-millionth of a gram (10<sup>-6</sup> kg). symbol  $\mu\text{g}$ .

*noun*, general  
Larousse Science

#### **microleakage percolation**

term used for the passing of fluids, microorganisms or ions between a dental restoration and the adjacent cavity walls.

*noun*, dentistry  
Heinemann Dental

#### **micrometre**

one-millionth of a metre. Symbol  $\mu\text{m}$ .

*noun*, general  
Larousse Science

#### **micronucleus**

small nucleus.

*noun*, biology  
Dorland Medical

#### **microphage**

any small phagocytic cell in blood or lymph, chiefly the polymorphonuclear leucocytes (neutrophils).

*noun*, biology  
Larousse Science

#### **microporosity**

minute cavities generally found in heavy engineering sections usually due to lack of efficient feeding during solidification or to release of dissolved gas.

*noun*, engineering  
Larousse Science

#### **microporous material**

polymer or other material made permeable to gases or liquids by creation of very fine pores, used for filtration of liquids, etc.

*noun*, material science  
Larousse Science

#### **microscope**

instrument used for obtaining magnified images of small objects.

*noun*, physics  
Larousse Science

#### **microscopic**

invisible or hardly visible without the aid of a microscope.

*adjective*, general  
Larousse Science

#### **microscopy**

study of phenomena using a microscope.

*noun*, general  
Larousse Science

#### **microstructure**

units of microscopic size (about 1 to 100  $\mu\text{m}$  in diameter) which occur in materials.

*noun*, material science  
Larousse Science

#### **microtome**

instrument for cutting thin sections of specimens, especially sections 1-10 $\mu\text{m}$  thick for light microscopy.

*noun*, biology  
Larousse Science

#### **microtubule**

tubular structure about 24nm in diameter formed by the aggregation of tubulin dimers and small amount of associated proteins in a helical array.

*noun*, biology  
Larousse Science

#### **microwave diathermy**

application to specific areas of the body of electromagnetic energy in the microwave frequency bands of 915 megahertz to 2,450 megahertz.

*noun*, medicine  
CFR

Notes: Intended to generate deep heat within body tissues for the treatment of selected medical conditions such as relief of pain, muscle spasms, and joint contractures

#### **micturation**

process of urination.

*noun*, biology  
Dorland Medical

#### **middle molecules**

molecules of intermediate molecular weight (roughly 1000 to 30,000 daltons) which are presumed to be responsible for the toxic manifestations of end-stage renal disease and therefore should be eliminated by substitutive therapy.

*noun*, medicine  
Biomedical Engineering Handbook

#### **migration**

1. an apparently spontaneous change of place, as of symptoms or substances.

*noun*, medicine

2. diapedesis, the outward passage of blood through vessels walls.

*noun*, biology  
Dorland Medical

#### **migration inhibition factor**

lymphokine which acts on macrophages so as to increase their adhesiveness.

*noun*, immunology  
Larousse Science

**mill**

mechanical device used to mix and compound plastics and rubbers.

*noun*, engineering  
Szycher's Biomaterials

**milling**

machine process in which metal is removed from an object by a revolving multiple-tooth cutter.

*noun*, engineering  
Larousse Science

**mimicry**

adoption by one species of the colour, habits, sounds or structure of another species.

*noun*, biology  
Larousse Science

**minimal risk**

a risk is minimal where the probability and magnitude of harm or discomfort anticipated in any proposed research are not greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

*noun*, medicine  
IRB Guidebook

Notes: For example, the risk of drawing a small amount of blood from a healthy individual for research purposes is no greater than the risk of doing so as part of routine physical examination.

**minimally invasive surgery MIS.**

surgical intervention, whether diagnostic or curative, that causes patients the least possible physical trauma.

*noun*, surgery  
Black's Medical

**minimum lethal dosage MLD.**

the smallest amount of toxin that will kill an experimental animal.

*noun*, toxicology  
Dorland Medical

**miniplate**

small bone plate.

*noun*, surgery  
Dorland Medical

**minor histocompatibility antigens**

non-MHC encoded cell surface processed peptides which, in association with MHC-encoded molecules, contribute to graft rejection, albeit not usually as severe as that due to MHC mismatch.

*noun*, immunology  
Roitt Immunology

**miscibility**

property enabling two or more liquids to dissolve when brought together and thus form one phase.

*noun*, chemistry  
Larousse Science

**mitochondrion mitochondria**

mobile cytoplasmic organelle of eukaryotes whose

main function is the generation of ATP by aerobic respiration.

*noun*, biology  
Larousse Science

**mitogen**

substance that induces mitosis and cell transformation.

*noun*, biology  
Dorland Medical

**mitosis**

method of indirect cell division in which the two daughter nuclei normally receive identical complements of the number of chromosomes characteristic of the somatic cells of the species.

*noun*, genetics  
Dorland Medical

**mitotic figure**

microscopic appearance of the achromatic spindle with chromosomes attached, an indication of cell division.

*noun*, genetics  
ASTM

**mitral**

pertaining to the mitral valve.

*adjective*, anatomy  
Dorland Medical

**mitral regurgitation MR.**

backflow of blood from the left ventricle into the left atrium due to insufficiency of the mitral valve.

*noun*, medicine  
Dorland Medical

**mitral stenosis**

narrowing of the left atrioventricular orifice.

*noun*, medicine  
Dorland Medical

**mitral valve**

valve between the left atrium and left ventricle, usually having two cusps (anterior and posterior).

*noun*, anatomy  
Dorland Medical

**mitral valve prosthesis**

implantable device that replaces a diseased mitral valve.

*noun*, medical device technology  
Williams

**mitral valve repair**

procedure for restoring normal function to a diseased mitral valve without replacing it in its entirety.

*noun*, surgery  
Williams

**mobility**

the looseness of a tooth.

*noun*, dentistry  
Heinemann Dental

**mode**

the most frequent value in a set of observations.

*noun*, statistics  
Larousse Science

**model**

1. description or analogy used to help visualise something that cannot be directly observed.  
*noun, general*  
Longmans
2. system of postulates, data, inferences or equations presented as a mathematical description of an entity or state of affairs.  
*noun, general*  
Heinemann Dental
3. in dentistry, a reproduction in metal or plastics made from an impression of part of the dentition.  
*noun, general*  
Heinemann Dental

**modification**

the process or result of changing the form or characteristics of an object or substance.  
*noun, general*  
Dorland Medical

**modular**

form of construction in which units, often with differing functions, are quickly interchangeable.  
*adjective, engineering*  
Larousse Science

**modulus**

one of the constants that determine the deformation of a material under stress, each being the ratio of stress to strain up to the elastic limit.  
*noun, physics*  
Larousse Science  
Notes: The different moduli relate to the different types of stress system.

**modulus of elasticity *Young's Modulus***

ratio of stress to strain in a material when subjected to stresses below the proportional limit of the material.  
*noun, engineering*  
Williams  
Notes: Known as Young's Modulus when the applied stress is either tensile or compressive.

**modulus of rigidity *shear modulus***

ratio of shearing stress to shearing strain in a material when subjected to stresses below the proportional limit of the material.  
*noun, engineering*  
Williams

**moiré effect**

pattern formed by interference or combination between two sets of regular divisions, for instance between two line-screens in printing or between the TV raster and a striped object within the scene.  
*noun, physics*  
Larousse Science

**molality**

concentration of a solution expressed as the number of moles of dissolved substance per kilogram of solvent.  
*noun, chemistry*  
Larousse Science

**molar**

1. pertaining to a molar tooth.  
*adjective, dentistry*
2. pertaining to a mole of a substance.  
*adjective, dentistry*

Dorland Medical

**molar volume**

volume occupied by one mole of a substance under specified conditions.  
*noun, chemistry*  
Larousse Science

**molarity**

concentration of a solution expressed as the number of moles of dissolved substance per dm<sup>3</sup> of solution.  
*noun, chemistry*  
Larousse Science

**mole**

1. pigmented fleshy growth or (loosely) any blemish of the skin.  
*noun, biology*  
Dorland Medical
2. molecular weight of a substance expressed in grams.  
*noun, chemistry*  
Szycher's Biomaterials

**molecular beam epitaxy MBE.**

deposition of molecular species on a crystalline substrate by effusing a molecular beam from an oven containing the pure material.  
*noun, material science*  
Larousse Science

**molecular biology**

study of the structure and function of macromolecules in living cells.  
*noun, biology*  
Larousse Science

**molecular hybridisation (molecular hybridization)**

formation of a partially or wholly complementary nucleic acid duplex by association of single strands.  
*noun, biology*  
Dorland Medical

**molecular structure**

the way in which atoms are linked together in a molecule.  
*noun, chemistry*  
Larousse Science

**molecular weight MW.**

sum of the relative atomic masses of the constituent atoms of a molecule.  
*noun, chemistry*  
Larousse Science

**molecular weight distribution**

relative amounts of chains of different molecular weights that comprise a given specimen of polymer.  
*noun, polymer science*  
Szycher's Biomaterials

**molecule**

finite group of atoms which is capable of independent existence and has properties characteristic of the substance of which it is the unit.  
*noun, chemistry*  
Larousse Science

**molybdenum Mo.**

symbol Mo, at. no. 42; a metallic element in the sixth group of the periodic system.

*noun*, chemistry  
Larousse Science

**moment of inertia**

sum of the products formed by multiplying the mass of each element of a structure by the square of the distance from a specified line.

*noun*, engineering  
McGraw-Hill Engineering

**monitoring**

collection and analysis of data as a process or project progresses, to assure the appropriateness of the research and assessment procedures, and the quality of the output.

*verb*, regulatory affairs  
IRB Guidebook

**monoamine**

amine containing one amino group, e.g., serotonin, dopamine, epinephrine, and norepinephrine.

*noun*, chemistry  
Dorland Medical

**monoclinic**

pertaining to a crystal structure in which the three crystal axes are of unequal lengths, having one of their intersections oblique and the other two at right angles.

*adjective*, chemistry  
Larousse Science

**monoclonal antibody**

homogeneous antibody derived from a single B-cell clone, all bearing identical antigen-binding sites.

*noun*, immunology  
Roitt Immunology

**monocyte**

mononuclear phagocyte found in blood and which is the precursor of the tissue macrophage.

*noun*, immunology  
Roitt Immunology

**monodisperse polymer**

polymer in which all chains are of equal length.

*noun*, polymer science  
Larousse Science

**monofilament**

single filament of indefinite length.

*noun*, material science  
Larousse Science

**monolayer**

single layer of cells growing on a surface.

*noun*, biology  
ASTM

**monolithic**

1. consisting of or constituting a single unit.

*adjective*, general

2. constituting a massive undifferentiated and often rigid whole.

*adjective*, general

Longmans

**monomer**

substance comprised of small molecules with high

chemical reactivity, each being capable of linking up with others to produce polymer chains.

*noun*, polymer science  
Larousse Science

**monomolecular**

pertaining to a single molecule or to a layer one molecule thick.

*adjective*, chemistry  
Dorland Medical

**mononuclear**

having only one nucleus.

*adjective*, biology  
Dorland Medical

**monovalent**

capable of combining with one atom of hydrogen or its equivalent, having an oxidation number or coordination number of one.

*adjective*, chemistry  
Larousse Science

**morbid**

pertaining to, affected with, or inducing disease.

*adjective*, medicine  
Dorland Medical

**morbidity**

condition of being diseased or morbid.

*noun*, medicine  
Dorland Medical

**moribund**

in a dying state.

*adjective*, medicine  
Dorland Medical

**-morph**

signifying shape or form.

*suffix*, general  
Williams

**morphine**

the principal and most active alkaloid of opium.

*noun*, pharmacology  
Dorland Medical

**morphogenesis**

evolution and development of form.

*noun*, embryology  
Dorland Medical

**morphology**

1. science of the form and structure of organisms.

*noun*, biology  
Dorland Medical

2. study of the shapes of microstructural units in materials.

*noun*, material science  
Larousse Science

**motility**

ability to move spontaneously.

*noun*, biology  
Dorland Medical

**motor**

muscle, nerve, or centre that effects or produces motion.

*noun*, biology

Dorland Medical

**motor nerve**

efferent nerve that stimulates muscle contraction.

*noun*, anatomy

Dorland Medical

**mould (mold)**

1. multi-cellular fungi which mostly reproduce by spore formation.

*noun*, biology

Larousse Science

(mold)

2. hollow shape in which something is cast or fashioned.

*noun*, general

Heinemann Dental

**mould release agent**

speciality material often applied to mould surfaces to aid release of product at end of moulding cycle.

*noun*, engineering

Larousse Science

**mouth**

an opening, especially the anterior opening of the alimentary canal, the cavity containing the tongue and teeth.

*noun*, anatomy

Dorland Medical

**MP35N**

trade name for a cobalt-nickel alloy with significant amounts of chromium and nickel.

*noun*, biomaterials science

Williams

Notes: Exists as a multiphase structure, giving one of the strongest cobalt-based alloys to be used as a biomaterial. The composition and specification are defined in ASTM F562. Applications include orthopaedic prostheses and electrodes.

**mucin**

group of glycoproteins occurring in mucus, saliva and other secretions.

*noun*, chemistry

Larousse Science

**muco-**

signifying mucus.

*prefix*, biology

Heinemann Dental

**mucogingival junction**

line at which the alveolar mucous membrane and the attached gingiva unite.

*noun*, dentistry

Heinemann Dental

**mucopolysaccharide**

glycosaminoglycan.

*noun*, chemistry

Dorland Medical

**mucosa**

mucous membrane.

*noun*, anatomy

Dorland Medical

**mucosal**

relating to the mucous membrane.

*adjective*, anatomy

Szycher's Biomaterials

**mucous**

secreting, producing, or containing mucus.

*adjective*, biology

Dorland Medical

**mucous membrane**

layer of tissue comprising an epithelium supported on connective tissue.

*noun*, anatomy

Oxford Science

**mucus**

free slime of the mucous membranes, composed of secretion of the glands, various salts, desquamated cells, and leucocytes.

*noun*, biology

Dorland Medical

**multifilament**

manufactured fibre yarns composed of a plurality of fine continuous filaments or strands.

*adjective*, polymer science

Szycher's Biomaterials

**multimodal**

any distribution that exhibits three or more modes.

*adjective*, general

Williams

Notes: Particularly with respect to the particle size distribution of a powder or the disperse phase of a composite material.

**multinucleate**

having many nuclei.

*adjective*, biology

Larousse Science

**multinucleate giant cell**

any giant cell that has a multiplicity of nuclei, typically formed by the fusion of macrophages.

*noun*, anatomy

Williams

**multiphase**

said of any liquid or solid that exists with two or more phases present.

*adjective*, chemistry

Williams

Notes: The phases may be thermodynamically stable or metastable.

**mural**

pertaining to or occurring in the wall of a body cavity.

*adjective*, anatomy

Dorland Medical

**murine**

pertaining to mice.

*adjective*, biology

Roitt Immunology

**murmur**

an irregular sound which follows, accompanies or replaces the normal heart sounds and often indicates disease of the valve of the heart.

*noun*, medicine

Larousse Science

**muscle**

organ which by contraction produces movement of an organism, or a part of an organism.

*noun*, anatomy  
Dorland Medical

**muscular dystrophy**

group of genetically determined, painless, degenerative myopathies marked by muscular weakness and atrophy without nervous system involvement.

*noun*, medicine  
Dorland Medical

**musculature**

muscular apparatus of the body or of a part.

*noun*, anatomy  
Dorland Medical

**musculoskeletal**

pertaining to or comprising the skeleton and muscles.

*adjective*, anatomy  
Dorland Medical

**mutagen**

agent that causes an increase in the number of mutants in a population.

*noun*, genetics  
Oxford Science

**mutagenesis**

induction of genetic mutation.

*noun*, genetics  
Dorland Medical

**mutagenicity**

property of being able to induce genetic mutation.

*noun*, genetics  
Dorland Medical

**mutant**

organism that has undergone genetic mutation.

*noun*, genetics  
Dorland Medical

**mutation**

sudden random change in the genetic material of a cell that may cause it and all cells derived from it to differ in appearance or behaviour from the normal type.

*noun*, genetics  
Oxford Science

**mutation rate**

frequency, per gamete, of mutations of a particular gene or a class of genes.

*noun*, genetics  
Larousse Science

**myalgia**

sensation of pain in muscle.

*noun*, medicine  
Larousse Science

**myasthenia**

muscular weakness.

*noun*, medicine  
Larousse Science

**myc(o)-**

relating to a fungus.

*prefix*, biology  
Dorland Medical

**mycology**

study of fungi.

*noun*, biology  
Larousse Science

**mycoplasma**

one of group of prokaryotes that lack a rigid cell wall and are considered to be the smallest living cells

*noun*, biology  
Oxford Science

**mycosis**

any disease caused by fungi.

*noun*, medicine  
Dorland Medical

**myelin**

white fatty substance which forms the medullary sheath of nerve fibres.

*noun*, biology  
Larousse Science

**myelinated nerve**

nerve whose axons are encased in a myelin sheath.

*noun*, anatomy  
Dorland Medical

**myeloblast**

immature cell found in the bone marrow and not normally in the peripheral blood.

*noun*, anatomy  
Dorland Medical

**myo-**

signifying muscle.

*prefix*, anatomy  
Heinemann Dental

**myoblast**

embryonic muscle cell which will develop into a muscle fibre.

*noun*, anatomy  
Larousse Science

**myocardial infarction**

infarction or death of heart muscle.

*noun*, medicine  
Larousse Science

**myocarditis**

inflammation of the muscle of the heart.

*noun*, medicine  
Larousse Science

**myocardium**

middle and thickest layer of the heart wall, composed of cardiac muscle.

*noun*, anatomy  
Dorland Medical

**myocele**

protrusion of a muscle through its ruptured sheath.

*noun*, medicine  
Dorland Medical

**myofibre (myofiber)**

muscle fibre.

*noun*, anatomy

Dorland Medical

**myofibril**

the contractile filament, consisting of actin, myosin and associated proteins, within muscle cells.

*noun*, anatomy  
Larousse Science

**myofibroblast**

atypical fibroblast combining the ultrastructural features of a fibroblast and a smooth muscle cell.

*noun*, anatomy  
Dorland Medical

**myofilament**

any of the ultra-microscopic threadlike structures composing the myofibrils of striated muscle fibres.

*noun*, anatomy  
Dorland Medical

**myofunctional appliance**

orthodontic appliance that utilises muscular force to effect treatment.

*noun*, dentistry  
Heinemann Dental

**myopathy**

any disease of the muscle.

*noun*, medicine  
Dorland Medical

**myopia**

condition of the eye in which, with the eye at rest, parallel rays of light come to a focus in front of the retina.

*noun*, ophthalmology  
Larousse Science

**myoplasty**

reconstructive surgery on muscle.

*noun*, surgery  
Dorland Medical

**myosarcoma**

malignant tumour derived from muscle tissue.

*noun*, medicine  
Dorland Medical

**myosin**

protein of the myofibril.

*noun*, biology  
Dorland Medical

**myositis**

inflammation affecting voluntary muscle.

*noun*, medicine  
Heinemann Dental

**myositis ossificans**

condition of the muscles, tendons and ligaments, in which bone is irregularly deposited in the affected site.

*noun*, medicine  
Heinemann Dental

**nail**

1. horny cutaneous plate on the dorsal surface of the distal end of a finger or toe.

*noun*, anatomy

2. rod used for fixation of fragments of fractured bones.

*noun*, medical device technology

Dorland Medical

**name of the device**

any information necessary for the user to identify the device and to distinguish it from similar devices.

*noun*, regulatory affairs  
Canadian Medical Devices

**nan(o)-**

signifying very small, literally dwarf-like.

*prefix*, general  
Dorland Medical

**nano-**

prefix for 10<sup>9</sup> i.e. equivalent to millimicro or one thousand millionth. Symbol n.

*prefix*, general  
Larousse Science

**nanoparticle**

any particle of a substance with dimensions in the region of one-tenth of a micron or less.

*noun*, chemistry  
Williams

**nanotechnology**

the engineering of matter at a scale approaching that of individual atoms.

*noun*, engineering  
Larousse Science

**nas(o)-**

pertaining to the nose.

*prefix*, anatomy  
Dorland Medical

**nasopharyngeal catheter**

device consisting of a filiform catheter that is intended for use in probing or dilating the eustachian tube.

*noun*, medical device technology  
CFR

**natta catalyst**

one of the catalysts in stereo-specific polymerisation reactions, particularly catalyst containing titanium chloride or an aluminium alkyl.

*noun*, chemistry  
Szycher's Biomaterials

**natural**

1. in accordance with or determined by nature.

*adjective*, general

2. innate, inherent.

*adjective*, general

3. having a specified character or attribute by nature.

*adjective*, biology

4. existing in nature without human or medical intervention.

*noun*, biology

Longmans

**natural body orifice**

any of the natural external outlets of the body.

*noun*, anatomy  
Williams

Notes: Includes the mouth, nose, ear, anus, urogenital

openings and the external surface of the eyes.

**natural killer cell NK cell.**

large granular lymphocyte which does not rearrange nor express either immunoglobulin or T-cell receptor genes but is able to recognise and destroy certain tumour and virally-infected cells in an MHC and antibody-independent manner.

*noun*, immunology

Roitt Immunology

**natural resin**

one of a heterogeneous family of solid, or semi-solid materials derived from secretions of plants and trees.

*noun*, polymer science

Szycher's Biomaterials

**natural rubber**

the rubber material obtained from the latex exuded from certain plants, such as *hevea brasiliensis*, composed essentially of cis-1,4-polyisoprene.

*noun*, polymer science

Szycher's Biomaterials

**ne(o)**

signifying new or recent.

*prefix*, general

Dorland Medical

**nebuliser (nebulizer)**

device used to add particulate liquids via a spray to inspired gases that are directly delivered to the airways.

*noun*, medical device technology

Szycher's Biomaterials

**neck**

constricted portion, such as the part connecting the head and trunk, or the constricted part of an organ or other structure.

*noun*, anatomy

Dorland Medical

**necr(o)-**

signifying death.

*prefix*, biology

Dorland Medical

**necropsy autopsy**

examination of a body after death.

*noun*, medicine

Dorland Medical

**necrosis**

1. morphological changes indicative of cell death caused by progressive enzymatic degradation.

*noun*, biology

Dorland Medical

2. death of a cell (or of groups of cells) while still part of the living body.

*noun*, biology

Larousse Science

**necrotising fasciitis (necrotizing fasciitis)**

gas forming, fulminating, necrotic infection of the superficial and deep fascia, resulting in thrombosis of the subcutaneous vessels and gangrene of the underlying tissues.

*noun*, medicine

Dorland Medical

**needle**

sharp instrument for suturing or puncturing.

*noun*, general

Dorland Medical

**negative control**

material or substance which, when tested by the procedure described in a specified standard, demonstrates the suitability of the procedure to yield a reproducible, appropriate negative, non-reactive or background response in the test system.

*noun*, biomaterials science

ISO

**negative control material**

material which, when tested in accordance with a specified protocol, does not produce a cytotoxic response.

*noun*, biomaterials science

ISO

**negative predictive value NPV.**

probability that a clinical sample testing negative with a particular assay really does not contain any of the analyte being measured.

*noun*, statistics

Witkin

**neon Ne.**

element, symbol Ne, at. no. 10, inert gas.

*noun*, chemistry

Dorland Medical

**neonatal**

pertaining to the first four weeks after birth.

*adjective*, medicine

Dorland Medical

**neonate**

new-born infant.

*noun*, medicine

Dorland Medical

**neoplasia**

the formation of a neoplasm.

*noun*, medicine

Dorland Medical

**neoplasm**

any new and abnormal growth, specifically a tumour in which cell multiplication is uncontrolled and progressive.

*noun*, biology

Dorland Medical

**neoprene**

synthetic rubber made by polymerising the compound 2-chlorobuta -1,2-diene.

*noun*, polymer science

Oxford Science

**nephro(o)-**

relating to the kidney.

*prefix*, biology

Dorland Medical

**nephritis**

inflammation of the kidney.

*noun*, medicine

Dorland Medical

**nephron**

structural and functional unit of the kidney.

*noun*, anatomy  
Dorland Medical

**nephrorrhaphy**

fixation, by suture, of a displaced kidney.

*noun*, surgery  
Larousse Science

**nephrotomy**

the making of an incision into the kidney.

*noun*, surgery  
Larousse Science

**nephrotoxic**

destructive to kidney cells.

*adjective*, toxicology  
Dorland Medical

**nerve**

collection of axons leading to or from the central nervous system.

*noun*, anatomy  
Larousse Science

**nerve block**

production of insensibility of a part by injecting an anaesthetic into the nerve or nerves supplying it.

*noun*, medicine  
Larousse Science

**nerve cuff**

tubular sheath used to encase a nerve for aid in repairing the nerve and for capping the end of the nerve to prevent the formation of neuroma.

*noun*, medical device technology  
CFR

**nerve ending**

distal end of a nerve axon, normally a synapse.

*noun*, anatomy  
Larousse Science

**nerve growth factor**

multimeric polypeptide found in a variety of peripheral tissues that attracts developing neurites of the sensory and sympathetic systems to the tissue to form synapses.

*noun*, biology  
Larousse Science

**nerve root**

origin of a nerve in the central nervous system.

*noun*, anatomy  
Larousse Science

**nerve stimulator**

device used to electrically stimulate a nerve to relieve severe intractable pain.

*noun*, medical device technology  
Szycher's Biomaterials

**nervous system**

whole system of nerves, ganglia and nerve endings of the body of an animal, considered collectively.

*noun*, anatomy  
Larousse Science

**network modifier**

metal ions such as Na<sup>+</sup>, Ca<sup>2+</sup>

etc. in silicate glasses, which open up the network of silica tetrahedra and thus modify the properties of the glass.

*noun*, material science  
Larousse Science

**network polymer**

any polymer synthesised from monomers having two or more functional groups, which react together to form a large three dimensional network.

*noun*, polymer science  
Szycher's Biomaterials

**neur(o)-**

signifying nerve.

*prefix*, anatomy  
Dorland Medical

**neural crest**

cellular band dorsolateral to the embryonic neural tube that gives origin to the cerebrospinal ganglia.

*noun*, anatomy  
Dorland Medical

**neural network**

network of processors designed to mimic the transmission of impulses in the human brain.

*noun*, physics  
Oxford Science

**neuralgia**

existence of pain in some portion of, or throughout the whole of, the distribution of a sensory nerve, without any distinctly recognisable structural change in the nerve or nerve-centres.

*noun*, medicine  
Black's Medical

**neuritis**

inflammation of a nerve.

*noun*, medicine  
Dorland Medical

**neurofibroma**

tumour composed of fibrous tissue derived from the connective tissue sheath of a nerve.

*noun*, medicine  
Larousse Science

**neurogenesis**

development of nervous tissue.

*noun*, biology  
Dorland Medical

**neuroleptic**

anti-psychotic agent.

*noun*, pharmacology  
Dorland Medical

**neuroma**

tumour growing from a nerve or made up largely of nerve cells and nerve fibres.

*noun*, medicine  
Dorland Medical

**neuromuscular**

pertaining to nerves and muscles.

*adjective*, anatomy  
Dorland Medical

**neuromuscular junction**

point where a muscle fibre comes into contact with a motor neurone carrying nerve impulses from the central nervous system.

*noun*, anatomy  
Oxford Science

**neuromuscular stimulator**

an implantable device that provides electrical stimulation to a patient's nerve to cause muscles to contract, thus improving the gait in a patient with a paralysed leg.

*noun*, medical device technology  
CFR

Notes: Specifically used to stimulate a nerve such as the femoral nerve.

**neuron**

any of the conducting cells of the nervous system.

*noun*, anatomy  
Dorland Medical

**neuropathy**

functional disturbance or pathological change in the peripheral nervous system, sometimes limited to non-inflammatory lesions as opposed to those of neuritis.

*noun*, medicine  
Dorland Medical

**neuropeptide**

any of the molecules composed of short chains of amino acids found in brain tissue.

*noun*, biology  
Dorland Medical

**neurosurgical implant**

a device introduced by surgically penetrating the skin or mucosa of the body with the intention that it remain indefinitely within the body following surgery.

*noun*, medical device technology  
ASTM

**neurosurgical instrument**

any co-operative device used during surgical procedures involving the implantation of neurosurgical implants.

*noun*, medical device technology  
ASTM

**neurotoxicity**

quality of exerting a destructive or poisonous effect upon nerve tissue.

*noun*, toxicology  
Dorland Medical

**neurotransmitter**

chemical that mediates the transmission of a nerve impulse across a synapse.

*noun*, biology  
Oxford Science

**neurovascular**

pertaining to both nervous and vascular elements.

*adjective*, anatomy  
Dorland Medical

**neutropenia**

diminished number of neutrophils in the blood.

*noun*, biology

Dorland Medical

**neutrophil** *polymorphonuclear leucocyte*

the major circulating phagocytic polymorphonuclear granulocyte.

*noun*, anatomy  
Roitt Immunology

Notes: Enters tissues early in an inflammatory response and is also able to mediate antibody-dependent cell-mediated cytotoxicity (ADCC).

**new drug application NDA.**

request for FDA approval to market a new drug.

*noun*, regulatory affairs  
IRB Guidebook

**Newton N.**

symbol N. The SI unit of force, being the force required to give a mass of one kilogram an acceleration of 1 ms SUPERSCRIP T -2.

*noun*, physics  
Oxford Science

**Newtonian fluid**

fluid in which the velocity gradient is directly proportional to the shear stress.

*noun*, physics  
Oxford Science

**nickel Ni.**

symbol Ni, at. no. 28; silver-white metallic element.

*noun*, chemistry  
Larousse Science

**nickel carbonyl**

Ni(CO)SUBSCRIPT4. A volatile compound of nickel, formed by passing carbon monoxide over the heated metal.

*noun*, chemistry  
Larousse Science

**nicotinamide adenine dinucleotide NAD.**

coenzyme composed of nicotinamide mononucleotide in pyrophosphate linkage with adenosine monophosphate.

*noun*, biology  
Dorland Medical

**nidus**

site of infection within the body from which it can spread to other tissues.

*noun*, medicine  
Black's Medical

**niobium Nb.**

symbol Nb, at. no. 41; rare metallic element.

*noun*, chemistry  
Larousse Science

**Nitinol**

trade name for titanium-nickel alloys of approximate equiatomic proportions that exhibit the shape memory effect.

*noun*, biomaterials science  
Williams

Notes: Used in a number of medical applications, including orthodontic appliances, intravascular stents and vena cava filters.

**nitriding**

the process of hardening the surface of steel by producing a layer of iron nitride.

*noun*, metallurgy  
Oxford Science

**nitrogen N.**

element, symbol N, at. no.7, gas.  
*noun*, chemistry  
Dorland Medical

**noble gases**

elements helium, neon, argon, krypton, xenon and radon-222.  
*noun*, chemistry  
Larousse Science

**noble metal**

metal, such as gold, silver and platinum which have a relatively positive electrode potential, and which do not enter readily into chemical combination with non-metals.  
*noun*, metallurgy  
Larousse Science

**node**

small mass of tissue in the form of a swelling, knot, or protuberance, either normal or pathological.  
*noun*, biology  
Dorland Medical

**nodule**

small node or boss which is solid and can be detected by touch.  
*noun*, biology  
Dorland Medical

**non-absorbable suture**

suture material which is not absorbed in the body.  
*noun*, medical device technology  
Dorland Medical  
Notes: Typically made of nylon, polypropylene, polyester or PTFE.

**non-conformity**

non-fulfilment of a specified requirement.  
*noun*, regulatory affairs  
CFR

**non-constrained joint prosthesis**

partial or total joint replacement prosthesis which minimally restricts prosthesis movement in one or more planes, its components having no across-the-joint linkage.  
*noun*, medical device technology  
CFR

**non-destructive testing NDT.**

methods of inspecting materials and products without affecting their subsequent properties and performance.  
*noun*, engineering  
Larousse Science

**non-invasive**

said of a diagnostic device or procedure that does not by design or intention penetrate or pierce the skin or mucous membranes of the body, the ocular cavity, or the urethra, or enter the ear beyond the external auditory canal, the nose beyond the nares, the mouth beyond the pharynx, the anal canal beyond the rectum, or the vagina beyond the cervical os.  
*adjective*, medicine

CFR

**non-significant risk device**

an investigational medical device that does not present significant risk to the patient.  
*noun*, regulatory affairs  
IRB Guidebook

**non-specific immunity**

mechanisms whereby the body is protected against microbial invasion which do not depend upon the mounting of a specific immune response.  
*noun*, immunology  
Larousse Science

**non-therapeutic research**

research that has no likelihood or intent of producing a diagnostic, preventive, or therapeutic benefit to the current subjects, although it may benefit subjects with a similar condition in the future.  
*noun*, regulatory affairs  
IRB Guidebook

**non-thrombogenicity**

characteristic of a material that leads to minimal thrombogenicity.  
*noun*, biomaterials science  
ESB Consensus Conference I

**non-viable**

having no potential for metabolism nor multiplication.  
*noun*, regulatory affairs  
CEN

**non-woven**

pertaining to a fabric that is made without weaving or knitting.  
*adjective*, material science  
Longmans

**nonwoven fabrics**

staple lengths of natural or synthetic fibres, monofilaments, or multi-filaments mechanically positioned into a random pattern, then bonded with suitable surface resins to form continuous sheets.  
*noun*, polymer science  
Szycher's Biomaterials

**normal distribution**

distribution widely used in statistics, to model the variation in a set of observations, as an approximation to other distributions, or as the asymptotic distribution of statistics from large samples.  
*noun*, statistics  
Larousse Science

**normalising (normalizing)**

process of heating steel to above an appropriate critical temperature followed by cooling in still air.  
*noun*, metallurgy  
Oxford Science

**nose prosthesis**

device intended to be implanted to augment or reconstruct the nasal dorsum.  
*noun*, medical device technology  
CFR

**notch**

indentation on the edge of a bone or other organ.

*noun*, anatomy  
Dorland Medical

**notch sensitivity**

extent to which the endurance of materials, as determined on smooth and polished specimens, is reduced by surface discontinuities, such as tool marks, notches and changes in section, which are common features of actual components.

*noun*, engineering  
Larousse Science

**nuclear DNA**

DNA of the chromosomes found in the nucleus of a eukaryotic cell.

*noun*, genetics  
Dorland Medical

**nuclear magnetic resonance**

measure, by means of applying an external magnetic field to a solution in a constant radiofrequency field, of the magnetic moment of atomic nuclei to determine the structure of organic compounds.

*noun*, chemistry  
Dorland Medical

**nuclear magnetic resonance spectroscopy**

routine analytical tool for detecting atomic nuclei with spin (SUPERSCRIPT1H, SUPERSCRIPT14C, SUPERSCRIPT 15N, SUPERSCRIPT 19F, SUPERSCRIPT31P etc.) in molecules, by absorption at resonance.

*noun*, chemistry  
Larousse Science

**nuclear whole body counter**

device intended to measure the amount of radionuclides in the entire body.

*noun*, medical device technology  
CFR

**nucleating agent**

substance added to molten materials and solutions to accelerate the onset and increase the rate of crystallisation.

*noun*, metallurgy  
Larousse Science

**nucleation**

initiation of processes, such as crystallisation or fracture of materials.

*noun*, material science  
Larousse Science

**nuclei**

centres or 'seeds' from which crystals begin to grow during solidification.

*noun*, material science  
Larousse Science

**nucleic acid**

general term for natural polymers in which bases (purines or pyrimidines) are attached to a sugar phosphate backbone.

*noun*, biology  
Larousse Science

**nucleolus**

rounded refractile body in the nucleus of most cells, which is the site of synthesis of ribosomal RNA.

*noun*, biology  
Dorland Medical

**nucleophile**

ion or molecule that can donate electrons.

*noun*, chemistry  
Oxford Science

**nucleotide**

one of the compounds into which nucleic acid is split by action of nuclease.

*noun*, chemistry  
Dorland Medical

**nucleus**

1. central core of a body or object.

*noun*, general  
Dorland Medical

2. central core of an atom that contains most of its mass.

*noun*, chemistry

3. large body embedded in the cytoplasm of all plant and animal cells (but not bacterial cells) that contains the genetic material DNA.

*noun*, biology  
Oxford Science

**nucleus pulposus**

inner core of an intervertebral disc.

*noun*, anatomy  
Black's Medical

**nude mouse**

mouse which is T-cell deficient due to a homozygous gene defect (nu/nu) resulting in the absence of a thymus (and also lack of body hair).

*noun*, immunology

Roitt Immunology

Notes: Used experimentally in the study of immunodeficiency phenomena.

**null hypothesis**

proposition, to be tested statistically, that the experimental intervention has "no effect," meaning that the treatment and control groups will not differ as a result of the intervention.

*noun*, statistics  
IRB Guidebook

**number average molecular weight**

the total molecular weight of all molecules in a polymer sample divided by the number of molecules present.

*noun*, polymer science  
Szycher's Biomaterials

**nutrient**

substance or mixture of substances that provide nourishment.

*noun*, biology  
Larousse Science

**Nylon**

generic name for all polymers having recurring amide groups in the molecular backbone.

*noun*, polymer science  
Szycher's Biomaterials

**nylon 6 polycaprolactam**

nylon synthesised from caprolactam.  
*noun*, polymer science  
Szycher's Biomaterials

**nylon 6/6**

nylon made from the condensation of hexamethylenediamine with adipic acid.  
*noun*, polymer science  
Szycher's Biomaterials

**nystatin**

antifungal produced by growth of streptomyces noursei.  
*noun*, pharmacology  
Dorland Medical  
Notes: Used in treatment of infections caused by *Candida albicans*.

**objective evidence**

information that can be proved true, based on facts obtained through observation, measurement, testing or other means.  
*noun*, regulatory affairs  
Canadian Medical Devices

**obstruction**

1. a condition of being blocked.  
*noun*, general  
Longmans  
2. a condition of a tubular structure in the body, such as the oesophagus, intestine, bronchus, artery or ureter, which is blocked by a pathological process or an extraneous object.  
*noun*, medicine  
Williams

**obtundent**

having the power to soothe pain.  
*noun*, clinical practice  
Dorland Medical

**obturator**

disk or plate, natural or artificial, that closes an opening.  
*noun*, medicine  
Dorland Medical

**occiput**

back part of the skull.  
*noun*, anatomy  
Heinemann Dental

**occlude**

to close or to shut.  
*verb*, general  
Heinemann Dental

**occlusal angle**

any angle formed by the junction of an occlusal surface or cavity wall with any other tooth surface or cavity wall.  
*noun*, dentistry  
Heinemann Dental

**occlusal stent**

form of bite plate used in treatment of temporomandibular joint dysfunction.  
*noun*, dentistry  
Heinemann Dental

**occlusal surface**

any surface of a tooth which is normally in contact with a similar surface of an opposing tooth.  
*noun*, dentistry  
Williams

**occlusion**

1. act of closure or state of being closed as, for example, by an obstruction.  
*noun*, medicine  
Dorland Medical  
2. contact of the upper and lower teeth in any jaw position.  
*noun*, dentistry  
Heinemann Dental  
3. retention of a gas or a liquid in a solid mass or on the surface of solid particles, especially the retention of gases by solid metals.  
*noun*, chemistry  
Larousse Science

**occlusive**

pertaining to or effecting occlusion.  
*adjective*, general  
Dorland Medical

**occlusive dressing**

wound dressing that seals a wound from contact with air or bacteria.  
*noun*, clinical practice  
Dorland Medical

**octyl**

general term describing eight carbon radicals.  
*adjective*, chemistry  
Szycher's Biomaterials

**ocul(o)-**

pertaining to the eye.  
*prefix*, ophthalmology  
Dorland Medical

**ocular**

pertaining to the eye.  
*adjective*, ophthalmology  
Dorland Medical

**odont(o)-**

relating to tooth.  
*prefix*, dentistry  
Dorland Medical

**odontalgia**

toothache.  
*noun*, dentistry  
Heinemann Dental

**odontectomy**

surgical excision for the removal of retained roots, unerupted or partially erupted teeth.  
*noun*, dentistry  
Heinemann Dental

**odontia deformans**

any deformity of the teeth.  
*noun*, dentistry  
Heinemann Dental

**odontitis pulpitis**

inflammation of the tooth pulp.  
*noun*, dentistry  
Heinemann Dental

**odontoblast**

connective tissue cells that deposit dentine and form the outer surface of the dental pulp.

*noun*, dentistry  
Dorland Medical

**odontoclasia**

rapid disintegration of tooth enamel, with dentine decay, occurring in the primary dentition as a result of rampant caries.

*noun*, dentistry  
Heinemann Dental

**odontoclasia**

process of resorption of a tooth.

*noun*, dentistry  
Heinemann Dental

**odontoclast**

one of the multinuclear cells associated with the process of resorption of the roots of primary teeth.

*noun*, dentistry  
Heinemann Dental

**odontogenesis**

origin and histogenesis of the teeth.

*noun*, dentistry  
Dorland Medical

**odontogenesis imperfecta**

disturbance in the formation and mineralisation of enamel and dentine.

*noun*, embryology  
Heinemann Dental

**odontogenic**

originating from a tooth or tooth germ.

*adjective*, dentistry  
Heinemann Dental

**odontology**

branch of medical science concerned with the structure and development of the teeth and jaws.

*noun*, dentistry  
Heinemann Dental

**oedema** (edema)

pathological accumulation of fluid in the tissue spaces and serous sacs of the body.

*noun*, medicine  
Larousse Science

**oesophageal obturator** (esophageal obturator)

device inserted through the patient's mouth to facilitate ventilation of the patient during emergency resuscitation by occluding the oesophagus.

*noun*, medical device technology  
Szycher's Medical Devices

**oesophageal prosthesis** (esophageal prosthesis)

plastic tube or tube-like device that may have mesh reinforcement intended to be implanted in, or affixed externally to, the chest and throat to restore the oesophagus or provide pharyngoesophageal continuity.

*noun*, medical device technology  
CFR

**oesophagoscope** (esophagoscope)

device used to provide access, illumination,

observation and manipulation of the oesophagus.

*noun*, medical device technology  
Szycher's Biomaterials

**oesophagus** (esophagus)

musculomembranous passage extending from the pharynx to the stomach.

*noun*, anatomy  
Dorland Medical

**Ohm's law**

linear relation between the electric field and current density vectors.

*noun*, physics  
Biomedical Engineering Handbook

**olecranon**

bony projection of the ulna at the elbow.

*noun*, anatomy  
Dorland Medical

**olefin**

class of unsaturated aliphatic hydrocarbons.

*noun*, chemistry  
Szycher's Biomaterials

**olefin plastic**

plastic based on polymers made by the polymerisation of olefins or copolymers made by the polymerisation of olefins with other monomers, the olefins being at least 50 mass %.

*noun*, polymer science  
ASTM

**oligo-**

signifying a small number.

*prefix*, general  
Williams

**oligomer**

polymer formed by the combination of relatively few monomers.

*noun*, polymer science  
Dorland Medical

**oligopeptide**

short polymers of 10-20 amino acids.

*noun*, biology  
Larousse Science

**oligosaccharide**

carbohydrate containing a small number (2-10) of monosaccharide units linked together, with elimination of water.

*noun*, chemistry  
Larousse Science

**-ology**

signifying study of.

*suffix*, general  
Williams

**-oma**

signifying tumour.

*suffix*, medicine  
Williams

**omentum**

fold of peritoneum extending from the stomach to adjacent abdominal organs.

*noun*, anatomy

Dorland Medical

**oncogene**

gene that is capable of transforming a normal cell into a cancerous cell.

*noun*, genetics  
Oxford Science

**oncogenesis**

production or causation of tumours.

*noun*, medicine  
Dorland Medical

**oncogenic**

describing a chemical, organism, or environmental factor that causes the development of cancer.

*adjective*, biology  
Oxford Science

**oncology**

that part of medical science which is concerned with the management of malignant disease such as cancer.

*noun*, medicine  
Black's Medical

**onlay**

1. graft applied or laid on the surface of an organ or structure.

*noun*, surgery

2. cast metal restoration that overlays cusps and lends strength to the restored tooth.

*noun*, dentistry  
Dorland Medical

**ontogeny**

process of development, generally referring to development from the zygote to adult stages.

*noun*, biology  
Biomedical Engineering Handbook

**oocyte**

immature ovum.

*noun*, embryology  
Black's Medical  
Notes: SECOND O HAS OMLUT.

**opacification**

1. development of an opacity.

*noun*, material science

2. the rendering opaque to X-rays of a tissue or organ by introduction of a contrast medium.

*noun*, medicine  
Dorland Medical

**opacity**

condition of being opaque.

*noun*, physics  
Dorland Medical

**opaque**

being impervious to light rays or to X-rays or other electromagnetic radiation.

*adjective*, physics  
Dorland Medical

**open bite**

form of malocclusion in which a group of teeth fail to come into contact when the dental arches are brought into occlusion.

*noun*, dentistry

Heinemann Dental

**open circuit**

electrical circuit providing infinite impedance.

*noun*, physics  
Larousse Science

**open fracture** *compound fracture*

one in which a wound through the adjacent or overlying soft tissues communicates with the site of the break.

*noun*, medicine  
Dorland Medical

**open pore**

cavity within a particle of powder which communicates with the surface of a particle.

*noun*, material science  
Larousse Science

**open wound**

one having a free outward opening.

*noun*, medicine  
Dorland Medical

**open-heart surgery**

interventions taking place inside the cardiac cavities, such as for the replacement or reconstruction of cardiac valves, or the closure of abnormal communications between cardiac chambers, and which for reasons of convenience and safety, require the interruption of blood flow through the heart.

*noun*, surgery  
Biomedical Engineering Handbook

**operable**

subject to being operated upon with a reasonable degree of safety.

*adjective*, surgery  
Dorland Medical

**operation**

any action performed with instruments or by the hands of a surgeon.

*noun*, surgery  
Dorland Medical

**operative dentistry**

dentistry concerned with restoration of parts of the teeth that are defective as a result of disease, trauma, or abnormal development to a state of normal function, health and aesthetics.

*noun*, dentistry  
Dorland Medical

**ophthalm(o)-**

relating to the eye.

*prefix*, ophthalmology  
Dorland Medical

**ophthalmalgia**

pain to the eye.

*noun*, ophthalmology  
Dorland Medical

**ophthalmia**

severe inflammation of the eye.

*noun*, ophthalmology  
Dorland Medical

**ophthalmic**

relating to the eye.  
*adjective*, ophthalmology  
Heinemann Dental

**ophthalmology**

study of the eye and its diseases.  
*noun*, ophthalmology  
Larousse Science

**ophthalmoscope**

device used to provide access, illumination, observation and manipulation of the eye fundus.  
*noun*, medical device technology  
Szycher's Biomaterials

**opiate**

any drug derived from opium.  
*noun*, biology  
Dorland Medical

**Oppenheimer effect** *solid state carcinogenesis*

production of tumours in experimental animals associated with the presence of an implanted material, such tumours being derived from the physical presence of the material rather than its chemistry.  
*noun*, medical device technology  
Williams

**opportunistic**

infection resulting from an organism that does not normally cause disease.  
*adjective*, medicine  
Black's Medical

**opsin**

lipoprotein component of rhodopsin, the light-sensitive pigment that occurs in the rod cells of the retina.  
*noun*, ophthalmology  
Oxford Science

**opsonin**

substance, e.g. antibody or C3b, which enhances phagocytosis by promoting adhesion of the antigen to the phagocyte, especially rendering bacteria susceptible to phagocytosis.  
*noun*, immunology  
Roitt Immunology

**opsonisation** (opsonization)

coating of antigen with opsonin to enhance phagocytosis.  
*noun*, immunology  
Roitt Immunology

**opt(o)-**

signifying visibility.  
*prefix*, physics  
Dorland Medical

**optic**

of or pertaining to the eye.  
*adjective*, ophthalmology  
Dorland Medical

**optic nerve**

the second cranial nerve, a paired sensory nerve that runs from each eye to the brain.  
*noun*, ophthalmology

Oxford Science

**optical activity**

property possessed by many substances whereby plane-polarised light, in passing through them, suffers a rotation of its plane of polarisation.  
*noun*, chemistry  
Larousse Science

**optical fibre**

waveguide through which light can be transmitted with very little leakage through the sidewalls.  
*noun*, material science  
Oxford Science

**optical isomer**

variation in the structure of a compound by virtue of chirality.  
*noun*, chemistry  
Larousse Science

**optical microscopy**

method of analysing the microstructure of materials or tissues using visible light source, in transmission or reflection.  
*noun*, physics  
Larousse Science

**optometer**

device for measuring the power and range of vision.  
*noun*, ophthalmology  
Dorland Medical

**oral**

pertaining to the mouth, taken through or applied in the mouth.  
*adjective*, dentistry  
Dorland Medical

**oral cavity**

area of the mouth within the lips, containing teeth and their supporting structures, the tongues and inside of the cheeks, back to the throat and tonsils.  
*noun*, dentistry  
Heinemann Dental

**oral contraceptive**

hormonal compound taken orally in order to block ovulation and prevent the occurrence of pregnancy.  
*noun*, pharmacology  
Dorland Medical

**oral hygiene**

proper care of the mouth and teeth.  
*noun*, dentistry  
Dorland Medical

**oral implant**

any biomaterial or appliance surgically inserted into either bone or soft tissue of the oral cavity for cosmetic or functional purposes.  
*noun*, dentistry  
Heinemann Dental

**oral implantology** *dental implantology, implant dentistry*

branch of dentistry concerned with the design and use of prostheses involving some form of oral implant surgically inserted into hard or soft tissue within the mouth.  
*noun*, dentistry

Heinemann Dental

**oral leucoplakia**

white, thick patches on the oral mucosa due to hyperkeratosis of the epithelium.

*noun*, medicine  
Dorland Medical

**oral rehabilitation**

comprehensive treatment designed to restore health, function and appearance to the mouth and the teeth.

*noun*, dentistry  
Heinemann Dental

**orbit**

bony cavity containing the eyeball and its associated muscles, vessels, and nerves.

*noun*, anatomy  
Dorland Medical

**orbital floor**

the lower part of the orbit which interfaces with the zygomatic bone.

*noun*, anatomy  
Williams

**orchic**

pertaining to the testis.

*adjective*, anatomy  
Larousse Science

**ordered polymer**

copolymer characterised by regularly arranged repeating units.

*noun*, polymer science  
Szycher's Biomaterials

**ordered solid solution**

0.in alloys, a solid solution in which atoms of the constituent elements occupy specific, regularly located sites of the crystalline lattice.

*noun*, metallurgy  
Williams

**ordered state**

solution alloy in which the atoms of the constituent elements adopt an ordered arrangement within the crystal lattice.

*noun*, metallurgy  
Williams

**organ**

part of the body of an animal or a plant adapted and specialised for the performance of a particular function.

*noun*, anatomy  
Larousse Science

**organ culture**

culture of complete living organs of animals and plants outside the body in a suitable culture medium.

*noun*, biology  
Oxford Science

**organelle**

minute structure within a plant or animal cell that has a particular function.

*noun*, biology  
Oxford Science

**organic**

1. pertaining to substances derived from living organisms.

*adjective*, chemistry

2. pertaining to or cultivated by use of animal or vegetable fertilisers, rather than synthetic chemicals.

*noun*, biology

3. denoting chemical substances containing carbon.

*adjective*, chemistry

4. having an organised structure.

*adjective*, general  
Dorland Medical

**organisation (organization)**

company, corporation, firm or enterprise, whether incorporated or not, public or private.

*noun*, regulatory affairs  
ISO

**organism**

individual living system, such as an animal, plant, or micro-organism, that is capable of reproduction, growth, and maintenance.

*noun*, biology  
Oxford Science

**organogenesis**

the study of the formation and development of organs.

*noun*, biology  
Larousse Science

**organometallic**

consisting of a metal combined with an organic radical.

*adjective*, chemistry  
Dorland Medical

**organosilane**

organic compound in which silicon is bonded to a carbon atom.

*noun*, polymer science  
Szycher's Biomaterials

**organotin compounds**

large family of alkyl tin compounds widely used as stabilisers and catalysts for polymers.

*noun*, polymer science  
Szycher's Biomaterials

**orifice**

opening through which something may pass.

*noun*, general  
Longmans

**origin**

source or beginning of anything, especially the more fixed end or attachment of a muscle.

*noun*, anatomy  
Dorland Medical

**original equipment manufacturer OEM.**

firm which makes equipment or devices for other manufacturers to build into their products.

*noun*, regulatory affairs  
Larousse Science

**oro-**

signifying mouth, oral.

*prefix*, dentistry

Heinemann Dental

**orofacial**

relating to the mouth and the face.

*adjective*, dentistry

Heinemann Dental

**orolingual**

relating to the mouth and the tongue.

*adjective*, dentistry

Heinemann Dental

**oropharynx**

continuation of the nasopharynx from below the border of the soft palate to the larynx.

*noun*, anatomy

Heinemann Dental

**orphan drug**

any drug with a relatively small target patient population.

*noun*, regulatory affairs

Williams

Notes: The limit will be defined by regulation in each country or jurisdiction.

**ortho-**

signifying straight; normal; correct.

*prefix*, anatomy

Dorland Medical

**orthodontic appliance**

any device, fixed or removable, used in orthodontic treatment to move teeth to or to retain them in the desired position and relationship.

*noun*, dentistry

Heinemann Dental

**orthodontic band** *anchor band*

band placed on one tooth to serve as anchorage for the movement of another in orthodontic treatment.

*noun*, dentistry

Heinemann Dental

**orthodontic wire** *archwire*

in an orthodontic appliance, any wire that follows closely the lingual or labial outline of the dental arch.

*noun*, dentistry

Heinemann Dental

**orthodontics** *dental orthopaedics*

branch of dentistry concerned with irregularities of teeth and malocclusion, and associated facial abnormalities.

*noun*, dentistry

Dorland Medical

**orthognathia**

study and treatment of conditions causing malposition of the jaws.

*noun*, dentistry

Heinemann Dental

**orthognathic surgery**

surgery of the jaws and associated structures intended to produce realignment.

*noun*, surgery

Williams

**orthopaedic** (orthopedic)

pertaining to the correction of deformities of the

musculoskeletal system.

*adjective*, medicine

Dorland Medical

**orthopaedic implant** (orthopedic implant)

device used in the treatment of musculoskeletal disorders that is introduced by surgically penetrating the skin or mucosa of the body with the intention that it remain within the body following the surgery.

*noun*, medical device technology

ASTM

**orthopaedic instrument** (orthopedic instrument)

any co-operative device used during surgical procedures involving the implantation of orthopaedic implants.

*noun*, medical device technology

ASTM

**orthopaedic surgery** (orthopedic surgery)

surgery which deals with deformities arising from injury or disease of bones or of joints, or other parts of the musculoskeletal system.

*noun*, surgery

Larousse Science

**orthosis**

orthopaedic appliance or apparatus used to support, align, prevent, or correct deformities or to improve function of movable parts of the body.

*noun*, medical device technology

Dorland Medical

Notes: These devices are located external to the relevant limbs.

**orthotic**

serving to protect or to restore or improve function.

*adjective*, medicine

Dorland Medical

**orthotopic**

occurring at the normal place.

*noun*, general

Dorland Medical

**osmium Os.**

element, at.no. 76, bluish-white, hard metal of the platinum family.

*noun*, chemistry

Dorland Medical

**osmolarity**

amount of a solute that, when dissolved in water, gives a solution of the same osmotic pressure as that expected from one mole on an ideal non-ionised solute.

*noun*, chemistry

Larousse Science

**osmosis**

passage of pure solvent from a solution of lesser to one of greater solute concentration when the two solutions are separated by a membrane that selectively prevents the passage of solute molecules but is permeable to the solvent.

*noun*, chemistry

Dorland Medical

**osmotic controlled release**

facilitating the release of a drug from a delivery system through control of osmotic pressure in the

system, usually associated with the absorption of fluid within the body.

*adjective*, pharmacology  
Williams

**osmotic fragility test**

procedure used to determine the resistance of red blood cells to haemolysis in varying concentrations of hypotonic saline solutions.

*noun*, biology  
Szycher's Medical Devices

**osseo-**

relating to a bone or a bony element.

*prefix*, anatomy  
Dorland Medical

**osseointegration**

the area between an implant and the host site where there is direct contact, with no interposed tissue.

*noun*, biomaterials science  
Heinemann Dental  
Notes: NEED FURTHER DEF

**osseous**

having the characteristics of bone.

*adjective*, biology  
Heinemann Dental

**ossicle**

small bone, especially one of those in the middle ear.

*noun*, anatomy  
Dorland Medical

**ossification** *osteogenesis*

process of bone formation.

*noun*, biology  
Oxford Science

**ossify**

to develop or become bone or bone-like.

*verb*, biology  
Heinemann Dental

**osteitis**

inflammation of the bone.

*noun*, medicine  
Heinemann Dental

**osteo-**

relating to bone.

*prefix*, anatomy  
Dorland Medical

**osteoarthritis** *osteoarthrosis*

non-inflammatory degenerative joint disease marked by degeneration of the articular cartilage, hypertrophy of bone at the margins, and changes in the synovial membrane, accompanied by pain and stiffness.

*noun*, medicine  
Dorland Medical

**osteoarthrosis** *osteoarthritis*

non-inflammatory degenerative joint disease marked by degeneration of the articular cartilage, hypertrophy of bone at the margins, and changes in the synovial membrane, accompanied by pain and stiffness.

*noun*, medicine

Dorland Medical

**osteoblast**

a bone-forming cell.

*noun*, anatomy  
Larousse Science

**osteocondral**

pertaining to bone and cartilage.

*adjective*, anatomy  
Dorland Medical

**osteoclasia**

destruction of bone tissue by osteoclasts.

*noun*, anatomy  
Heinemann Dental

**osteoclast**

large multi-nuclear cell associated with absorption and removal of bone.

*noun*, anatomy  
Dorland Medical

**osteoconduction**

process of passively allowing bone to grow and remodel over a surface.

*noun*, medical device technology  
Williams

**osteocyte**

osteoblast that has become embedded within the bone matrix, occupying a bone lacunae and sending, through the canaliculi, slender cytoplasmic processes that make contact with processes of other osteocytes.

*noun*, anatomy  
Dorland Medical

**osteogenesis** *ossification*

formation of bone.

*noun*, biology  
Dorland Medical

**osteogenesis imperfecta OI.**

several types of collagen disorders, of variable inheritance, due to defective biosynthesis of type I collagen and characterised by brittle, osteoporotic, easily fractured bones.

*noun*, medicine  
Dorland Medical

**osteogenic**

relating to or derived from the tissue from which bone is developed.

*adjective*, biology  
Heinemann Dental

**osteoid**

1. organic matrix of bone, particularly young bone that has not undergone calcification.

*noun*, biology  
2. resembling bone.  
*adjective*, biology  
Dorland Medical

**osteoid seam**

on the surface of a bone, the narrow region of newly formed organic matrix not yet mineralised.

*noun*, anatomy  
Dorland Medical

**osteoiduction**

act or process of stimulating osteogenesis.

*noun*, biology  
Dorland Medical

**osteomalacia**

1. softening of the bones, caused by vitamin D deficiency in adult life.

*noun*, medicine  
Heinemann Dental

2. inadequate or delayed mineralisation of osteoid in mature cortical and spongy bone.

*noun*, medicine  
Dorland Medical

**osteomyelitis**

inflammation of the bone, localised or generalised, due to pyogenic infection.

*noun*, medicine  
Dorland Medical

**osteopenia**

reduced bone mass due to a decrease in the rate of osteoid synthesis to a level insufficient to compensate for normal bone lysis.

*noun*, medicine  
Dorland Medical

**osteopetrosis**

hereditary disease marked by abnormally dense bone.

*noun*, medicine  
Dorland Medical

**osteoporosis**

enlargement of the bone marrow and canals, and abnormal porosity of bone.

*noun*, medicine  
Heinemann Dental

**osteosarcoma**

malignant tumour derived from osteoblasts, composed of bone and sarcoma cells.

*noun*, medicine  
Larousse Science

**osteosclerosis**

condition characterised by abnormal hardness or denseness of bone.

*noun*, medicine  
Heinemann Dental

**osteosynthesis**

achievement of bony union of a fracture by means of internal skeletal fixation.

*noun*, surgery  
Williams

**osteotomy**

incision or transection of a bone.

*noun*, surgery  
Dorland Medical

**ostomy**

general term for an operation in which an artificial opening is formed.

*noun*, surgery  
Dorland Medical

**ot(o)-**

signifying the ear.

*prefix*, anatomy

Dorland Medical

**otitis**

inflammation of the ear.

*noun*, medicine  
Dorland Medical

**otitis media**

inflammation of the middle ear.

*noun*, medicine  
Dorland Medical

**otorhinolaryngology**

branch of medicine dealing with the ear, nose, and throat.

*noun*, medicine  
Dorland Medical

**otoscope**

device used to provide access, illumination, observation and manipulation of the tympanic membrane.

*noun*, medical device technology  
Szycher's Biomaterials

**outcome**

something that follows as a consequence of some antecedent action or event.

*noun*, clinical practice  
Witkin

**outcome assessment**

procedure by which the outcome of medical intervention is determined objectively.

*noun*, medicine  
Williams

**outcome domain**

conceptual area that is encompassed by describing the state of an individual or individuals at given time periods post-illness and/or device, drug, procedure or other treatment intervention.

*noun*, clinical practice  
Witkin

**outgassing**

1. removal of occluded, absorbed or dissolved gas from a solid or liquid.

*noun*, chemistry  
Larousse Science

**oval window**

membrane-covered opening between the middle ear and the inner ear, situated above the round window.

*noun*, anatomy  
Oxford Science

**over the counter OTC.**

medicine or medical device available in the pharmacy or other stores without a prescription.

*noun*, pharmacology  
Szycher's Biomaterials

**overbite**

extension of the upper incisor teeth over the lower ones vertically when the opposing posterior teeth are in contact.

*noun*, dentistry  
Dorland Medical

**overdenture**

form of denture which covers at least one tooth or prepared root.

*noun*, dentistry  
Heinemann Dental

**overhang**

filling, especially on an approximal surface, having a projection at the cervical margin of the cavity, causing a shoulder under which food may become lodged.

*noun*, dentistry  
Heinemann Dental

**overlay**

extension of the occlusal rest of a partial denture to fit over the whole of the occlusal surface of a tooth; used as a partial denture support.

*noun*, dentistry  
Heinemann Dental

**overpotential**

extra voltage which must be applied to an electrode to initiate the electrode reaction in an electrochemical cell, over and above the equilibrium electrode potential.

*noun*, chemistry  
Larousse Science

**ovine**

pertaining to sheep.

*adjective*, biology  
Williams

**ovum**

female reproductive or germ cell, an egg, which, after fertilisation, is capable of developing into a new member of the same species.

*noun*, embryology  
Dorland Medical

**oxidase**

any enzyme that catalyses oxidation-reduction reactions that involve the transfer of electrons to molecular oxygen.

*noun*, chemistry  
Oxford Science

**oxidation**

1. any reaction involving the loss of electrons from an atom, particularly the addition of oxygen to a compound.

*noun*, chemistry  
Larousse Science

2. reaction between a metal and air in which an oxide film, or oxide compounds, form at the surface.

*noun*, metallurgy

3. reaction between a polymer and air in which oxygen interacts with molecular chains.

*noun*, polymer science  
Williams

**oxidative agent** *oxidising agent*

substance which is capable of bringing about oxidation in another substance.

*noun*, chemistry  
Larousse Science

**oxidative phosphorylation**

reaction occurring during the final stages of aerobic

respiration, in which ATP is formed from ADP and phosphate coupled to electron transport in the electron transport chain.

*noun*, biology  
Oxford Science

**oxide**

binary compound formed between an element and oxygen.

*noun*, chemistry  
Oxford Science

**oxidising agent** *oxidative agent*

substance which is capable of bringing about oxidation in another substance.

*noun*, chemistry  
Larousse Science

**oximeter**

photoelectric device for determining the oxygen saturation of the blood.

*noun*, medical device technology  
Dorland Medical

**oxygen O.**

a non-metallic element, at. no. 8; a diatomic, colourless, odourless gas.

*noun*, chemistry  
Larousse Science

**oxygenation**

the act, process or result of adding oxygen.

*noun*, chemistry  
Dorland Medical

**oxygenator**

device used to exchange gases between blood and a gaseous environment to satisfy the gas exchange needs of a patient during open-heart surgery.

*noun*, medical device technology  
Szycher's Medical Devices

**oxyhaemoglobin** (oxyhemoglobin)

haemoglobin that contains bound O<sub>2</sub>.

*noun*, biology  
Dorland Medical

**p53**

gene activated when DNA is damaged and, in response to other factors in the cell, either facilitates repair or causes the cell to die.

*noun*, genetics  
Larousse Science

**pacemaker**

1. device that produces periodic electrical impulses to stimulate the heart.

*noun*, medical device technology

**CFR**

Notes: It consists of two basic components: a pulse generator and one or more leads.

2. small mass of specialised muscle cells in the mammalian heart, found in the wall of the right atrium near the opening for the vena cava.

*noun*, anatomy  
Oxford Science

**pacemaker electrode**

electrical conductor situated at the end of a pacemaker lead and which is attached to the heart.

*noun*, medical device technology

Williams

**pacemaker lead** *pacemaker lead*

flexible, insulated wire connected at one end to a pacemaker's pulse generator and at the other end to the heart.

*noun*, medical device technology  
CFR

**pacing lead** *pacemaker lead*

connection between the heart and the power source of a cardiac pacemaker.

*noun*, medical device technology  
Dorland Medical

**pack**

dressings or blanket, either wet or dry, hot or cold, which is laid on or wrapped round a part or the whole body.

*noun*, clinical practice  
Heinemann Dental

**package insert**

instructions for use of a device, including contraindications and hazard warnings, that are included, in written form, on a leaflet, booklet or other document that is included within the packaging of a medical device

*noun*, regulatory affairs  
Williams

**packed red cells**

component obtained by centrifugation of a unit of human blood following removal of plasma supernatant.

*noun*, biology  
ISO

**packing**

1. filling of a wound or cavity with gauze, sponges, pads, or other material.

*noun*, surgery  
Dorland Medical

**paed(o)-** (ped(o)-)

1. relating to children.  
*prefix*, medicine

(ped(o)-)

2. pertaining to the foot.

*adjective*, anatomy  
Dorland Medical

**palatal**

relating to the roof of the mouth.

*adjective*, anatomy  
Dorland Medical

**palate**

roof of the mouth.

*noun*, dentistry  
Heinemann Dental

**palatine bone**

bone forming the posterior part of the hard palate and the lateral wall of the nose.

*noun*, anatomy  
Heinemann Dental

**palladium Pd.**

white, metallic element, at. no. 46.

*noun*, chemistry  
Larousse Science

**palliation**

act of alleviating or affording relief, without effecting a cure.

*noun*, clinical practice  
Heinemann Dental

**palliative**

any medicine that alleviates or relieves.

*noun*, pharmacology  
Heinemann Dental

**pallidotomy**

stereotaxic surgical technique for the production of lesions in the globus pallidus for treatment of extrapyramidal disorders.

*noun*, surgery  
Dorland Medical

**palpation**

examination by touch to determine the position or consistence of an organ or part lying beneath the body surface.

*noun*, clinical practice  
Heinemann Dental

**palsy**

paralysis.

*noun*, medicine  
Dorland Medical

**pan-**

signifying all.

*prefix*, general  
Dorland Medical

**pancreas**

large, elongated, racemose gland lying transversely behind the stomach, between the spleen and duodenum.

*noun*, anatomy  
Dorland Medical

**pancreatitis**

inflammation of the pancreas.

*noun*, medicine  
Dorland Medical

**panniculus**

layer of membrane.

*noun*, anatomy  
Dorland Medical

**panniculus carnosus**

in some mammals, an extensive system of dermal musculature covering the trunk and part of the limbs.

*noun*, anatomy  
Larousse Science

**panoramic radiograph**

type of radiograph giving an uninterrupted view of the whole dental arch, or of both arches.

*noun*, dentistry  
Heinemann Dental

**panus**

1. inflammatory exudate overlying the synovial cells on the inside of a joint.

*noun*, medicine

2. superficial vascularisation of the cornea with infiltration of granulation tissue.

*noun*, ophthalmology

Dorland Medical

**papain**

proteolytic enzyme from the latex of papaw.

*noun*, biology

Dorland Medical

**papilla**

any small nipple-like eminence.

*noun*, anatomy

Heinemann Dental

**papilloma**

benign tumour derived from epithelium.

*noun*, medicine

Dorland Medical

**papule**

small, circumscribed, solid elevation above the skin.

*noun*, medicine

Larousse Science

**para-**

indicating beside or near.

*prefix*, general

Dorland Medical

**paraffin**

a series of saturated aliphatic hydrocarbons of the general formula  $C_{2n}H_{4n+2}$ .

*noun*, chemistry

Larousse Science

**paralysis**

loss or impairment of motor function in a part due to lesion of the neural or muscular mechanism.

*noun*, medicine

Dorland Medical

**parenchyma**

tissue composed of mature, vacuolated, but relatively unspecialised cells.

*noun*, biology

Larousse Science

**parenteral**

administration of drugs by any route other than by the mouth or by the bowel.

*noun*, pharmacology

Black's Medical

**parenteral nutrition**

chemical nutrition injected subcutaneously, intramuscularly, intrasternally or intravenously.

*noun*, clinical practice

Biomedical Engineering Handbook

**parietal**

pertaining to the wall of a cavity.

*adjective*, anatomy

Black's Medical

**parietal bone**

one of two bones forming the lateral surface of the cranium.

*noun*, anatomy

Heinemann Dental

**Parkinsonism**

group of neurological disorders marked by hypokinesia, tremor, and muscular rigidity.

*noun*, medicine

Dorland Medical

**parodontal** *periodontal*

near or next to a tooth.

*noun*, dentistry

Heinemann Dental

**parotid**

near the ear.

*adjective*, anatomy

Dorland Medical

**parotid gland**

one of a pair of salivary glands lying below the ear, between the ascending ramus of the mandible and the mastoid process.

*noun*, anatomy

Heinemann Dental

**partial denture**

removable denture that replaces some but not all of the natural teeth in one jaw.

*noun*, dentistry

Heinemann Dental

**partial ossicular replacement prosthesis PORP.**

device intended to be implanted for the functional reconstruction of segments of the ossicular chain and facilitates the conduction of sound wave from the tympanic membrane to the inner ear.

*noun*, medical device technology

CFR

**partial pressure**

the pressure that a gas would exert if it were the only constituent.

*noun*, chemistry

Biomedical Engineering Handbook

**particle**

small single piece of solid material, usually characterised by its mesh, or size passing through a specified size of sieve.

*noun*, material science

Larousse Science

**$\alpha$ -particle**

nucleus of helium atom of mass number 4, consisting of two neutrons and two protons and so doubly positively charged, emitted from natural or radioactive isotopes.

*noun*, physics

Larousse Science

**particulates**

microscopic air-borne material such as sand and volcanic ash but also man-made industrial dust from power stations and other industrial processes.

*noun*, engineering

Larousse Science

**parting line**

line on a moulded article caused by flow of molten plastic into the crevices between mould parts.

*noun*, engineering

Szycher's Biomaterials

**partition coefficient**

ratio of the equilibrium concentrations of a substance dissolved in two immiscible solvent.

*noun*, chemistry  
Larousse Science

**Parylene**

trade name for polyxylylene film.

*noun*, material science  
Larousse Science

**Pascal Pa.**

the SI unit of pressure, which corresponds to a force of one Newton per square meter.

*noun*, physics  
Dorland Medical

**passage**

the passage of cells from one culture vessel to another.

*noun*, biology  
ASTM

**passivation**

treatment of a metal to give greater resistance to corrosion in which the protection is afforded by surface coatings of films of oxides, phosphates etc.

*noun*, metallurgy  
Larousse Science

**passive permeability**

flux of solutes across a cell membrane by simple diffusion at a rate proportional to the difference in concentration of the solute across the membrane.

*noun*, biology  
Larousse Science

**passive tendon prosthesis**

implantable medical device used in the surgical reconstruction of a flexor tendon of the hand, being implanted for a period of 2 to 6 months to aid growth of a new tendon sheath, not being intended as a permanent implant nor to function as a replacement for the ligament or tendon nor to function as a scaffold for soft tissue ingrowth.

*noun*, medical device technology  
CFR

**patch test**

test for allergy, consisting of the application to the skin of small pads soaked with the allergy-producing substance.

*noun*, immunology  
Larousse Science

**patella**

sesamoid bone of the knee joint or elbow joint.

*noun*, anatomy  
Larousse Science

**patency**

characteristic of a tubular device that indicates it is free from any internal obstruction.

*noun*, medical device technology  
Williams

**patent**

1. said of a tubular structure that is open and unobstructed.

*adjective*, anatomy

Heinemann Dental

2. document which gives an inventor monopoly rights over the manufacture or marketing of a new and non-obvious device, process, material or chemical for a defined period of time.

*noun*, legal  
Larousse Science

**patent ductus arteriosus PDA.**

abnormal persistence of an open lumen in the ductus arteriosus after birth, flow being from the aorta to the pulmonary artery and thus recirculating arterial blood through the lungs.

*noun*, medicine  
Dorland Medical

**path(o)-**

pertaining to disease.

*prefix*, general  
Dorland Medical

**pathogen**

any disease-producing agent or micro-organism.

*noun*, biology  
Dorland Medical

**pathogenesis**

cellular events and reactions and other pathologic mechanisms occurring in the development of disease.

*noun*, medicine  
Dorland Medical

**pathogenic**

disease-producing.

*adjective*, medicine  
Black's Medical

**pathological**

concerning pathology.

*adjective*, medicine  
Larousse Science

**pathological fracture**

fracture in bone which has been weakened by disease.

*noun*, medicine  
Heinemann Dental

**pathology**

that part of medicine concerned with the causes and nature of disease and the resulting bodily changes.

*noun*, medicine  
Larousse Science

**pearlite**

the microstructure of steel and cast-iron comprising an intimate mechanical mixture of ferrite and cementite.

*noun*, metallurgy  
Larousse Science

**pedicle**

a foot-like, stem-like, or narrow basal part or structure.

*noun*, anatomy  
Dorland Medical

**pedicle screw**

screw inserted into vertebral pedicles.  
*noun*, medical device technology  
Williams

**Pellethane**

trade name for a poly(ether urethane).  
*noun*, biomaterials science  
Williams

**pellicle**

thin membrane or skin.  
*noun*, anatomy  
Heinemann Dental

**pelvic inflammatory disease PID.**

acute or chronic infection of the ovaries, fallopian tube or uterus.  
*noun*, medicine  
Black's Medical

**pelvis**

the lower portion of the trunk, bounded anteriorly and laterally by the two hip bones and posteriorly by the sacrum and coccyx.  
*noun*, anatomy  
Dorland Medical

**pemphigoid**

relating to or affected by pemphigus.  
*adjective*, medicine  
Heinemann Dental

**pemphigus**

distinctive group of diseases marked by successive crops of bullae.  
*noun*, medicine  
Dorland Medical

**penetrating wound**

one caused by a sharp, usually slender object, which passes through the skin into the underlying tissues.  
*noun*, medicine  
Dorland Medical

**penicillin**

any of a large group of natural or semi-synthetic antibacterial antibiotics derived directly or indirectly from strains of fungi of the genus *Penicillium*.  
*noun*, pharmacology  
Dorland Medical

**penile**

of or pertaining to the penis.  
*adjective*, anatomy  
Dorland Medical

**penile inflatable implant**

implantable medical device that consists of two inflatable cylinders implanted in the penis, connected to a reservoir filled with radio-opaque fluid implanted in the abdomen, and a subcutaneous manual pump implanted in the scrotum, which when the cylinders are inflated provide rigidity to the penis.  
*noun*, medical device technology  
CFR

**penile rigidity implant**

implantable medical device that consists of a single

semi-rigid rod or a pair of semi-rigid rods implanted in the penis to provide rigidity, used in the treatment of erectile impotence.  
*noun*, medical device technology  
CFR

**penis**

male organ of urination and copulation.  
*noun*, anatomy  
Dorland Medical

**pentobarbital**

short to intermediate acting barbiturate.  
*noun*, pharmacology  
Dorland Medical

**pepsin**

proteolytic enzyme of gastric juice which catalyses the hydrolysis of native or denatured proteins to form a mixture of polypeptides.  
*noun*, biology  
Dorland Medical

**peptic ulcer**

ulceration of the mucous membrane of the oesophagus, stomach, or duodenum, due to action of the acid gastric juice.  
*noun*, medicine  
Dorland Medical

**peptidase**

any of a subclass of proteolytic enzymes that catalyse the hydrolysis of peptide linkages.  
*noun*, biology  
Dorland Medical

**peptide**

sequence of amino acids held together by peptide bonds.  
*noun*, chemistry  
Larousse Science

**peptide bond**

bond formed by the condensation of the amino group and carboxyl group of a pair of amino acids.  
*noun*, chemistry  
Larousse Science

**percolation microleakage**

passing of fluids, micro-organisms or ions between the restoration and the adjacent cavity walls.  
*noun*, dentistry  
Heinemann Dental

**percutaneous**

performed through the skin.  
*adjective*, medicine  
Dorland Medical

**percutaneous catheter**

device that is introduced into a vein of artery through the skin using a dilator and a sheath or guidewire.  
*noun*, medical device technology  
Szycher's Medical Devices

**percutaneous device**

medical device that passes through the skin, remaining in that position for a significant length of time.  
*noun*, medical device technology

**percutaneous transluminal angioplasty PCTA.**

dilatation of a blood vessel by means of a balloon catheter inserted through the skin and through the lumen of the vessel to the site of narrowing, where inflation of the balloon flattens the plaque against the vessel wall.

*noun*, medicine  
Dorland Medical

**perforating ulcer**

ulcer involving the entire thickness of an organ or of the wall of an organ creating an opening on both surfaces.

*noun*, medicine  
Dorland Medical

**perfusion**

1. the act of pouring over or through, especially the passage of a fluid through the vessels of a specific organ.

*noun*, medicine  
Dorland Medical

2. technique for keeping an organ or body part alive, though severed from its normal blood circulation, by introducing blood under pressure into the appropriate feeder artery.

*noun*, medicine  
Biomedical Engineering Handbook

**perfusionist**

the operator of the heart-lung machine during cardiac surgery or respiratory assist procedures.

*noun*, medicine  
Biomedical Engineering Handbook

**peri-**

signifying around or near.

*prefix*, general  
Dorland Medical

**periapical**

in the region of the tooth apex.

*adjective*, dentistry  
Heinemann Dental

**pericardium**

membrane that encloses the pericardial cavity, containing the vertebrate heart.

*noun*, anatomy  
Oxford Science

**peridontics**

study, diagnosis and treatment of diseases of the supporting tissues of the teeth and of the gingiva.

*noun*, dentistry  
Heinemann Dental

**perineum**

pelvic floor and associated structures occupying the pelvic outlet, bounded anteriorly by the pubic symphysis, laterally by the ischial tuberosities, and posteriorly by the coccyx.

*noun*, anatomy  
Dorland Medical

**periodontal** *parodontal*

relating to the tissues around the teeth.

*adjective*, dentistry  
Black's Medical

**periodontal disease**

any disease affecting the gingiva or the supporting tissues of the teeth.

*noun*, dentistry  
Heinemann Dental

**periodontal disease index PDI.**

quantitative index of periodontal state in individuals or groups.

*noun*, dentistry  
Heinemann Dental

**periodontal ligament** *periodontal membrane*

layer of fibrous tissue surrounding the root of the tooth, attached to the cementum, the alveolar bone and the free gingiva and supporting the tooth in its socket.

*noun*, dentistry  
Heinemann Dental

**periodontal membrane** *periodontal ligament*

layer of fibrous tissue surrounding the root of the tooth, attached to the cementum, the alveolar bone and the free gingiva and supporting the tooth in its socket.

*noun*, dentistry  
Heinemann Dental

**periodontal pack**

dressing laid on the gums and about the teeth during treatment of periodontal disease or after gingivectomy.

*noun*, dentistry  
Heinemann Dental

**periodontal pocket**

gingival sulcus deepened into the periodontal ligament apically to the original level of the resorbed alveolar crest.

*noun*, dentistry  
Dorland Medical

**periodontal stent**

stent designed to hold dressings in place after periodontal surgery.

*noun*, dentistry  
Heinemann Dental

**periodontitis**

inflammation of the periodontal tissues resulting in destruction of the periodontal ligament and the supporting alveolar bone.

*noun*, dentistry  
Heinemann Dental

**periodontium**

tissues investing and supporting the teeth, including the cementum, periodontal ligament, alveolar bone, and gingiva.

*noun*, dentistry  
Dorland Medical

**periodontology**

study of the supporting tissues of the teeth and of the gingiva in health and disease.

*noun*, dentistry  
Heinemann Dental

**periosteal**

relating to the periosteum.

*adjective*, anatomy

Heinemann Dental

**periosteum**

specialised connective tissue covering all bones and having bone-forming potentialities.

*noun*, anatomy  
Dorland Medical

**peripheral nerve**

any nerve outside the central nervous system.

*noun*, anatomy  
Dorland Medical

**peripheral nerve stimulator**

implantable device that is used to stimulate electrically a peripheral nerve in a patient to relieve severe intractable pain, consisting of an implanted receiver with electrodes that are placed around a peripheral nerve and an external transmitter for transmitting the stimulating pulses across the patient's skin to the implanted receiver.

*noun*, medical device technology  
CFR

**peripheral nervous system**

all parts of the nervous system excluding the central nervous system.

*noun*, anatomy  
Oxford Science

**peripheral neuropathy**

disorder of the peripheral nervous system.

*noun*, medicine  
Dorland Medical

**peristalsis**

waves of involuntary muscular contraction and relaxation that pass along the alimentary canal, forcing food contents along.

*noun*, biology  
Oxford Science

**peristaltic pump**

pumping device using a rotating drum with rollers attached to the circumference that rotates with a cylinder.

*noun*, engineering  
Szycher's Medical Devices

**peritectic**

physical reaction demonstrated in phase diagrams of alloys in which liquid reacts with a solid already separated to form a new solid phase.

*adjective*, metallurgy  
Larousse Science

**peritoneal**

relating to the serous membrane which lines the peritoneal cavity and extends over the mesenteries and viscera.

*adjective*, anatomy  
Larousse Science

**peritoneal cavity** *abdominal cavity*

in vertebrates, that part of the coelom containing the viscera.

*noun*, anatomy  
Larousse Science

**peritoneal dialysis**

process in which metabolic waste products, toxic

substances, and excess body water are removed through a membrane-like tissue that lines the internal abdominal wall and the organs in the abdominal cavity.

*noun*, medicine  
Biomedical Engineering Handbook

**peritoneum**

serous membrane lining the walls of the abdominal and pelvic cavities.

*noun*, anatomy  
Dorland Medical

**peritonitis**

inflammation of the peritoneum.

*noun*, medicine  
Black's Medical

**permanent contact**

medical devices whose single, multiple (cumulative) or long-term use exceeds 30 days.

*noun*, medical device technology  
ISO

**permanent set**

permanent deflection of any structure after being subjected to a load, which causes the elastic limit to be exceeded.

*noun*, engineering  
Larousse Science

**permeability**

the rate of diffusion of gas or liquid under a pressure gradient through a porous material.

*noun*, chemistry  
Larousse Science

**permeable**

affording passage through.

*adjective*, general  
Heinemann Dental

**permeation**

flow of a fluid through a porous material.

*noun*, chemistry  
Larousse Science

**permittivity**

ratio of the electric displacement in a medium to the intensity of the electric field producing it.

*noun*, physics  
Oxford Science

**permselective**

restriction of permeation of macromolecules across a glomerular capillary wall, on the basis of molecular size, charge, and physical configuration.

*adjective*, biology  
Dorland Medical

**permselectivity**

property of a membrane whereby a differential rate of molecular transport between two phases is achieved based on characteristics such as molecular weight, molecular size, degree of hydration, affinity for membrane material, and electric charge.

*noun*, material science  
Biomedical Engineering Handbook

**permucosal**

through the mucosa.

*adjective*, biology  
Heinemann Dental

**permucosal device**

a medical device that passes through a mucosal surface, remaining in that position for a significant length of time.

*noun*, medical device technology  
ESB Consensus Conference I

**pernicious**

destructive, generally fatal.

*adjective*, medicine  
Heinemann Dental

**peroral**

performed or administered through the mouth.

*adjective*, medicine  
Dorland Medical

**peroxidase**

any of a group of iron-porphyrin enzymes that catalyse the oxidation of some organic substrates in the presence of hydrogen peroxide.

*noun*, chemistry  
Dorland Medical

**peroxide**

that oxide of any element containing more oxygen than any other; more correctly applied to compounds having such linkage as --O--O--.

*noun*, chemistry  
Dorland Medical

**peroxisome**

an organelle, found in the cytoplasm of virtually all plant and animal cells, that contains several enzymes involved in oxidation processes.

*noun*, biology  
Oxford Science

**Perspex Lucite**

trade name for thermoplastic polymethylmethacrylate.

*noun*, polymer science  
Larousse Science

**Perthes' disease**

osteochondrosis of capitular femoral epiphysis.

*noun*, medicine  
Dorland Medical

**pes**

foot; the terminal organ of the leg, or lower limb.

*noun*, anatomy  
Dorland Medical

**pestle**

instrument used for rubbing or pounding substances in a mortar.

*noun*, chemistry  
Heinemann Dental

**Petri dish**

shallow circular flat-bottomed dish made of glass or plastic and having a fitting lid, used in biological experiments.

*noun*, biology  
Oxford Science

**pH**

numerical expression of the degree of acidity or alkalinity of an aqueous solution.

*noun*, chemistry  
Szycher's Biomaterials

**phac(o)-**

pertaining to a lens.  
*prefix*, ophthalmology  
Dorland Medical

**phacoemulsification**

method of cataract extraction in which the lens is fragmented by ultrasonic vibrations and simultaneously irrigated and aspirated.

*noun*, ophthalmology  
Dorland Medical

**phag(o)-**

relating to ingestion.  
*prefix*, biology  
Dorland Medical

**phagocyte**

any type of cell, including monocytes, macrophages and neutrophils, which is specialised for the engulfment of cellular and particulate matter.

*noun*, immunology  
Roitt Immunology

**phagocytic**

said of any cell that is capable of phagocytosis.

*adjective*, biology  
Dorland Medical

**phagocytosis**

engulfing of micro-organisms or other cells and foreign particles by phagocytes.

*noun*, biology  
Dorland Medical

**phagolysosome**

intracellular vacuole where killing and digestion of phagocytosed material occurs following the fusion of a phagosome with a lysosome.

*noun*, biology  
Roitt Immunology

**phagosome**

intracellular vacuole produced following invagination of the cell membrane around phagocytosed material.

*noun*, biology  
Roitt Immunology

**phalanx**

any bone of a finger or toe.

*noun*, anatomy  
Dorland Medical

**phantom**

device for simulating the *in vivo* effect of radiation on tissues.

*noun*, medicine  
Dorland Medical

**pharmaceutical**

1. relating to the use of drugs, ointments or medicines.

*adjective*, pharmacology

2. medicinal drug.

*noun*, pharmacology  
Longmans

**pharmaco-**  
relating to a drug.  
*prefix*, pharmacology  
Dorland Medical

**pharmacodynamics**  
study of the biochemical and physiological effects of drugs and the mechanisms of their actions.  
*noun*, pharmacology  
Dorland Medical

**pharmacokinetics**  
action of drugs in the body over a period of time, including the processes of absorption, distribution, localisation in tissues, biotransformation, and excretion.  
*noun*, pharmacology  
Dorland Medical

**pharmacological means**  
an interaction between the molecules of the substance in question and a cellular constituent, usually referred to as a receptor, which either results in a direct response, or which blocks the response to another agent.  
*noun*, regulatory affairs  
EU Guidance  
Notes: Although not a completely reliable criterion, the presence of a dose-response correlation is indicative of a pharmacological effect.

**pharmacology**  
scientific study of the action of chemical substances on living systems.  
*noun*, pharmacology  
Larousse Science

**pharmacopeia** (pharmacopoeia)  
an authoritative treatise on drugs and their preparations.  
*noun*, pharmacology  
Dorland Medical

**pharmacotherapy**  
treatment of disease with medicines.  
*noun*, pharmacology  
Dorland Medical

**pharmacy**  
preparation of medicines from prescription.  
*noun*, pharmacology  
Heinemann Dental

**pharyngo-**  
signifying the pharynx.  
*prefix*, anatomy  
Heinemann Dental

**pharynx**  
musculomembranous canal forming the upper end of the digestive tract, between the mouth and nostrils and the oesophagus.  
*noun*, anatomy  
Heinemann Dental

**phase**  
1. the particular state of a substance, as a solid, liquid, or gas.  
*noun*, chemistry

Larousse Science  
2. homogeneous part of a heterogeneous system that is separated from other parts by a distinguishable boundary.  
*noun*, chemistry  
Oxford Science

**phase 1 drug trial**  
The initial introduction of an investigational new drug into humans by trials are designed to determine the metabolic and pharmacological actions of the drug in humans, the side effects associated with increasing doses (to establish a safe dose range), and, if possible, to gain early evidence of effectiveness.

*noun*, regulatory affairs  
IRB Guidebook  
Notes: The ultimate goal of Phase 1 trials is to obtain sufficient information about the drug's pharmacokinetics and pharmacological effects to permit the design of well-controlled, sufficiently valid Phase 2 studies. Other examples of Phase 1 studies include studies of drug metabolism, structure-activity relationships, and mechanisms of actions in humans, as well as studies in which investigational drugs are used as research tools to explore biological phenomena or disease processes. The total number of subjects involved in Phase 1 investigations is generally in the range of 20-80.

**phase 2 drug trial**  
Controlled clinical studies conducted to evaluate a drug's effectiveness for a particular indication in patients with the disease or condition under study, and to determine the common short-term side effects and risks associated with the drug.

*noun*, regulatory affairs  
IRB Guidebook  
Notes: These studies are typically well-controlled, closely monitored, and conducted with a relatively small number of patients, usually involving no more than several hundred subjects.

**phase 3 drug trial**  
Trials that involve the administration of a new drug to a large number of patients in different clinical settings to determine its safety, efficacy, and appropriate dosage.  
*noun*, regulatory affairs  
IRB Guidebook

Notes: These trials are performed after preliminary evidence of effectiveness has been obtained, and are intended to gather necessary additional information about effectiveness and safety for evaluating the overall benefit-risk relationship of the drug, and to provide an adequate basis for physician labelling. In Phase 3 studies, the drug is used the way it would be administered when marketed. When these studies are completed and the sponsor believes that the drug is safe and effective under specific conditions, the sponsor applies to the FDA for approval to market the drug. Phase 3 trials usually involve several hundred to several thousand patient-subjects.

**phase 4 drug trial**  
Post-marketing (Phase 4) studies, concurrent with marketing approval, designed to delineate additional information about the drug's risks, benefits, and optimal use.  
*noun*, regulatory affairs  
CFR

Notes: These studies could include, but would not be limited to, studying different doses or schedules of administration than were used in Phase 2 studies, use of the drug in other patient populations or other stages of the disease, or use of the drug over a longer period of time.

**phase diagram** *equilibrium diagram*

diagram to show the stable states in which a system of chemical element(s) or molecular components can exist under particular physical conditions, usually of temperature and pressure but also of concentration of component(s) where appropriate.

*noun*, chemistry  
Larousse Science

**phase transformation** *phase transition*

a change of state of a substance.

*noun*, chemistry  
Larousse Science

Notes: This could either be a first-order change between gas, liquid or solid, or a second-order change, for example of crystallographic structure.

**phase transition** *phase transformation*

a change of state of a substance.

*noun*, chemistry  
Larousse Science

Notes: This could either be a first-order change between gas, liquid or solid, or a second-order change, for example of crystallographic structure.

**phase-contrast microscope**

type of microscope that is widely used for examining such specimens as biological cells and tissues which makes visible the changes in phase that occur when non-uniformly transparent specimens are illuminated.

*noun*, physics  
Oxford Science

**phenobarbital**

long-acting barbiturate used as an anticonvulsant, sedative, and hypnotic.

*noun*, pharmacology  
Dorland Medical

**phenol formaldehyde resin**

phenolic resin made by the condensation reaction between phenol and formaldehyde.

*noun*, polymer science  
Szycher's Biomaterials

**phenolic resin**

one of the thermosetting resins made by the reaction of phenols with aldehydes.

*noun*, polymer science  
Szycher's Biomaterials

**phenotype**

the entire physical, biochemical, and physiological makeup of an individual as determined both genetically and environmentally.

*noun*, genetics  
Dorland Medical

**pheresis**

any procedure in which blood is withdrawn from a donor, a portion is separated and retained, and the remainder is retransfused into the donor.

*noun*, medicine  
Szycher's Biomaterials

**phlebo-**

signifying vein.  
*prefix*, medicine  
Heinemann Dental

**phlebotomy**

incision of a vein, primarily to obtain blood.

*noun*, medicine  
Dorland Medical

**phosphatase**

enzyme which dephosphorylates its substrate by hydrolysis of the phosphate ester bond.

*noun*, biology  
Larousse Science

**phosphatidyl choline** *lecithin*

phosphatide in which the choline forms the organic base.

*noun*, chemistry  
Larousse Science

**phospholipid**

any lipid that contains phosphorus.

*noun*, chemistry  
Dorland Medical

**phospholipid polymer**

any polymeric substance derived from the linking of large numbers of phospholipid molecules.

*noun*, biomaterials science  
Williams

**phosphorus P.**

at. no. 15; a non-metallic element in the fifth group of the periodic system.

*noun*, chemistry  
Larousse Science

**phosphorylation**

chemical reaction that combines phosphorus with an organic compound, usually in the form of a trivalent phosphoryl group [=P=O].

*noun*, chemistry  
Szycher's Biomaterials

**photo-**

signifying light.  
*prefix*, physics  
Heinemann Dental

**photodegradation**

degradation of plastics due exclusively to the action of light.

*noun*, polymer science  
Szycher's Biomaterials

**photoelasticity**

phenomenon whereby strain causes a material to display birefringence.

*noun*, physics  
Larousse Science

**photolithography**

process of pattern transfer using optics.

*noun*, physics  
Larousse Science

**photolysis**

decomposition of a chemical compound into smaller molecular weight units as a result of absorbing a quantum of radiation.

*noun*, chemistry  
Szycher's Biomaterials

**photomicrograph**

photograph of a minute object made with the aid of

a microscope.  
*noun*, physics  
Heinemann Dental

**photopolymerisation** (photopolymerization)  
polymerisation initiated by visible light or ultraviolet photons, which react with monomer molecules to give free radicals.  
*noun*, polymer science  
Larousse Science

**photoresist**  
photosensitive material used in photolithography.  
*noun*, physics  
Larousse Science

**phrenic nerve stimulator**  
device that provides electrical stimulation of a patient's phrenic nerve to contract the diaphragm rhythmically and produce breathing in patients who have hypoventilation caused by brain stem disease, high cervical spinal cord injury, or chronic lung disease.  
*noun*, medical device technology  
CFR

**physical**  
1. said of anything pertaining to or subject to the laws of physics.  
*adjective*, physics  
2. relating to a material or to the body.  
*adjective*, general  
3. relating to nature.  
*adjective*, general  
Williams

**physiological**  
relating to the functions of plant or animal as living organisms.  
*noun*, biology  
Larousse Science

**pia mater**  
membrane closely investing the brain and spinal cord, in which run blood-vessels for the nourishment of these organs.  
*noun*, anatomy  
Black's Medical

**pico-**  
prefix for one million millionth, or 10<sup>SUPERSCRIPT-12</sup>.  
*prefix*, general  
Larousse Science

**pier**  
abutment.  
*noun*, dentistry  
Heinemann Dental

**piezoelectric effect**  
electric polarisation arising in some anisotropic crystals when subject to mechanical strain.  
*noun*, physics  
Larousse Science

**pigments**  
generic term embracing all colorants, organic or inorganic, natural or synthetic, which are insoluble in the medium in which they are used.  
*noun*, chemistry

Szycher's Biomaterials

**pilocarpine**  
cholinergic alkaloid, from leaves of *Pilocarpus* species; used as an ophthalmic miotic in the form of the hydrochloride and nitrate salts.  
*noun*, pharmacology  
Dorland Medical

**pinna**  
the external ear.  
*noun*, anatomy  
Heinemann Dental

**pinocytosis**  
mechanism by which cells ingest extracellular fluid and its contents.  
*noun*, biology  
Dorland Medical

**pit and fissure sealant**  
resin intended for use primarily in young children to seal pit and fissure depressions in the biting surfaces of teeth to prevent cavities.  
*noun*, dentistry  
CFR

**pitting corrosion**  
corrosion of metal surfaces due to local chemical action, that is manifest by the appearance of pits on the surface within which the corrosion process is increasingly focussed.  
*noun*, metallurgy  
Larousse Science

**pituitary gland**  
the epithelial body of dual origin at the base of the brain in the sella turcica, attached by a stalk to the hypothalamus.  
*noun*, anatomy  
Dorland Medical

**pK**  
numerical measurement of the completeness of a chemical reaction, frequently used to express the dissociation of weak acids, such as fatty acids, amino acids and complex ions.  
*noun*, chemistry  
Szycher's Biomaterials

**placebo**  
inactive substance or preparation given to satisfy the patient's symbolic need for drug therapy, and used in controlled studies to determine the efficacy of medicinal substances.  
*noun*, pharmacology  
Dorland Medical

**placing on the market**  
the first making available in return for payment or free of charge of a device other than a device intended for performance evaluation with a view to distribution and/or use on the Community market, regardless of whether it is new or fully refurbished.  
*noun*, regulatory affairs  
EU Directive

**plane stress**  
stress state in which the stresses are biaxial, so that the associated strain field is triaxial.  
*noun*, engineering

Larousse Science

**plaque**

superficial, solid, elevated skin lesion.

*noun*, medicine

Dorland Medical

**plaque index**

index for assessing the amount of dental plaque in individuals or groups.

*noun*, dentistry

Heinemann Dental

**plasma**

1. fluid portion of the blood or lymph.

*noun*, biology

Dorland Medical

2. very high temperature ionised gaseous discharge in which there is no resultant charge, the number of positive and negative ions being equal.

*noun*, physics

Larousse Science

**plasma cell**

terminally differentiated B lymphocyte which actively secretes large amounts of antibody.

*noun*, immunology

Roitt Immunology

**plasma deposition**

coating process involving exposure to an ionised gas containing precursor material in the form of particles, radicals, ions or atoms.

*noun*, physics

Larousse Science

**plasma exchange**

the therapeutic process in which a large volume of plasma (typically 3 L) is removed and replaced by an equivalent volume of a replacement fluid (typically fresh frozen plasma, a plasma substitute, or an albumin-containing saline solution).

*noun*, medicine

Biomedical Engineering Handbook

**plasma expander** *plasma extender*

a substance that can be transfused to maintain fluid volume of the blood in event of great necessity, supplemental to the use of whole blood and plasma.

*noun*, medicine

Dorland Medical

**plasma extender** *plasma expander*

a substance that can be transfused to maintain fluid volume of the blood in event of great necessity, supplemental to the use of whole blood and plasma.

*noun*, medicine

Dorland Medical

**plasma membrane** *cell membrane*

the bounding membrane of cells which controls the entry of molecules and the interaction of cells with their environment.

*noun*, biology

Larousse Science

**plasma perfusion**

therapeutic process in which a patient's plasma is first isolated from the cellular elements in the

blood and then subsequently treated to remove specific plasma components.

*noun*, medicine

Biomedical Engineering Handbook

**plasma spray**

coating method in which material to be deposited is fed as a powder into a carrier gas flowing through an arc discharge, wherein it is melted.

*noun*, engineering

Larousse Science

**plasmapheresis**

process in which plasma is separated from the cellular components of blood using either centrifugal or membrane-based devices.

*noun*, medicine

Biomedical Engineering Handbook

**plasmid**

small, circular extrachromosomal DNA molecule capable of independent replication in a host cell.

*noun*, genetics

Biomedical Engineering Handbook

**plasmin**

endopeptidase occurring in plasma as plasminogen, which is activated via cleavage by plasminogen activators, and is capable of destroying fibrin.

*noun*, biology

Dorland Medical

**plasminogen**

inactive precursor of plasmin, occurring in plasma and converted to plasmin by the action of urokinase.

*noun*, biology

Dorland Medical

**plasminogen activator**

general term for a group of substances able to cleave plasminogen and convert it to the active form, plasmin.

*noun*, biology

Dorland Medical

**plaster of Paris**

calcined gypsum, CaSO<sub>4</sub>.

HSUBSCRIPT<sub>20</sub>, which sets hard on drying after being mixed with water.

*noun*, dentistry

Heinemann Dental

Notes: It is used to make dental impressions and casts.

**plastic**

generic name for a material based upon an organic substance, usually a synthetic or semi-synthetic polymer but also for certain natural substances, which under heat and pressure can then be shaped or cast in moulds, extruded or used in the formation of laminated products, paints, lacquers or glues.

*noun*, polymer science

Larousse Science

**plastic deformation**

permanent change in the shape of a piece of material resulting from the application of a mechanical force that exceeds the elastic limit.

*noun*, engineering

Larousse Science

**plastic surgery**

surgery concerned with the restoration, reconstruction, correction, or improvement in the shape and appearance of body structures that are defective, damaged, or misshapened by injury, disease, or growth and development.

*noun*, surgery  
Dorland Medical

**plasticise** (plasticize)

to render a polymer softer, more flexible and mouldable by the physical addition of a plasticiser.

*noun*, polymer science  
Szycher's Biomaterials

**plasticiser** (plasticizer)

a substance incorporated into a material to increase its workability, flexibility, or distensibility.

*noun*, polymer science  
ASTM

**plasticity**

ability of a material to withstand continuous and permanent deformation by stresses exceeding the yield value of the material without rupture.

*noun*, material science  
Szycher's Biomaterials

**plastisol**

liquid suspension of a finely divided PVC polymer or copolymer in a plasticiser.

*noun*, polymer science  
ASTM

**platelet**

disc-shaped cell, 2 to 4 µm in diameter, found in the blood of all mammals and chiefly known for its role in blood coagulation.

*noun*, anatomy  
Dorland Medical

**platelet activating factor PAF.**

alkyl phospholipid released by a variety of cell types including mast cells and basophils, which has immunoregulatory effects on lymphocytes and monocytes/macrophages as well as causing platelet aggregation and degranulation.

*noun*, immunology  
Roitt Immunology

**platelet aggregometer**

device used to determine changes in platelet shape and platelet aggregation following the addition of an aggregating reagent to a platelet rich plasma.

*noun*, biology  
CFR

**platelet factor**

one of the factors important in haemostasis which is contained in or attached to the platelets.

*noun*, biology  
Dorland Medical

**platelet factor 1**

coagulation factor V from the plasma.

*noun*, biology  
Dorland Medical

**platelet factor 2**

accelerator of the thrombin-fibrinogen reaction.

*noun*, biology  
Dorland Medical

**platelet factor 3**

factor that plays a role in the generation of intrinsic prothrombin converting principle.

*noun*, biology  
Dorland Medical

**platelet-derived growth factor**

substance contained in the alpha granules of blood platelets whose action contributes to the repair of damaged blood vessel walls.

*noun*, medicine  
Dorland Medical

**platen**

steel plate used to transmit pressure and heat to a mould assembly in a compression press.

*noun*, engineering  
Szycher's Biomaterials

**platinum Pt.**

metallic element, at. no. 78.

*noun*, chemistry  
Larousse Science

**platinum bonded crown**

porcelain jacket crown fused on to a platinum matrix.

*noun*, dentistry  
Heinemann Dental

**platinum group metals**

group of six transition metals with similar physical and chemical properties; specifically ruthenium, osmium, rhodium, iridium, palladium and platinum.

*noun*, chemistry  
Larousse Science

**plethysmograph**

apparatus for measuring variation in the size of bodily parts and in the flow of blood through them.

*noun*, medical device technology  
Larousse Science

**plethysmography**

any measuring technique that depends on a volume change.

*noun*, medicine  
Biomedical Engineering Handbook

**pleura**

serous membrane investing the lungs.

*noun*, biology  
Dorland Medical

**pluripotent**

capable of differentiation into multiple cell types.

*adjective*, biology  
Biomedical Engineering Handbook

**pneumoconiosis**

chronic form of inflammation of the lungs.

*noun*, medicine  
Black's Medical

**pneumothorax**

air or gas in the pleural space.

*noun*, medicine  
Dorland Medical

**pocket**

abnormal space developing between the tooth root and the gum.

*noun*, dentistry  
Heinemann Dental

**point angle**

angle formed at the junction of three tooth surfaces or cavity walls.

*noun*, dentistry  
Heinemann Dental

Notes: Point angles are named according to the surfaces or walls that form them.

**Poiseuille's law**

relationship between volumetric flow rate and pressure difference for steady flow of a Newtonian fluid in a long circular tube.

*noun*, physics  
Biomedical Engineering Handbook

**poison**

any substance or matter which, introduced into the body in any way, is capable of destroying or seriously impairing life.

*noun*, toxicology  
Larousse Science

**Poissons ratio**

one of the four elastic constants of an isotropic material, symbol  $\nu$ , defined as the ratio of the lateral contraction per unit breadth to the longitudinal extension per unit length when a piece of the material is stretched.

*noun*, material science  
Larousse Science  
Notes: GREEK  $\nu$  SYMBOL

**polar**

molecules in which the positive and negative electrical charges are permanently separated.

*adjective*, chemistry  
Szycher's Biomaterials

**polarisation** (polarization)

separation of the positive and negative charges of a molecule by an external agent.

*noun*, chemistry  
Larousse Science

**polishing paste** *prophylaxis paste*

fine abrasive paste used with special dental instruments in a handpiece to clean and polish the surfaces of teeth and of restorations.

*noun*, dentistry  
Heinemann Dental

**poly-**

denoting many.  
*suffix*, general  
Szycher's Biomaterials

**polyacrylamide**

water soluble solid, used as a thickening agent, a suspending agent, and in the synthesis of hydrogels.

*noun*, polymer science

Szycher's Biomaterials

**polyacrylate**

thermoplastic resin made by the polymerisation of an acrylic compound, such as methyl methacrylate.

*noun*, polymer science  
Szycher's Biomaterials

**polyacrylic acid PAA.**

polymer of acrylic acid.

*noun*, polymer science  
Szycher's Biomaterials

**polycaprolactam** *nylon 6*

nylon synthesised from caprolactam.

*noun*, polymer science  
Szycher's Biomaterials

**polycarbonate**

amorphous transparent and rigid polymer in which the repeating structural unit in the chain is a carbonic acid ester of Bisphenol A.

*noun*, polymer science  
ASTM

**polychlorotrifluoroethylene PCTFE.**

family of polymers derived from chlorotrifluoroethane.

*noun*, polymer science  
Szycher's Biomaterials

**polyclonal**

signifying many different clones, or the product of many different clones.

*adjective*, genetics  
Roitt Immunology

**polyclonal antibody**

used to describe whole serum raised against a particular antigen to distinguish it from a monoclonal antibody, such serum containing many different antibodies against different epitopes of the antigen.

*noun*, biology  
Larousse Science

**polycrystalline**

relating to a structure that consists of many individual crystals.

*adjective*, material science  
Williams

**polycrystalline material**

common state of crystalline metals and ceramics, formed by mass of interlocking single crystals.

*noun*, material science  
Larousse Science

**polycyclic**

containing more than one ring of atoms in the molecule.

*adjective*, chemistry  
Larousse Science

**polyelectrolyte**

polymer in which some or all of the repeat units possess ionic groups.

*noun*, polymer science  
Larousse Science

**polyester**

linear polymers which have the ester group (-CO-O-) repeated along the chain.

*noun*, polymer science  
Larousse Science

**polyester fibre** (polyester fibre)

generic name for any fibre in which the fibre-forming substance is any long-chain synthetic polymer composed of at least 85% by weight of an ester of a dihydric alcohol and terephthalic acid.

*noun*, polymer science  
Szycher's Biomaterials

**polyether**

a polymer in which the repeated structural unit in the chain is of the ether type.

*noun*, polymer science  
ASTM

**polyether ether ketone PEEK.**

heat-resistant polymer with benzene rings linked by ether (-O-) and ketone (-CO-) groups in main chain.

*noun*, polymer science  
Larousse Science

**polyethylene**

polymer prepared by the polymerisation of ethylene as the sole monomer.

*noun*, polymer science  
ASTM

**polyethylene glycol PEG.**

oligomer of ethylene glycol, with molecular weights ranging from 200 to 6000.

*noun*, polymer science  
Szycher's Biomaterials

**polyethylene glycol terephthalate**

saturated thermoplastic resin, made by the condensation of ethylene glycol and terephthalic acid, producing a wear-resistant, dimensionally stable, chemically-resistant film.

*noun*, polymer science  
Szycher's Biomaterials

**polyethylene oxide**

water-soluble polymer with repeat unit -CH<sub>2</sub>-CH<sub>2</sub>-O-.

*noun*, polymer science  
Larousse Science

**polyethylene terephthalate PET.**

polymer derived from terephthalic acid and ethylene glycol by condensation polymerisation.

*noun*, polymer science  
ASTM

**polyethylene wear particle**

particle or polyethylene generated within a total joint prosthesis by the wear of a polyethylene component.

*noun*, biomaterials science  
Williams

**polyformaldehyde resin** *acetal resin*

polymer, generally referred to as polyoxymethylene or polyacetal, produced by the addition polymerisation of aldehydes through the carbonyl groups.

*noun*, polymer science

Szycher's Biomaterials

**polyimides**

condensation polymers derived from pyromellitic dianhydride and aromatic amines, with the functional -CO-NR-CO- group.

*noun*, polymer science  
Szycher's Biomaterials

**polyisoprene**

main polymer in natural rubber.

*noun*, chemistry  
Larousse Science

**polylysine**

polymer with multiple positive charges used in cell biology and microscopy to mediate adhesion of living or fixed cells to culture surfaces or glass.

*noun*, biology  
Larousse Science

**polymer**

substance consisting of molecules characterised by the repetition of one or more types of monomeric units.

*noun*, polymer science  
ASTM

**polymerase**

enzyme that catalyses polymerisation.

*noun*, biology  
Dorland Medical

**polymerisation** (polymerization)

combination of several molecules to form a more complex molecule, usually by a step- or chain-growth polymerisation mechanism.

*noun*, chemistry  
Larousse Science

**polymethylmethacrylate PMMA.**

transparent solid, the addition polymer of methyl methacrylate.

*noun*, polymer science  
Szycher's Biomaterials

**polymethylmethacrylate bone cement**

device intended to be implanted that is made from methylmethacrylate, polymethylmethacrylate, esters of methacrylic acid or copolymers containing polymethylmethacrylate and polystyrene, intended for use in arthroplastic procedures of the hip, knee, and other joints for the fixation of prosthetic implants to the living bone.

*noun*, medical device technology  
CFR

**polymorphic**

occurring in several or many forms.

*adjective*, biology  
Dorland Medical

**polymorphonuclear leucocyte** *neutrophil*

granular leucocyte having a nucleus with three to five lobes connected by threads of chromatin, and cytoplasm containing very fine granules.

*noun*, immunology  
Dorland Medical

**polyol**

substance, usually a liquid resin, containing a

number of hydroxyl groups attached to a single molecule.

*noun*, polymer science  
Szycher's Biomaterials

**polyolefin**

polymer based on an olefin monomer, such as polyethylene and polypropylene.

*noun*, polymer science  
Larousse Science

**polyoxymethylene acetal resin POM.**

tough, mouldable polymer in which the repeated structural unit in the chain is oxymethylene.

*noun*, polymer science  
ASTM

**polypeptide**

polymerised amino acid molecules formed by enzymatically regulated stepwise polymerisation *in vivo* between the carboxyl group of one amino acid and the amino group of a second amino acid.

*noun*, biology  
Biomedical Engineering Handbook

**polyphenylene oxide PPO.**

thermoplastic, non-crystalline resins, obtained by the oxidative polycondensation of 2,6-dimethylphenol.

*noun*, polymer science  
Szycher's Biomaterials

**polypropylene**

thermoplastic resin made by the polymerisation of propylene.

*noun*, polymer science  
Szycher's Biomaterials

**polysaccharide**

carbohydrate which on hydrolysis yields many monosaccharides.

*noun*, chemistry  
Dorland Medical

**polysiloxane**

any oligomer and polymer based on the repeat unit and prepared by the hydrolysis of chlorosilanes  $\text{R}_{\text{SUBSCRIPT}3}\text{SiCl}$ ,  $\text{R}_{\text{SUBSCRIPT}2}\text{SiCl}_{\text{SUBSCRIPT}2}$ , ethers  $\text{R}_{\text{SUBSCRIPT}3}\text{SiOR}$ ,  $\text{R}_{\text{SUBSCRIPT}2}\text{Si(OR)}_{\text{SUBSCRIPT}2}$ , or mixtures.

*noun*, polymer science  
Larousse Science

**polystyrene**

polymer of styrene.  
*noun*, polymer science  
Szycher's Biomaterials

**polysulphide rubber (polysulfide rubber)**

polymer having linked sulphur atoms (e.g. -S-S-O) in the backbone chain, and made by step-mechanism using chain-extension of thiol end groups.

*noun*, polymer science  
Larousse Science

**polysulphone (polysulfone)**

engineering polymer with aromatic back bone chains based on the sulphonyl functional group (-SOSUBSCRIPT2-).

*noun*, polymer science  
Larousse Science

**polytetrafluoroethylene PTFE.**

polymer with the repeat unit -CFSUBSCRIPT2-CFSUBSCRIPT2. PTFE.

*noun*, polymer science  
Larousse Science

**polyurethane chain extender**

active hydrogen containing compound such as a diol or diamine used to increase the molecular weight of an isocyanate-terminated prepolymer by chemical reaction.

*noun*, polymer science  
ASTM

**polyurethane chain terminating agent**

active hydrogen containing a compound such as a monofunctional alcohol, amine, or acid that reacts with the isocyanate group of a prepolymer to prevent further chain growth.

*noun*, polymer science  
ASTM

**polyurethane covered silicone gel-filled breast prosthesis**

inner silicone rubber shell made of polysiloxane(s), such as polydimethylsiloxane and polydiphenylsiloxane, with an outer silicone adhesive layer and an outer covering of polyurethane; contained within the inner shell is a fixed amount of cross-linked polymerised silicone gel, fillers, and stabilisers and an inert support structure compartmentalising the silicone gel, the device being intended to be implanted to augment or reconstruct the female breast.

*noun*, medical device technology  
CFR

**polyurethane resin**

one of a family of polymers produced by reacting diisocyanates with organic compounds containing two or more active hydrogens, derived from hydroxyl or amino groups.

*noun*, polymer science  
Szycher's Biomaterials

**polyvinyl acetal**

general term for resins formed by partially or completely replacing the hydroxyl groups of polyvinyl alcohol with aldehydes by means of a condensation reaction.

*noun*, polymer science  
Szycher's Biomaterials

**polyvinyl acetate PVA.**

transparent thermoplastic, prepared by polymerisation of vinyl acetate.

*noun*, polymer science  
Szycher's Biomaterials

**polyvinyl alcohol PVA.**

polymer prepared by the essentially complete hydrolysis of polyvinyl ester.

*noun*, polymer science  
ASTM

**polyvinyl chloride PVC.**

polymer prepared by the polymerisation of vinyl

chloride as the sole monomer.  
*noun*, polymer science  
ASTM

**polyvinyl pyrrolidone PVP.**  
water soluble polymers of N-vinyl-2-pyrrolidone.  
*noun*, polymer science  
Szycher's Biomaterials

**polyvinylidene chloride PVDC.**  
thermoplastic polymer of 1,1-dichloro ethylene.  
*noun*, polymer science  
Szycher's Biomaterials

**polyvinylidene fluoride**  
highly crystalline polymer with a repeat unit -  
CH<sub>2</sub>CF<sub>2</sub>-CF<sub>2</sub>CH<sub>2</sub>.  
*noun*, polymer science  
Larousse Science

**pontic**  
suspended member on a bridge or partial denture,  
replacing a natural crown.  
*noun*, dentistry  
Heinemann Dental

**porcelain**  
translucent ceramic product of the fusion of kaolin,  
feldspar and quartz, with other minerals, used in  
the making of artificial teeth, inlays, etc.  
*noun*, dentistry  
Heinemann Dental

**porcelain tooth**  
prefabricated device made from porcelain powder  
intended for use in construction of fixed or  
removable prostheses, such as crowns and partial  
dentures.  
*noun*, dentistry  
CFR

**porcelain veneer crown**  
metal crown covered by a thin veneer of porcelain.  
*noun*, dentistry  
Heinemann Dental

**porcine**  
pertaining to swine.  
*adjective*, biology  
Dorland Medical

**pore**  
small space between solid parts or particles within  
a material.  
*noun*, material science  
Williams  
minute opening on a free surface of a body,  
especially one of the sweat gland ducts.  
*noun*, anatomy  
Heinemann Dental

**porosity**  
2. in castings, unsoundness caused by shrinkage  
during cooling, or blowholes.  
*noun*, engineering  
3. in compaction of powders, the percentage of  
voids in a given volume under specified packing  
conditions.  
*noun*, engineering  
Larousse Science

**port**  
place of access to a system, used for introduction or  
removal of energy or material.  
*noun*, general  
Larousse Science

**positive control**  
material or substance which, when tested by the  
procedure described in a specified standard,  
demonstrates the suitability of the procedure to  
yield a reproducible, appropriate positive or  
reactive response in the test system.  
*noun*, biomaterials science  
ISO

**positive control material**  
material which, when tested in accordance with a  
specified protocol, provides a reproducible cytotoxic  
response.  
*noun*, biomaterials science  
ISO

**positive predictive value PPV.**  
probability that a clinical sample testing positive  
with a particular assay really does contain the  
analyte being measured.  
*noun*, statistics  
Witkin

**positron camera**  
device intended to image the distribution of  
positron-emitting radionuclides in the body.  
*noun*, medical device technology  
CFR

**positron emission tomography PET.**  
nuclear medicine imaging method similar to  
computed tomography, except that the image  
shows the tissue concentration of a positron-  
emitting radio-isotope.  
*noun*, medicine  
Dorland Medical

**post**  
peg or pin of metal used to attach an artificial  
crown to the root of a natural tooth.  
*noun*, dentistry  
Heinemann Dental

**post crown**  
any artificial crown attached to the tooth root by  
means of a post or dowel.  
*noun*, dentistry  
Heinemann Dental

**post curing**  
process of forming an uncured thermosetting resin,  
then completing the cure after the resin has been  
removed from its forming mould or mandrel.  
*noun*, polymer science  
Szycher's Biomaterials

**post-amendment device**  
medical devices marketed after enactment of the  
US FDA 1976 Medical Device Amendments.  
*noun*, regulatory affairs  
IRB Guidebook

**post-market surveillance PMS.**  
any procedure or system implemented on or after  
approval of a device or drug for a given indication

or use, designed to provide ongoing information on the use of the device or drug for that indication and on its side effects.  
*noun*, regulatory affairs  
Witkin

**posterior**  
behind, in the rear.  
*adjective*, anatomy  
Heinemann Dental

**posterior chamber**  
part of the aqueous-containing space of the eyeball between the iris and the lens.  
*noun*, ophthalmology  
Dorland Medical

**potassium K.**  
at. no. 19; a very reactive alkali metal, soft and silvery white.  
*noun*, chemistry  
Larousse Science

**potassium channel**  
voltage-gated protein channel selective for the passage of potassium ions.  
*noun*, biology  
Dorland Medical

**potential difference**  
difference in potential between two points in a circuit when maintained by an emf or by a current flowing through a resistance.  
*noun*, physics  
Larousse Science

**Pott's fracture**  
variety of fractures around the ankle, accompanied by a varying degree of dislocation.  
*noun*, medicine  
Black's Medical

**potting**  
process of encasing an article in a resinous mass, by placing the article into a mould, pouring liquid resin to surround the article, and curing the resin.  
*verb*, polymer science  
Szycher's Biomaterials

**Pourbaix diagram**  
graphical representation of the electrode potential as a function of pH which defines regions over which various ions and products are stable.  
*noun*, metallurgy  
Larousse Science  
Notes: Used in electro-chemistry and the prediction of metallic corrosion behaviour.

**powder**  
discrete particles of dry material in the range 0.1-1000  $\mu\text{m}$ .  
*noun*, general  
Larousse Science

**powder metallurgy**  
working of metals and certain carbides in powder form by pressing and sintering.  
*noun*, metallurgy  
Larousse Science

**pre-amendments device**

medical devices marketed before enactment of the US FDA 1976 Medical Device Amendments.  
*noun*, regulatory affairs  
IRB Guidebook

**pre-clinical**  
before a disease becomes clinically recognisable.  
*adjective*, medicine  
Dorland Medical

**pre-clinical investigation**  
laboratory and animal studies designed to test the mechanisms, safety, and efficacy of an intervention prior to its applications to humans.  
*noun*, medicine  
IRB Guidebook

**pre-prosthetic surgery**  
procedure performed before insertion of a prosthesis.  
*noun*, surgery  
Dorland Medical

**precarious**  
occurring before or early in the development of caries.  
*noun*, dentistry  
Heinemann Dental

**precious metal alloys** *gold-based alloy*  
mixtures of metals, the major components of which are gold, silver, or palladium, and possibly small quantities of copper or platinum, that are intended to fabricate dental appliances, such as crowns and bridges.  
*noun*, dentistry  
CFR

**precipitation**  
1. formation of an insoluble solid by a reaction which occurs in solution.  
*noun*, chemistry  
2. formation of a visible aggregate when antigen and antibody are mixed in aqueous solution so as to form large macromolecular complexes.  
*noun*, immunology  
Larousse Science

**precipitation hardening**  
in a metal or alloy, precipitation of one phase in the lattice of another of different ionic diameter.  
*noun*, metallurgy  
Larousse Science

**precision**  
ability of a laboratory assay to obtain the same result when repeatedly measuring an analyte in a clinical specimen.  
*noun*, medicine  
Witkin

**precision attachment**  
prefabricated form of attachment for the retention of a bridge or partial denture.  
*noun*, dentistry  
Heinemann Dental  
Notes: It consists of a male and a female portion, one being incorporated in the prosthesis and the other in the retainer cemented to the supporting tooth or root.

**predicate device**

currently legally marketed devices to which new devices may be found substantially equivalent under the FDA 510(k) process.  
*noun*, regulatory affairs  
IRB Guidebook

**preformed crown**

prefabricated device intended to be affixed temporarily to a tooth after removal of, or breakage of, the natural crown for use as a functional restoration until a permanent crown is constructed.  
*noun*, dentistry  
CFR

**preimpregnation**

practice of mixing resin and reinforcement before shipment.  
*noun*, material science  
Szycher's Biomaterials

**prealignant**

pre-cancerous.  
*adjective*, medicine  
Heinemann Dental

**premarket approval PMA.**

process by FDA to evaluate the safety and effectiveness of Class III devices.  
*noun*, regulatory affairs  
CFR

**premarket approval application PMAA.**

submission to the US FDA in order to determine whether a device is considered safe and effective for its labelled indications.  
*noun*, regulatory affairs  
CFR

**premarket notification f510(k) provision PMN.**

submission to the US FDA which demonstrates that a new device is substantially equivalent to a device that was on the market prior to 1976 and therefore is marketable without formal FDA approval.  
*noun*, regulatory affairs  
CFR

**premolar**

situated in front of the molar teeth.  
*adjective*, dentistry  
Dorland Medical

**premolar tooth**

bicuspid, found in front of the molar teeth.  
*noun*, dentistry  
Heinemann Dental

**prepolymer**

polymer of low molecular weight, capable of being hardened by further polymerisation during or after a forming process.  
*noun*, polymer science  
Szycher's Biomaterials

**prepreg**

fibrous composite material consisting of unidirectional fibres embedded in matrix of resin prepared in the form of sheet or strip ready for forming by combining several plies arranged in different direction into the final product.  
*noun*, material science

Larousse Science

**press fit**

class of fit for mating parts, tighter than a sliding fit and used when the parts do not normally have to move relative to each other.  
*noun*, engineering  
Larousse Science

**prevalence**

number of cases of a disease at any given time in any given place.  
*noun*, statistics  
Heinemann Dental

**preventive dentistry**

prevention and preventive treatment for diseases of the mouth and teeth, and for malformation and the promotion of good oral health.  
*noun*, dentistry  
Heinemann Dental

**primary bonds**

term usually applied to the strong covalent, ionic or metallic bonds in materials.  
*noun*, chemistry  
Larousse Science

**primary culture**

culture started from cells, tissues, or organs taken directly from an organism, being regarded as such until it is subcultured for the first time, when it becomes a cell line.  
*noun*, biology  
ASTM

**primary dentine**

dentine formed before the eruption of a tooth.  
*noun*, dentistry  
Dorland Medical

**primary immune response**

the relatively weak immune response which occurs upon the first encounter of naive lymphocytes with a given antigen.  
*noun*, immunology  
Roitt Immunology

**prime**

process of giving an initial sensitisation to antigen.  
*noun*, immunology  
Roitt Immunology

**primer**

coating applied to a substrate to improve the adhesion, gloss, or durability of a subsequently applied coating.  
*noun*, material science  
Szycher's Biomaterials

**priming volume**

volume of liquid (blood, plasma, synthetic plasma expanders, or electrolyte solutions) needed to fill all components of an extracorporeal circuit (oxygenator, heat exchanger, blood pumps, filter, tubing and catheters) so as to avoid exsanguination once the intracorporeal and extracorporeal circulation systems are joined.  
*noun*, medical device technology  
Biomedical Engineering Handbook

**principal stress**

component of a stress which acts at right angles to a surface, occurring at a point at which the shearing stress is zero.

*noun*, engineering  
Larousse Science

**prion protein**

protein of unknown function that normally undergoes rapid turnover in the brain.

*noun*, biology  
Larousse Science

**probe**

slender, flexible instrument used to explore a cavity or wound.

*noun*, surgery  
Heinemann Dental

**procarcinogen**

chemical substance that becomes carcinogenic only after it is altered by metabolic processes.

*noun*, medicine  
Dorland Medical

**procedure**

1. series of ordered steps.

*noun*, general  
Longmans

2. recognised method of treating a patient, especially one involving surgical intervention.

*noun*, medicine  
Williams

**process**

1. natural phenomenon marked by gradual changes that lead towards a particular result.

*noun*, general

2. series of actions or operations designed to achieve an end.

*noun*, general  
Williams

3. set of interrelated resources and activities which transform inputs into outputs.

*noun*, regulatory affairs  
ISO

4. slender projection of bone, or a tissue proturbance.

*noun*, anatomy  
Heinemann Dental

**process validation**

establishing by objective evidence that a process consistently produces a result or product meeting its predetermined specifications.

*noun*, regulatory affairs  
CFR

**processability**

vague term to describe the ease with which a material may be processed in the manufacture of a device.

*noun*, engineering  
Williams

**procollagen**

precursor molecule of collagen, cleaved to form collagen extracellularly.

*noun*, biology  
Dorland Medical

**proctoscope**

device used to provide access, illumination, observation and manipulation of the rectum.

*noun*, medical device technology  
Szycher's Biomaterials

**prodrug**

compound that is converted into a physiologically active substance by metabolic processes within the body.

*noun*, pharmacology  
Szycher's Biomaterials

**product**

result of activities or processes.

*noun*, regulatory affairs  
ISO

**profilometry**

any technique used to measure the roughness or texture of a surface.

*noun*, physics  
Williams

**profundaplasty**

reconstruction of an occluded or stenosed deep femoral artery.

*noun*, surgery  
Dorland Medical

**progesterone**

the principal progestational hormone liberated by the corpus luteum, adrenal cortex, and placenta, whose function is to prepare the uterus for the reception and development of the fertilised ovum by inducing transformation of the endometrium from the proliferative to the secretory stage

*noun*, medicine  
Dorland Medical

Notes: Used as a progestin in the treatment of functional uterine bleeding, abnormalities of the menstrual cycle, and threatened abortion.

**prognathism**

abnormal protrusion of the mandible.

*noun*, anatomy  
Dorland Medical

**prognosis**

forecast, from the symptoms, of the probable course of an attack of a disease and the prospects for recovery.

*noun*, clinical practice  
Heinemann Dental

**programmed cell death**

process by which particular cells are programmed to die at specific sites and at specific stages of development.

*noun*, biology  
Dorland Medical

Notes: There is still speculation over the mechanisms by which this happens. See apoptosis.

**programmed release**

release of a drug from a device or component that is pre-determined and follows a prescribed pattern.

*noun*, pharmacology  
Williams

**prolapse**

falling out of place or sinking of an organ or part of

the body.  
*noun*, medicine  
Larousse Science

**proliferation**

growth or extension by the multiplication of cells.  
*noun*, biology  
Larousse Science

**proline Pro, short form P.**

pyrrolidine-2-carboxylic amino acid found particularly in collagen.  
*noun*, biology  
Larousse Science

**prolonged release**

release of a drug from a device or component that occurs over a protracted period of time.  
*noun*, pharmacology  
Williams

**promoter**

1. DNA region in front of the coding sequence of a gene which binds RNA polymerase and therefore signals the start of a gene.  
*noun*, genetics
2. substance which increases the activity of a catalyst.  
*noun*, chemistry
3. agent which magnifies the effect of a previously applied carcinogen.  
*noun*, biology  
Larousse Science

**proof strength**

measure of the point at which a metal undergoes the transition from elastic to plastic deformation, used in particular in those cases where there is no abrupt yield point.  
*noun*, metallurgy  
Williams

**proof stress**

stress required to produce a certain amount of permanent set in metals.  
*noun*, metallurgy  
Larousse Science  
Notes: Used to characterise the onset of plasticity in metals which do not exhibit a sudden yield point.

**proof testing**

mechanical testing carried out on a manufactured component to ensure that it is capable of meeting and exceeding foreseeable service requirements.  
*noun*, engineering  
Larousse Science

**propagation**

1. reproduction.  
*noun*, biology  
Dorland Medical
2. spread of a structural change in a material outwards from the point at which that change was initiated.  
*noun*, material science  
Williams

**prophylactic**

1. relating to prophylaxis, a preventive remedy.  
*adjective*, medicine  
Heinemann Dental

2. drug, vaccine, regimen, or device designed to prevent, or provide protection against, a given disease or disorder  
*noun*, medicine  
IRB Guidebook

**prophylaxis**

the use of mechanical or medical means to prevent the occurrence of disease.  
*noun*, medicine  
Heinemann Dental

**prophylaxis paste** *polishing paste*

fine abrasive paste used with special dental instruments in a handpiece to clean and polish the surfaces of teeth and of restorations.  
*noun*, dentistry  
Heinemann Dental

**Proplast**

trade name for a composite of PTFE and either carbon or alumina used at one time as a biomaterial.  
*noun*, biomaterials science  
Williams  
Notes: Adverse tissue response under some circumstances has led to the discontinuation of use.

**proportional limit**

point on a stress-strain curve at which the strain ceases to be proportional to the stress.  
*noun*, engineering  
Larousse Science

**proprioceptor**

any of the sensory nerve endings that give information concerning movements and position of the body.  
*noun*, biology  
Dorland Medical

**propylene**

$\text{CH}_2=\text{CHCH}_3$ ; an alkene hydrocarbon, a gas.  
*noun*, chemistry  
Larousse Science

**prospective study**

study designed to observe outcomes or events that occur subsequent to the identification of the group of subjects to be studied.  
*noun*, medicine  
IRB Guidebook  
Notes: Prospective studies need not involve manipulation or intervention but may be purely observational or involve only the collection of data.

**prostacyclin**

prostaglandin,  $\text{PGI}_2$ , synthesised by endothelial cells lining the cardiovascular system.  
*noun*, biology  
Dorland Medical

**prostaglandin**

any of a group of naturally occurring hydroxy fatty acids that stimulate contractility of smooth muscle, lower blood pressure, regulate acid secretion of the stomach, regulate body temperature and platelet aggregation, and control inflammation and vascular permeability.  
*noun*, biology

Dorland Medical

**prostate**

gland surrounding the neck of the bladder and urethra in the male.

*noun*, anatomy  
Dorland Medical

**prostatectomy**

excision of all or part of the prostate.

*noun*, surgery  
Dorland Medical

**prosthesis**

device that replaces a limb, organ or tissue of a body.

*noun*, medical device technology  
ESB Consensus Conference I

**prosthetic dentistry**

restoration of function and appearance by replacement of missing teeth with full or partial dentures, bridges or other devices.

*noun*, dentistry  
Heinemann Dental

**prosthetic group**

chemical grouping in which a metal ion is associated with a macromolecule.

*noun*, dentistry  
Szycher's Biomaterials  
Notes: As with coenzymes for example.

**prosthetic valve endocarditis**

infectious endocarditis as a complication of implantation of a prosthetic valve in the heart.

*noun*, medical device technology  
Dorland Medical

**prosthetics**

design, construction and fitting of prostheses.

*noun*, medicine  
Heinemann Dental

**prosthodontics**

design and construction of artificial dentures, and crown- and bridge-work.

*noun*, dentistry  
Heinemann Dental

**protamine**

short, basic protein which is bound to sperm DNA in place of histones.

*noun*, biology  
Larousse Science

**protease**

any proteolytic enzyme.

*noun*, biology  
Dorland Medical

**protein**

any of a group of complex organic compounds containing carbon, hydrogen, oxygen, nitrogen, and sulphur.

*noun*, biology  
Dorland Medical

**protein A**

Staphylococcus aureus cell wall protein which binds to the Fc region of IgG.

*noun*, immunology

Roitt Immunology

**protein adsorption**

phenomenon in which proteins are adsorbed from the surrounding medium onto a material surface.

*noun*, biomaterials science  
Williams

**protein denaturation**

change in the molecular orientation or conformation of a protein, resulting in a change in its properties, usually involving a loss of its normal function.

*noun*, biology  
Williams

**protein desorption**

desorption, or removal, of proteins from a material surface, either through a change in environmental conditions which lower the affinity of the protein for the surface or through an exchange process.

*noun*, biomaterials science  
Williams

**proteoglycan**

any of a group of polysaccharide-protein conjugates present in connective tissue and cartilage, consisting of a polypeptide backbone to which many glycosaminoglycan chains are covalently linked.

*noun*, biology  
Dorland Medical

**proteolysis**

degradation of proteins into peptides and amino acids by cleavage of their peptide bonds.

*noun*, biology  
Larousse Science

**proteolytic activity**

enzyme activity which catalyses the breakdown of proteins into simpler substances.

*noun*, biology  
Larousse Science

**prothrombin Factor II**

coagulation factor II.

*noun*, biology  
Dorland Medical

**prothrombin time test**

general screening procedure for the detection of possible clotting factor deficiencies in the extrinsic coagulation pathway, which involves the reaction between coagulation factors III and VII.

*noun*, biology  
CFR

**protocol**

1. explicit, detailed plan of an experiment, procedure or test.

*noun*, general  
Dorland Medical

2. formal design or plan of an experiment or research activity; specifically, the plan submitted to an IRB for review and to an agency for research support.

*noun*, general  
IRB Guidebook

Notes: The protocol includes a description of the research design or methodology to be employed, the eligibility

requirements for prospective subjects and controls, the treatment regimen(s), and the proposed methods of analysis that will be performed on the collected data.

**proton**

nucleus of the hydrogen atom.

*noun*, physics  
Larousse Science

**protrusion**

forward thrust, especially a forward movement of the mandible or teeth.

*noun*, anatomy  
Heinemann Dental

**protuberance**

swelling, eminence or knob of tissue.

*noun*, anatomy  
Heinemann Dental

**proximal**

nearest to a point of reference, as to a centre or median line or to the point of attachment or origin.

*adjective*, anatomy  
Dorland Medical

**proximal cavity** *approximal cavity*

cavity affecting either a mesial or a distal surface.

*noun*, dentistry  
Heinemann Dental

**pruritus**

itching.

*noun*, medicine  
Dorland Medical

**pseud(o)-**

indicating false.

*prefix*, general  
Dorland Medical

**pseudarthrosis**

pathologic condition in which failure of callus formation following pathologic fracture through an area of deossification in a weight-bearing long bone results in formation of a false joint.

*noun*, medicine  
Dorland Medical

**pseudointima**

layer that forms on a vascular prosthesis after a period of time *in vivo*, this layer possibly exhibiting some of the characteristics of the normal vascular endothelium.

*noun*, medical device technology  
Williams

**Pseudomonas**

genus of gram-negative, aerobic bacteria, some species of which are pathogenic for plants and vertebrates.

*noun*, biology  
Dorland Medical

**psychosomatic**

relating to the interdependence of mental processes and bodily function.

*adjective*, medicine  
Heinemann Dental

**pterygoid**

in the shape of a wing.

*adjective*, anatomy

Heinemann Dental

**ptosis**

1. prolapse of an organ or part.

*noun*, anatomy  
Dorland Medical  
2. drooping of the eyelid.  
*noun*, ophthalmology  
Heinemann Dental

**pull-out test**

experimental determination of the degree of bone bonding of a biomaterial through the application of a mechanical force to a sample of the material, previously placed in the bone of an experimental animal, the force tending to pull the sample out of the bone and the strength of attachment being determined by the frictional force which resists the movement.

*noun*, biomaterials science  
Williams

**pulmonary circulation**

blood flow from the right cardiac ventricle that perfuses the lung and is in intimate contact with alveolar membranes for effective gas exchange.

*noun*, biology  
Biomedical Engineering Handbook

**pulmonary embolism**

obstruction of the pulmonary artery or one of its branches by an embolus.

*noun*, medicine  
Dorland Medical

**pulmonary hypertension**

condition of increased resistance to blood flow through the lungs.

*noun*, medicine  
Black's Medical

**pulp**

1. any soft, juicy animal or vegetable tissue.

*noun*, biology  
2. soft sensitive tissue that fills the central cavity of a tooth.  
*noun*, dentistry  
Dorland Medical

**pulp abscess**

acute or chronic inflammation of the dental pulp associated with an area of necrotic tissue and pus.

*noun*, dentistry  
Heinemann Dental

**pulp calcification**

deposition of calcium salts in the tissues of the dental pulp, leading to hardening, mineralisation and progressive narrowing of the pulp chamber.

*noun*, dentistry  
Heinemann Dental

**pulp canal** *root canal*

canal running through the root of the tooth to the pulp chamber.

*noun*, dentistry  
Heinemann Dental

**pulp capping**

application of a protective covering to the dental

pulp.  
*noun*, dentistry  
Heinemann Dental

**pulp cavity**  
cavity at the core of a tooth, comprising the pulp chamber and the root canal.  
*noun*, dentistry  
Heinemann Dental

**pulp chamber**  
natural cavity in the central portion of the tooth crown that is occupied by the dental pulp.  
*noun*, dentistry  
Dorland Medical

**pulp devitalisation** (pulp devitalization)  
any procedure that destroys the vitality of the dental pulp.  
*noun*, dentistry  
Heinemann Dental

**pulp horn**  
one of the horn-like projections of the pulp chamber into the crown of a tooth.  
*noun*, dentistry  
Heinemann Dental

**pulpal**  
relating to the dental pulp.  
*adjective*, dentistry  
Dorland Medical

**pulpectomy**  
removal of dental pulp.  
*noun*, dentistry  
Dorland Medical

**pulpitis odontitis**  
inflammation of dental pulp.  
*noun*, dentistry  
Dorland Medical

**pulpotomy**  
removal of vital pulp from the crown of a tooth in order to preserve the pulp in the tooth root.  
*noun*, dentistry  
Heinemann Dental

**pulse**  
rhythmic expansion of an artery which may be felt with the finger.  
*noun*, medicine  
Dorland Medical

**pulse generator**  
that part of an implantable electrical stimulator which generates the specific electrical waveform to be applied to the host tissue.  
*noun*, medical device technology  
Williams

**pultrusion**  
technique in which continuous strands of resin-impregnated reinforcing material are pulled through the orifice of a steel die, then through a heating chamber.  
*noun*, polymer science  
Szycher's Biomaterials

**puncture wound**

penetrating wound.  
*noun*, medicine  
Dorland Medical

**pupil**  
opening in the centre of the iris through which light enters the eye.  
*noun*, ophthalmology  
Dorland Medical

**purse-string suture**  
continuous, circular inverting suture, such as is used to bury the stump of the appendix.  
*noun*, surgery  
Dorland Medical

**pus**  
a protein-rich liquid inflammation product made up of leucocytes, a thin fluid, and cellular debris.  
*noun*, medicine  
Dorland Medical

**push-out test**  
experimental determination of the degree of bone bonding of a biomaterial through the application of a mechanical force to a sample of the material, previously placed in the bone of an experimental animal, the force tending to push the sample out of the bone and the strength of attachment being determined by the frictional force which resists the movement.  
*noun*, biomaterials science  
Williams

**putting into service**  
1. the stage at which a device has been made available to the final user as being ready for use on the Community market for the first time for its intended purpose.  
*noun*, regulatory affairs  
2. making available to the medical profession for implantation.  
*noun*, regulatory affairs  
EU Directive

**pycnosis**  
shrinkage of the stainable material of a nucleus into a deeply staining knot, usually a feature of cell degeneration.  
*noun*, biology  
Larousse Science

**pyelonephritis**  
inflammation of the kidney and its pelvis due to bacterial infection.  
*noun*, medicine  
Dorland Medical

**pyloric stenosis**  
narrowing of the pylorus, the muscular exit from the stomach.  
*noun*, medicine  
Black's Medical

**pyloric valve**  
prominent fold of mucous membrane at the pyloric orifice of the stomach.  
*noun*, anatomy  
Dorland Medical

**pyloroplasty**

operation for widening the lumen of the pylorus when this has been pathologically narrowed.

*noun*, surgery  
Larousse Science

**pylorus**

distal aperture of the stomach, opening into the duodenum.

*noun*, anatomy  
Dorland Medical

**pyogenic**

producing pus.  
*noun*, medicine  
Dorland Medical

**pyorrhoea**

lay term used to denote any form of periodontal disease.

*noun*, dentistry  
Heinemann Dental

**pyrogen**

any fever-producing organic substance arising from microbial contamination and responsible for many of the febrile reactions that occur in patients following injection;  
*noun*, medicine  
Szycher's Biomaterials

**pyrogenicity**

1. the causation of a response by heat or fever.

*noun*, biology  
Longmans

2. the ability of a biomaterial or medical device to cause fever on implantation into a host.

*noun*, biomaterials science  
Williams

**pyrolysis**

transformation of a substance into other substances by heat alone.

*noun*, chemistry  
Szycher's Biomaterials

**pyrrole**

heterocyclic compound having a ring of four carbon atoms and one nitrogen, a colourless liquid of chloroform-like odour.

*noun*, chemistry  
Larousse Science

**pyrrolidine**

simple base, (CH<sub>2</sub>)<sub>4</sub>NH, obtained from tobacco or prepared from pyrrole.

*noun*, chemistry  
Dorland Medical

**pyruvate**

salt, ester, or anion of pyruvic acid.

*noun*, chemistry  
Dorland Medical

**quadrant**

one half of each arch of the dentition, the dividing line being the mid-point of the arch.

*noun*, dentistry  
Heinemann Dental

**quadri-**

signifying four.

*prefix*, general  
Dorland Medical

**quadriceps**

having four heads.

*adjective*, anatomy  
Dorland Medical

**qualified investigator**

person who is a member in good standing of a professional association of persons entitled under local laws to provide health care in the locality, and who is designated, by the ethics committee of the health care facility at which investigational testing is to be conducted, as the person to conduct the testing.

*noun*, regulatory affairs  
Canadian Medical Devices

**quality**

1. totality of characteristics of an entity that bear on its ability to satisfy stated and applied needs.

*noun*, regulatory affairs  
ISO

2. totality of features and characteristics that bear on the ability of a device to satisfy fitness-for-use, including safety and performance.

*noun*, regulatory affairs  
CFR

**quality assurance QA.**

collective term for the organisation and administration of checks, test and audits to ensure that quality standards are defined and that products are made under good manufacturing practice to consistently meet or exceed these standards.

*noun*, regulatory affairs  
Larousse Science

**quality audit**

systematic, independent examination of a manufacturer's quality system that is performed at defined intervals and at sufficient frequency to determine whether both quality system activities and the results of such activities comply with quality system procedures, that these procedures are implemented effectively, and that these procedures are suitable to achieve quality system objectives.

*noun*, regulatory affairs  
CFR

**quality control**

form of inspection involving sampling of parts in a mathematical manner to determine whether or not the entire production run is acceptable, a specified number of defective parts being permissible.

*noun*, engineering  
Larousse Science

**quality policy**

the overall intentions and direction of an organisation with respect to quality, as established by management with executive responsibility.

*noun*, regulatory affairs  
CFR

**quality system**

organisation structure, responsibilities, procedures, processes and resources for implementing quality management.

*noun*, regulatory affairs  
CFR

**quartz**

crystalline form of silica (silicon dioxide).

*noun*, material science  
Dorland Medical

**quasi-**

signifying resembling (but not being).

*prefix*, general  
Heinemann Dental

**quench**

to rapidly cool materials from the molten state to the solid state.

*verb*, material science  
Szycher's Biomaterials

**quenching**

any type of interference, such as absorption of fluorescent emission by the surrounding medium, that reduces the intensity of fluorescence.

*noun*, chemistry  
Dorland Medical

**quiescent**

1. general term for a system waiting to be operated, as a valve ready to amplify or a gas-discharge tube to fire.

*adjective*, general  
Larousse Science

2. that phase of a response or reaction which represents a quiet or resting state.

*adjective*, general  
Williams

**quinone**

any of a group of highly aromatic compounds derived from benzene or from multiple ring hydrocarbons and containing two ketone group substitutions.

*noun*, chemistry  
Dorland Medical

**racemic**

optically inactive, being composed of equal amounts of dextrorotatory and levorotatory isomers.

*adjective*, chemistry  
Dorland Medical

**racimisation** (racimization)

transformation of an optically active substance into racemic inactive form, either by an isomerisation through a symmetrical intermediate or through a reaction by which a new substance is formed via a similar intermediate or transition state.

*noun*, chemistry  
Larousse Science

**radial**

pertaining to the radius of the arm or to the radial (lateral) aspect of the arm as opposed to the ulnar (medial) aspect.

*adjective*, anatomy  
Dorland Medical

**radiation**

1. divergence from a common centre.

*noun*, general

2. energy transmitted by waves through space or through some medium or by extension, a stream of particles, such as electrons or alpha particles.

*noun*, physics  
Dorland Medical

**radiation curing**

process for curing (hardening) polymers with high energy electrons or short wavelengths of light.

*noun*, polymer science  
Szycher's Biomaterials

**radiation damage**

the unwanted alterations observed in a polymer following exposure to ionising or penetrating radiation.

*noun*, polymer science  
Szycher's Biomaterials

**radiation dose**

amount of radiation absorbed by a substance.

*noun*, physics  
Larousse Science

**radiation polymerisation** (radiation polymerization)

polymerisation reaction initiated by exposure to radiation such as UV rays or gamma rays.

*noun*, polymer science  
Szycher's Biomaterials

**radical operation**

one involving extensive resection of tissue for complete extirpation of disease.

*noun*, surgery  
Dorland Medical

**radicle**

one of the smallest branches of a vessel or nerve.

*noun*, anatomy  
Dorland Medical

**radicular**

pertaining to a root or radicle.

*adjective*, anatomy  
Dorland Medical

**radicular pulp**

that part of the dental pulp found within the root of the tooth.

*noun*, dentistry  
Heinemann Dental

**radio frequency welding**

method of welding thermoplastics using a radio frequency field to provide the necessary heat.

*noun*, engineering  
Szycher's Biomaterials

**radio immuno assay**

highly sensitive and specific assay method that uses the competition between radiolabeled and unlabeled substances in an antigen-antibody reaction to determine the concentration of the unlabeled substance, which may be an antibody or a substance against which specific antibodies can be produced.

*noun*, immunology

Dorland Medical

**radio-**

pertaining to radiation.

*prefix*, physics

Dorland Medical

**radio-opaque**

exhibiting opacity or impenetrability to X-rays or other forms of radiation.

*adjective*, medicine

Szycher's Biomaterials

**radio-opaque polymer**

any polymer that has been rendered opaque to X-rays by the incorporation of a radio-opaque element or compound such as barium sulphate.

*noun*, medical device technology

Williams

**radiodiagnosis**

diagnosis by means of X-rays and radiographs.

*noun*, medicine

Dorland Medical

**radiofrequency glow discharge**

process used for the surface modification of materials, especially polymers, which involves the use of a low pressure ionised gas environment.

*noun*, polymer science

Williams

**radiograph**

film negative produced by the use of radiography.

*noun*, medicine

Heinemann Dental

**radiography**

the making of film records of internal structures of the body by passing X-rays or gamma rays through the body to act on specially sensitised film.

*noun*, medicine

Dorland Medical

**radioisotope** *radionuclide*

radioactive isotope, i.e., one whose atoms undergo radioactive decay emitting alpha, beta, or gamma radiation.

*noun*, chemistry

Dorland Medical

**radiolabel**

any radioactive moiety that can be added to a substance, material or tissue component that facilitates observation of events in that medium through detection of the spatial distribution of the labelled component or measurement of its rate of decay.

*noun*, chemistry

Williams

**radiological loosening**

apparent loosening of a joint replacement prosthesis as evidenced by a zone of radiolucency between implant and bone on X-rays.

*noun*, surgery

Williams

**radiology**

branch of the health sciences dealing with radioactive substances and radiant energy and

with the diagnosis and treatment of disease by means of both ionising (e.g., X-rays) and non-ionising radiation.

*noun*, medicine

Dorland Medical

**radiolucent**

permitting the passage of radiant energy, such as X-rays, with little attenuation.

*adjective*, medicine

Dorland Medical

**radiolucent line**

line that may appear on a radiograph around an implant placed within bone, usually signifying a lack of contact between bone and material.

*noun*, surgery

Williams

**radionecrosis**

tissue destruction due to radiant energy.

*noun*, medicine

Dorland Medical

**radionuclide** *radioisotope*

radioactive nuclide.

*noun*, chemistry

Dorland Medical

**radiopacity**

quality or property of obstructing the passage of radiant energy, such as X-rays, the representative areas appearing light or white on the exposed film.

*noun*, medicine

Dorland Medical

**radiopharmaceutical**

radioactive pharmaceutical used for diagnostic or therapeutic purposes.

*noun*, pharmacology

Dorland Medical

**radiotherapy**

theory and practice of medical treatment of disease, particularly any of the forms of cancer, with large doses of X-rays or other ionising radiations.

*noun*, medicine

Larousse Science

**radula**

any scraping instrument such as a scaler, used to remove dental calculus from the teeth.

*noun*, dentistry

Heinemann Dental

**Raman scattering**

scattering of light by molecules in which there is a change of frequency due to the molecules gaining or losing energy as a result of transitions between vibrational or rotational energy levels.

*noun*, chemistry

Larousse Science

**Raman spectroscopy**

method making use of Raman scattering for chemical analysis.

*noun*, chemistry

Larousse Science

**ramus**

branch, as of a nerve, vein, or artery.

*noun*, anatomy  
Dorland Medical

**random copolymer**

polymer where the repeat units are dispersed irregularly along the linear chains.

*noun*, chemistry  
Larousse Science

**randomised clinical trial** (randomized clinical trial)

study whereby subjects are randomly allocated to an intervention.

*noun*, statistics  
Witkin

**rapid prototyping**

any technique that allows the rapid production of a prototype from the information of a CAD drawing, particularly those techniques that do not involve traditional machine-shop processes.

*noun*, engineering  
Williams

Notes: The best known processes are stereolithography, selected laser sintering and ballistic particle manufacturing.

**rare earth elements**

group of metallic elements with atomic numbers between 58 and 71 possessing closely similar chemical properties.

*noun*, chemistry  
Larousse Science

**rarefaction**

abnormal decrease in the density of bone as a result of extraction from it of calcium salts, as in infection of bone.

*noun*, medicine  
Larousse Science

**rash**

temporary eruption on the skin.

*noun*, medicine  
Dorland Medical

**rate constant**

speed of a chemical reaction, in moles of change per cubic metre per second.

*noun*, chemistry  
Larousse Science

**rate control**

optimisation of the rate of delivery of a drug.

*noun*, pharmacology  
Williams

**raw material**

starting point for manufacture of useful materials.

*noun*, material science  
Larousse Science

**ray**

more or less distinct portion of radiant energy (light or heat), proceeding in a specific direction.

*noun*, physics  
Dorland Medical

**re-entrant**

angle or shape in moulding tool which would normally prevent product removal at end of cycle.

*adjective*, engineering

Larousse Science

**reactive**

readily susceptible to chemical change.

*adjective*, chemistry  
Larousse Science

**reagent**

substance or solution used to produce a characteristic reaction in chemical analysis.

*noun*, chemistry  
Larousse Science

**reagent control**

extraction vehicle without test material subjected to extraction conditions and test procedures.

*noun*, biomaterials science  
ISO

**real-time test**

laboratory test performed to assess degradation of devices or materials which does not employ accelerating factors such as temperature or rapid cycling.

*noun*, biomaterials science  
ISO

**reamer**

1. hand- or machine-operated tool for finishing drilled holes, consisting of a cylindrical or conical head on which cutting edges are formed by longitudinal or spiral flutes, or in which separate teeth are inserted.

*noun*, engineering  
Larousse Science

2. thin corkscrew-like instrument, used either by hand or with a dental engine, for enlarging root canals.

*noun*, dentistry  
Heinemann Dental

**reattachment**

1. process whereby a loosened or a replanted tooth becomes attached again to the alveolus.

*noun*, dentistry

2. process whereby fibres of the periodontium become reattached to the cementum and/or alveolar bone following therapy to reduce pocket depth.

*noun*, dentistry  
Heinemann Dental

**rebase**

process of fitting a new denture base without altering the occlusal relations of the teeth.

*noun*, dentistry  
Heinemann Dental

**recalcification**

process in which calcium is added to a solution from which it has previously been removed.

*noun*, biology  
Williams

Notes: Used particularly in some tests for the haemocompatibility of substances or materials.

**recall**

any action taken by the manufacturer, importer or distributor of a device to recall or correct the device, or to notify its owners and users of its

defectiveness or potential defectiveness, after becoming aware that the device a) may be hazardous to health; b) may fail to conform to any claim made by the manufacturer or importer relating to its effectiveness, benefits, performance characteristics or safety; or c) may not meet the requirements of the Regulations.

*noun*, regulatory affairs

Canadian Medical Devices

1. correction or removal of a device for human use where FDA finds that there is a reasonable probability that the device would cause serious, adverse health consequences or death.

*noun*, regulatory affairs

CFR

2. return of a medical device to the supplier, its modification by the supplier at the site of installation, its exchange or its destruction, in accordance with the instruction contained in an advisory notice when there is a risk of death or serious deterioration to the state of health.

*noun*, regulatory affairs

CEN

### **receptive field**

area in the visual field that evokes a response in a neuron.

*noun*, ophthalmology

Biomedical Engineering Handbook

### **receptor**

1. sensory nerve ending that responds to various stimuli.

*noun*, biology

2. molecule on the surface or within a cell that recognises and binds with specific molecules, producing a specific effect in the cell.

*noun*, biology

Dorland Medical

3. chemical grouping on a macromolecule or a cell which can combine selectively with other complementary molecules or cells.

*noun*, biology

Larousse Science

### **recessive**

1. tending to recede.

*adjective*, genetics

2. incapable of expression unless the responsible allele is carried by both members of a pair of homologous chromosomes.

*adjective*, general

Dorland Medical

### **recipient**

one who receives, as a blood transfusion, or a tissue organ graft.

*noun*, clinical practice

Dorland Medical

### **recognition**

interaction of immunologically competent cells with antigen, involving antigen binding to a specific receptor on the cell surface and resulting in an immune response.

*noun*, immunology

Dorland Medical

### **recombinant**

new cell or individual that results from genetic recombination.

*noun*, genetics

Dorland Medical

### **recombinant DNA**

DNA which contains sequences from different sources, made usually as the result of laboratory procedures *in vitro*.

*noun*, biology

Larousse Science

### **recombination**

1. reassortment of genes or characters in combinations different from what they were in the parents, in the case of linked genes by crossing-over.

*noun*, genetics

2. chain determination reaction where two active free radical chain ends combine to form a non-reactive polymer chain.

*noun*, polymer science

Larousse Science

### **reconstructive surgery**

any form of surgery which involves the physical rearrangement or replacement of tissues of the body.

*noun*, surgery

Williams

### **recovery**

first stage in the annealing process of cold-worked metals, in which some restoration of original properties (e.g. hardness, ductility, resistivity) is achieved by a reduction in the density of dislocations through their thermally stimulated mutual annihilation.

*noun*, metallurgy

Larousse Science

### **recreational drug**

drug taken for non-medical reasons such as mood enhancement, but often with addictive effects.

*noun*, general

Larousse Science

### **recrystallisation (recrystallization)**

1. stage in the annealing process of cold-worked metals above about 0.4-0.5  $T_{SUBSCRIPT}m$ , in which deformed crystals are replaced by a new generation of crystals, which begin to grow at certain points in the deformed metal and eventually absorb the deformed crystals.

*noun*, metallurgy

(recrystallization)

2. process of reforming crystals, usually by dissolving them, concentrating the solution, and thus permitting the crystals to reform.

*noun*, chemistry

Larousse Science

### **rect(o)-**

signifying the rectum.

*prefix*, anatomy

Dorland Medical

### **rectal**

route of administration of a drug or device through

the rectum.  
*adjective*, pharmacology  
Szycher's Biomaterials

**recurrence**

return of symptoms or of a disease, after a period of remission, or of a malignant tumour after surgical removal or other therapy.

*noun*, medicine  
Heinemann Dental

**red blood cell** *erythrocyte*

one of the red blood corpuscles of vertebrates; flattened oval or circular disc-like cell whose purpose is to carry oxygen in combination with the pigment haemoglobin in it, and to remove carbon dioxide.

*noun*, biology  
Larousse Science

**red corpuscle** *erythrocyte*

erythrocyte.  
*noun*, medicine  
Dorland Medical

**reduce**

1. to decrease in weight or size.
2. to restore to the normal place or relation of parts, as to reduce a fracture.

*verb*, medicine  
Dorland Medical

**reference dose**

estimate of the largest amount of a substance (e.g. a chemical) to which a person can be exposed on a daily basis that is not anticipated to result in adverse effects. Usually expressed in milligrams per kilogram per day (mg/kg/day).

*noun*, pharmacology  
CEQ/OECD

**reference electrode**

electrode used as a standard relative to which a varying potential is measured.

*noun*, chemistry  
Larousse Science

**reference material**

material or substance one or more of whose property values are sufficiently homogeneous and well established to be used for the calibration of an apparatus, the assessment of a measurement method, or for assigning values to materials.

*noun*, regulatory affairs  
ISO

Notes: When tested by the procedure described, the reference material demonstrates the suitability of the procedure to yield a reproducible, predictable response. The response may be negative or positive.

**reflux**

backward or return flow.

*noun*, chemistry  
Dorland Medical

**refractory metals**

term applied to transition group elements in the Periodic Table which have high melting points, including chromium, titanium, platinum, tantalum, tungsten and zirconium.

*noun*, metallurgy  
Larousse Science

**regenerated cellulose**

chemical dissolution of normally insoluble natural cellulose and reclamation from solution to produce fibre etc.

*noun*, chemistry  
Larousse Science

**regeneration**

synthesis of new, natural tissue at the site of a tissue (one cell type) or organ (more than one cell type) which either has been lost due to injury or has failed due to a chronic condition.

*noun*, medicine  
Biomedical Engineering Handbook

**regional targeting**

intentional delivery of a drug to a specific site where it will exert its intended action.

*noun*, pharmacology  
Williams

**registration**

the making of a record of the jaw relations present or desired, in order to transfer them to an articulator to facilitate proper construction of a dental prosthesis.

*noun*, dentistry  
Dorland Medical  
*noun*, regulatory affairs  
Notes: NEED DEF.

**regression**

1. return to a former or earlier state.
2. subsidence of symptoms or of a disease process.
3. tendency in successive generations toward the mean.

*noun*, general  
*noun*, medicine  
*noun*, statistics  
4. defensive retreat to an earlier, often infantile, pattern of behaviour or thought.  
*noun*, medicine  
Dorland Medical

**regulation**

1. act of adjusting or state of being adjusted to a certain standard.
2. adaptation of form or behaviour of an organism to changed conditions.

*noun*, biology  
Dorland Medical

**regulatory body**

any organisation set up by a government to oversee the proper use of method or technology.

*noun*, regulatory affairs  
Larousse Science

**regurgitation**

flow in the opposite direction from normal.

*noun*, medicine  
Dorland Medical

**rehabilitation**

restoration of normal form and function after illness or injury.

*noun*, medicine  
Dorland Medical

**rehabilitation engineering**

those aspects of bioengineering which specifically concern the restoration of patients to normal life after illness or injury.

*noun*, bioengineering  
Williams

**reimbursement**

process by which the cost of medical treatment, including the costs of any medical device used in that treatment, may be reclaimed by the patient from a private or public health insurance scheme.

*noun*, regulatory affairs  
Williams

**reimplantation**

replacement of tissue or a structure in the site from which it was previously lost or removed.

*noun*, surgery  
Dorland Medical

**reinforced plastic**

general term for composite materials in which the basic plastic has been reinforced by incorporating a fibrous material, e.g. paper, cloth, aramid carbon or glass fibre.

*noun*, polymer science  
Larousse Science

**reinforced thermoplastics**

reinforced structures in which the base resin is a thermoplastic.

*noun*, physics  
Szycher's Biomaterials

**reinnervation**

restoration of nerve supply to a part from which it has been lost, occurring spontaneously or by nerve grafting.

*noun*, surgery  
Dorland Medical

**rejection**

immune reaction against grafted tissue that results in failure of the graft to survive.

*noun*, immunology  
Dorland Medical

**relapse**

return of a disease after its apparent cessation.

*noun*, medicine  
Dorland Medical

**relative risk RR.**

ratio of the risk of disease or death among the exposed to the risk among the unexposed.

*noun*, medicine  
Witkin

**relative viscosity**

property of a fluid medium equivalent to the ratio of time for solution to fall a standard distance in a capillary viscometer to time for solvent to fall the same distance in the same device.

*noun*, physics  
Larousse Science

**relaxation**

decrease in stress under sustained constant strain.

*noun*, material science  
Szycher's Biomaterials

**relaxation time**

time required for a stress under a sustained strain to diminish to a predetermined fraction of its initial value.

*noun*, material science  
Szycher's Biomaterials

**release agent**

oil or emulsion which is brushed or sprayed onto the inner surface of a mould to facilitate the removal of the product after it has formed.

*noun*, engineering  
Larousse Science

**release reaction**

process by which a cell responds to a stimulus by releasing specific chemicals with the purpose of influencing events in the surrounding medium.

*noun*, biology  
Williams

Notes: Seen, for example, with platelets which release constituents of their granules during the activation process.

**reline**

to resurface or rebase a denture for a more accurate fit.

*verb*, dentistry  
Heinemann Dental

**remedial action**

any action other than routine maintenance or servicing, of a device where such action is necessary to prevent recurrence of a reportable event.

*noun*, regulatory affairs  
CFR

**remineralisation** (remineralization)

restoration of mineral elements, as of calcium salts to the bone.

*noun*, biology  
Dorland Medical

**remission**

diminution or abatement of the symptoms of a disease.

*noun*, medicine  
Dorland Medical

**remodelling** (remodeling)

1. reorganisation or renovation of an old structure.

*noun*, general  
Dorland Medical

(remodeling)

2. reorganisation of bone structure, especially following surgical intervention, during fracture repair or as a consequence of altered stress patterns.

*noun*, medicine  
Williams

**removable appliance**

any orthodontic or prosthetic appliance that can be easily removed by the wearer.

*noun*, dentistry  
Heinemann Dental

**removable bridge**

dental bridge which can be removed by the wearer for cleaning or other purposes.

*noun*, dentistry  
Heinemann Dental

**removal *elimination***

process by which the number of viruses and transmissible agents is significantly reduced.

*noun*, regulatory affairs  
CEN

Notes: It is wise to confine use of the term "compensation" to payment or provision of care for research-related injuries.  
Compare: compensation.

**remuneration**

payment for participation in research.

*noun*, regulatory affairs  
IRB Guidebook

Notes: It is wise to confine use of the term "compensation" to payment or provision of care for research-related injuries.  
Compare: compensation.

**renal**

pertaining to the kidney.

*adjective*, anatomy  
Dorland Medical

**renal cortex**

the outer part of the substance of the kidney, composed mainly of glomeruli and convoluted tubules.

*noun*, anatomy  
Dorland Medical

**renal dysfunction**

any condition which involves impaired function of the kidneys.

*noun*, medicine  
Williams

**renal pelvis**

funnel-shaped expansion of the upper end of the ureter into which the renal calices open.

*noun*, anatomy  
Dorland Medical

**reparative dentine**

irregular secondary dentine.

*noun*, dentistry  
Heinemann Dental

**replantation**

replacement of a tooth into the socket from which it has been removed.

*noun*, dentistry  
Heinemann Dental

**reproductive toxicology**

study of the effects of a material or substance on the ability of any organism to which it is exposed to undergo normal reproduction processes.

*noun*, toxicology  
Williams

**reproductivity test**

1. test to evaluate the potential effects of devices, materials and/or their extracts on reproductive function.

*noun*, biomaterials science  
ISO

Notes: This test should only be conducted when the device has potential impact on the reproductive potential of the subject.

The application site of the device should be considered.

**resection**

cutting away of part of an organ, used especially of the ends of bones which form a joint.

*noun*, surgery  
Heinemann Dental

**residual monomer**

fraction of a monomer which has not taken part in a polymerisation process when that process is considered to be complete.

*noun*, polymer science  
Williams

**residual stress**

stresses remaining within a material after processing.

*noun*, engineering  
Larousse Science

**residue**

that remaining after removal of other substances.

*noun*, general  
Dorland Medical

**resilience**

stored energy of a strained material.

*noun*, engineering  
Larousse Science

**resin**

1. any of various solid substances that are obtained from secretions of, or are exuded by, plants, and are used in varnishes, inks, paints etc.

*noun*, biology

2. any of a large class of synthetic materials that have some of the physical properties of natural resins but are different chemically, and are usually used in the formulation of plastics

*noun*, polymer science  
Longmans

**resist**

coating of chemically neutral substance placed over a surface when the latter has to be protected at some stage in processing, as in etching or selective dyeing.

*noun*, polymer science  
Larousse Science

**resistance strain gauge**

foil, wire or thin film resistor which has a resistance which varies with mechanical strain.

*noun*, material science  
Larousse Science

**resistance welding**

pressure welding, in which the heat to cause fusion of metals is produced by the welding current flowing through the contact resistance between the two surfaces to be welded, these being held together under mechanical pressure.

*noun*, engineering  
Larousse Science

**resolution**

1. subsidence of a pathologic state.

*noun*, medicine  
Dorland Medical

2. extent to which fine detail can be clearly

distinguished in an analytical technique.

*noun*, physics  
Williams

**resorbable**

capable of being resorbed into the body.  
*noun*, biomaterials science  
Heinemann Dental

**resorption**

lysis and assimilation of a substance, as of bone.  
*noun*, biology  
Dorland Medical

**resorption lacuna** *Howship's lacunae*

pit or groove in developing bone that is undergoing resorption.  
*noun*, biology  
Dorland Medical

**respiration**

exchange of oxygen and carbon dioxide between the atmosphere and the body cells, including inspiration and expiration, diffusion of oxygen from alveoli to the blood and of carbon dioxide from the blood to the alveoli, and the transport of oxygen to and carbon dioxide from the body cells.  
*noun*, biology  
Dorland Medical

**respiratory burst**

increased oxidative metabolism which occurs in phagocytic cells following activation.  
*noun*, immunology  
Roitt Immunology

**response**

any action or change of condition evoked by a stimulus.  
*noun*, general  
Dorland Medical

**rest**

extension on a partial denture or orthodontic appliance to assist in its support or stabilisation.  
*noun*, dentistry  
Heinemann Dental

**restenosis**

recurrent stenosis, especially of a cardiac valve or stented segment of an artery after surgical correction of the primary condition.  
*noun*, biology  
Dorland Medical

**resting potential**

electrical potential across the membrane of a cell, when an action potential is not occurring.  
*noun*, chemistry  
Larousse Science

**restoration** *filling*

1. replacement of missing or removed substance or tissue, as in the filling of teeth, or in prosthetic work in the mouth.  
*noun*, medical device technology

*filling*

2. material inserted into a prepared cavity in a tooth.  
*noun*, dentistry

Heinemann Dental

**restorative dentistry**

branch of dentistry concerned with the provision of a healthy and functional dentition for the dentate or the edentulous.  
*noun*, dentistry  
Heinemann Dental

**restricted device**

device which has been restricted for sale, distribution or use only upon the written or oral authorisation of a practitioner licensed by law to administer or use the device or upon other such conditions as imposed by a regulatory authority  
*noun*, regulatory affairs  
CFR

**restriction endonuclease** *restriction enzyme*

class of endonucleases able to cleave DNA at a specific nucleotide sequence.  
*noun*, biology  
Larousse Science

**restriction enzyme** *restriction endonuclease*

class of endonucleases able to cleave DNA at a specific nucleotide sequence.  
*noun*, biology  
Larousse Science

**rests of Malassez** *epithelial cell rests*

the remains of the epithelial root sheath (Hertwig's sheath) found in the periodontal ligament, and contributing to the formation of dental cysts.  
*noun*, dentistry  
Heinemann Dental

**retained root**

tooth root, or part of a root, left in the bone or soft tissue after extraction, as a result of severe caries, or to prevent alveolar resorption.  
*noun*, dentistry  
Heinemann Dental

**retainer** *retaining appliance*

any form of attachment by which a restoration is fastened to an abutment tooth.  
*noun*, dentistry  
Heinemann Dental

**retaining appliance** *retainer*

any appliance that holds in position teeth that have been moved.  
*noun*, dentistry  
Heinemann Dental

**rete**

network or meshwork, especially of blood vessels.  
*adjective*, anatomy  
Dorland Medical

**retention**

process of holding back or keeping in position, as persistence in the body of material normally excreted, or maintenance of a dental prosthesis in proper position in the mouth.  
*noun*, medicine  
Dorland Medical

**retention form**

the shape of a dental cavity, designed to prevent

displacement of the restoration by lifting or tipping stress.

*noun*, dentistry  
Heinemann Dental

**reticular**

resembling a net.  
*adjective*, general  
Dorland Medical

**reticulated foam**

foam in which the cell structure is delineated by rod-like struts and ties of material rather than by cell walls.

*noun*, engineering  
Larousse Science

**reticuloendothelial system RES.**

system of specialised reticular and endothelial cells concentrated in the bone marrow, liver, spleen and lymph glands.

*noun*, anatomy  
Heinemann Dental

**reticulum**

small network, especially a protoplasmic network in cells.

*noun*, anatomy  
Dorland Medical

**retina**

light sensitive layer of the eye.

*noun*, ophthalmology  
Larousse Science

**retinal rod**

highly specialised cylindrical segment of the visual cells containing rhodopsin.

*noun*, ophthalmology  
Dorland Medical

Notes: The rods serve night vision and detection of motion, and together with the retinal cones, they form the light-sensitive elements of the retina.

**retinitis**

inflammation of the retina.

*noun*, ophthalmology  
Dorland Medical

**retinoblastoma**

malignant congenital blastoma, hereditary or sporadic, composed of tumour cells arising from the retinoblasts.

*noun*, medicine  
Dorland Medical

**retinopathy**

any non-inflammatory disease of the retina.

*noun*, ophthalmology  
Dorland Medical

**retr(o)-**

signifying behind.  
*prefix*, general  
Dorland Medical

**retractor**

1. instrument for holding open the lips of a wound.

*noun*, surgery

2. muscle that retracts.

*noun*, anatomy  
Dorland Medical

**retrieval analysis**

investigations carried out on an implantable medical device after removal from a patient and all of the conditions relating to its use, in order to ascertain the reasons for failure.

*noun*, medical device technology  
Williams

**retrognathia**

underdevelopment of the mandible or of the maxilla, or of both.

*noun*, dentistry  
Heinemann Dental

**retrograde root filling** *reverse root filling*

placing of a root filling in the apex of a tooth, which is surgically exposed, to seal the end of the root canal after apicectomy.

*noun*, dentistry  
Heinemann Dental

**retrospective study**

research conducted by reviewing records from the past (e.g., birth and death certificates, medical records, school records, or employment records) or by obtaining information about past events elicited through interviews or surveys.

*noun*, medicine  
IRB Guidebook

**retrovirus**

virus of higher organisms whose genome is RNA, but which can insert a DNA copy of its genome into the host's chromosome.

*noun*, biology  
Larousse Science

**reusable surgical instrument**

instrument intended for surgical use by cutting, drilling, sawing, scratching, scraping, clamping, retracting, clipping or similar procedures, without connection to any active medical device and which can be reused after appropriate procedures have been carried out.

*noun*, medical device technology  
EU Directive

**revascularisation** (revascularization)

1. natural restoration of blood supply, as after a wound.

*noun*, biology

(revascularization)

2. restoration of an adequate blood supply to a part by means of a blood vessel graft, as in aortocoronary bypass.

*noun*, surgery  
Dorland Medical

**reverse engineering**

disassembly of a finished product for analysis of materials, design and manufacture.

*noun*, engineering  
Larousse Science

**reverse osmosis**

purification of water by forcing it under pressure through a membrane not permeable to the impurities to be removed.

*noun*, chemistry

Larousse Science

**reverse root filling** *retrograde root filling*  
placing of a root filling in the apex of a tooth, which is surgically exposed, to seal the end of the root canal after apicectomy; the material is inserted through the apex, rather than through the pulp chamber.

*noun*, dentistry  
Heinemann Dental

**reverse transcriptase**  
enzyme, found in retroviruses, that catalyses the formation of double-stranded DNA from an RNA template.

*noun*, biology  
Larousse Science

**reversion**  
1. returning to a previous condition.

*noun*, medicine

2. mutation of a mutant phenotype so that the original function is restored.

*noun*, genetics  
Dorland Medical

**revision surgery**  
any procedure that involves re-operation at a site of previous implantation of a medical device, usually associated with replacement of that device with another or treatment of the condition with another reconstructive procedure.

*noun*, surgery  
Williams

**rework**  
action taken on a non-conforming product so that it will fulfil the specified requirements before it is released for distribution.

*noun*, engineering  
CFR

**Reynold's number**  
the dimensionless number defined as INSERT FORMULA where  $\rho$ =density of a fluid travelling at velocity  $v$  in a pipe of diameter  $d$ .

*noun*, physics  
Larousse Science

**rhabd(o)-**  
signifying rod; rod-shaped.

*prefix*, general  
Dorland Medical

**rhabdomyosarcoma**  
highly malignant tumour of striated muscle derived from primitive mesenchymal cells.

*noun*, medicine  
Dorland Medical

**rhodium Re.**  
element, at. no. 75, silvery-white lustrous metal.

*noun*, chemistry  
Dorland Medical

**rheology**  
science of the deformation and flow of matter, such as the flow of blood through the heart and blood vessels.

*noun*, physics  
Dorland Medical

**rheumatic fever**  
acute inflammatory disease involving the heart and the joints which generally follows a few weeks after an infection by *Streptococcus pyogenes* of Lancefield Group A.

*noun*, medicine  
Larousse Science

**rheumatic heart disease**  
the most important manifestation and sequel to rheumatic fever, consisting chiefly of valvular deformities.

*noun*, medicine  
Dorland Medical

**rheumatism**  
general term for a wide range of diseases characterised by painful inflammation and degeneration particularly of joints and muscles.

*noun*, medicine  
Larousse Science

**rheumatoid**  
associated with rheumatoid arthritis.

*adjective*, medicine  
Dorland Medical

**rheumatoid arthritis**  
chronic systemic disease primarily of the joints, usually polyarticular, marked by inflammatory changes in the synovial membranes and articular structures and by atrophy and rarefaction of the bones.

*noun*, medicine  
Dorland Medical

**rhinitis**  
inflammation of the nasal mucous membrane.

*noun*, medicine  
Dorland Medical

**rhinoplasty**  
plastic surgery of the nose.

*noun*, surgery  
Dorland Medical

**rhod(o)-**  
signifying red.  
*prefix*, general  
Dorland Medical

**rhodamine**  
any of a group of red fluorescent dyes used to label proteins in various immunofluorescence techniques.

*noun*, biology  
Dorland Medical

**rhodium Rh.**  
metallic element of the platinum group, at. no. 45.

*noun*, chemistry  
Larousse Science

**rhombic crystal**  
*noun*, chemistry

**$\alpha$ -rhythm**  
electroencephalographic waves having a uniform rhythm and average frequency of 10 per second, typical of a normal person awake in a quiet resting

state.  
*noun*, medicine  
Dorland Medical

**rib**

any one of the paired bones, 12 on either side in humans, extending from the thoracic vertebrae toward the median line on the ventral aspect of the trunk, forming the major part of the thoracic skeleton.  
*noun*, anatomy  
Dorland Medical

**riboflavin**

vitamin B SUBSCRIPT 12  
*noun*, biology  
Dorland Medical

**ribonuclease**

enzyme which catalyses the depolymerisation of ribonucleic acid.  
*noun*, chemistry  
Dorland Medical

**ribonucleic acid RNA.**

nucleic acid found in all living cells, constituting the genetic material in the RNA viruses, and playing a role in the flow of genetic information.  
*noun*, genetics  
Dorland Medical

**ribosome**

any of the intracellular ribonucleoprotein particles concerned with protein synthesis which consist of reversibly dissociable units and which are found either bound to cell membranes or free in the cytoplasm.  
*noun*, biology  
Dorland Medical

**right heart**

right atrium and ventricle, which propel the venous blood into the pulmonary circulation.  
*noun*, medicine  
Dorland Medical

**rigid gas permeable contact lens**

device intended to be worn directly against the cornea of the eye to correct vision conditions, being made of various materials, such as cellulose acetate butyrate, polyacrylate-silicone, or silicone elastomers, which generally do not absorb or attract water.  
*noun*, ophthalmology  
CFR

**ring opening polymerisation** (ring opening polymerization)

polymerisation by the molecular unfolding of a cyclic monomer, producing a polymer chain in which the repeat units are joined together by links similar to those of the starting monomer, but now in a linear fashion.  
*noun*, polymer science  
Szycher's Biomaterials

**Ringer's solution**

solution of sodium chloride, calcium chloride and potassium chloride.  
*noun*, chemistry

Heinemann Dental

**risk**

1. chance of something adverse happening.  
*noun*, general  
HSE, 1995
2. possibility that a harmful event (death, injury, etc) arising from exposure to a physical or chemical agent may occur under specific conditions.  
*noun*, general  
OECD
3. measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.  
*noun*, general  
EPA
4. probability of harm or injury (physical, psychological, social, or economic) occurring as a result of participation in a research study.  
*noun*, general  
IRB Guidebook

**risk analysis**

1. quantitative evaluation of the likelihood of undesired events and the likelihood of harm or damage being caused together with the value judgements made concerning the significance of the results.  
*noun*, general  
Jones, 1992
2. process for the evaluation of risk consisting of three components: risk assessment, risk management and risk communication.  
*noun*, general  
WHO

**risk communication**

interactive process of exchange of information and opinion on risk among risk assessors, risk managers, and other interested parties.  
*noun*, general  
WHO

**risk evaluation**

establishment of a qualitative or quantitative relationship between risks and benefits, involving the complex process of determining the significance of the identified hazards and estimated risks to those organisms or people concerned with or affected by them.  
*noun*, general  
Duffus, 1993

**risk management**

decision-making process involving consideration of political, social, economic and engineering factors with relevant risk assessments relating to a potential hazard so as to develop, analyse, and compare regulatory options and to select the optimal regulatory response for safety from that hazard.  
*noun*, general  
OECD

**risk to health**

reasonable probability that use of, or exposure to, a medical device will cause serious adverse health consequences or death.  
*noun*, regulatory affairs

CFR

**Rochette bridge**

bridge in which the abutments are bonded to the acid-etched surfaces of the supporting teeth.

*noun*, dentistry  
Heinemann Dental

**Rockwell hardness**

hardness of a material expressed as a number derived from the net increase in depth of indentation as the load of an indenter is increased from one load to a higher load and then returned to the minor load.

*noun*, engineering  
Szycher's Biomaterials

**Rockwell harness test**

method of determining the hardness of metals by indenting them with a hard steel ball or a diamond cone, first applying a light load and then increasing to a specified higher load, and measuring the additional depth of penetration.

*noun*, engineering  
Larousse Science

**rod**

straight, slim mass of substance.

*noun*, engineering  
Dorland Medical

**roentgen rays** *X-rays*

electromagnetic vibrations of short wavelengths (approximately 0.01 to 10nm) or corresponding quanta that are produced when electrons moving at high velocity impinge on various substances.

*noun*, physics  
Dorland Medical

**rongeurs**

bone-cutting forceps.

*noun*, surgery  
Heinemann Dental

**room temperature vulcanisation** (room temperature vulcanization) **RTV**.

special characteristic of some elastomers, such as silicones, which do not require heating to cure.

*adjective*, polymer science  
Szycher's Biomaterials

**root**

that portion of an organ, such as a tooth, hair, or nail, that is buried in the tissues, or by which it arises from another structure.

*noun*, anatomy  
Dorland Medical

**root amputation**

surgical excision of the apical portion of a tooth root.

*noun*, dentistry  
Heinemann Dental

**root apex**

terminal end of the root of the tooth.

*noun*, dentistry  
Dorland Medical

**root canal** *pulp canal*

canal, containing dental pulp, running through the

root of the tooth to the pulp chamber.

*noun*, dentistry  
Heinemann Dental

**root canal filling**

material that is used during endodontic therapy to fill the root canal of a tooth.

*noun*, dentistry  
Szycher's Medical Devices

**root canal post**

device intended to be cemented into the root canal of a tooth to stabilise and support a restoration.

*noun*, dentistry  
CFR

**root planing**

smoothing of the roughened root surfaces of a tooth after subgingival scaling.

*noun*, dentistry  
Heinemann Dental

**rotational casting**

process of forming hollow articles from fluid materials by rotating a mould containing a given mass of fluid about one or more axes at relatively low speeds, until the fluid has hardened by heating, cooling, or curing.

*noun*, engineering  
Szycher's Biomaterials

**rotator cuff**

musculotendinous structure encircling and giving strength to the shoulder joint.

*noun*, anatomy  
Dorland Medical

**rouge**

powdered iron oxide, used as a polish.

*noun*, engineering  
Heinemann Dental

**rounding**

auto-conversion of a cell culture from a monolayer into loosely attached or floating spherically shaped cells.

, biology  
ASTM

**rubber**

generic term for any elastomer, but also used specifically for natural rubber whose main sources is the tree, *hevea brasiliensis*.

*noun*, material science  
Larousse Science

**rubber dam** *dam*

thin sheet of rubber, pierced to fit over the teeth leaving their crowns exposed, used to exclude moisture from the field of operation during cavity preparation and other dental procedures.

*noun*, dentistry  
Heinemann Dental

**rubber dam clamp**

a metallic device used to retain a rubber dam on a tooth.

*noun*, dentistry  
Dorland Medical

**rubber elasticity**

elastic behaviour of polymers well above their glass transition temperature, where they exhibit high recovery at strains up to several hundred percent of original.

*noun*, polymer science  
Szycher's Biomaterials

**rubber toughening**

process by which materials can be toughened by copolymerisation with elastomeric polymers, such as polybutadiene and polyacrylate.

*noun*, polymer science  
Larousse Science

**rubidium Rb.**

element, at. no. 37, soft, silvery-white, alkali metal.

*noun*, chemistry  
Dorland Medical

**runner**

in injection moulding or casting, the feed channel that connects the sprue with the cavity gate.

*noun*, engineering  
Szycher's Biomaterials

**rupture**

1. tearing or disruption of tissue.

*noun*, medicine  
Dorland Medical

2. loss of structural integrity of a membrane, shell or hollow container.

*noun*, engineering

3. fracture of a structural component or test specimen.

*noun*, engineering  
Williams

**rust**

product of oxidation of iron or its alloys, due either to atmospheric attack or electrolytic effects.

*noun*, metallurgy  
Larousse Science

**rusting**

atmospheric corrosion of iron and steel.

*verb*, metallurgy  
Larousse Science

**ruthenium Ru.**

at. no. 44; a silvery-white, hard and brittle metallic element.

*noun*, chemistry  
Larousse Science

**rutile**

titanium dioxide which crystallises as reddish brown prismatic crystals in the tetragonal system.

*noun*, chemistry  
Larousse Science

**S phase**

period in the cell cycle during which the nuclear DNA content doubles.

*noun*, biology  
Larousse Science

**sac**

a pouch; a bag-like organ or structure.

*noun*, biology  
Dorland Medical

**saddle**

part of a partial denture which is supported by and in contact with the underlying alveolar tissue.

*noun*, dentistry  
Heinemann Dental

**safety**

1. practical certainty that a substance will not cause injury under carefully defined circumstances of use.

*noun*, general  
CEQ/OECD

2. descriptive of a substance, product, process or event which is highly unlikely to cause harm under carefully defined circumstances of use.

*noun*, general  
Williams

**sagittal**

1. shaped like an arrow.

*adjective*, anatomy

2. running anteroposteriorly.

*noun*, anatomy  
Heinemann Dental

**saline**

1. of the nature of a salt.

*adjective*, chemistry  
Dorland Medical

2. term used loosely to describe a solution based on isotonic sodium chloride.

*noun*, biology  
Heinemann Dental

**saliva**

watery secretion produced by the salivary glands, whose function is to lubricate the passage of food and, sometimes, to carry out part of its digestion.

*noun*, biology  
Larousse Science

**saliva ejector**

an apparatus used to suck saliva from the mouth during operative dentistry.

*noun*, dentistry  
Heinemann Dental

**salivary glands**

glands of the oral cavity whose combined secretion constitutes the saliva.

*noun*, anatomy  
Dorland Medical

Notes: There include the parotid, sublingual, and submandibular glands and numerous small glands in the tongue, lips, cheeks, and palate.

**sandblast**

method of cleaning metal or stone surfaces by sand, steel shot or grit blown from a nozzle at high velocity.

*noun*, engineering  
Larousse Science

**sangui-**

relating to blood.

*prefix*, general  
Dorland Medical

**saphenous**

pertaining to or associated with a saphena; applied to certain arteries, nerves, veins, etc.

*adjective, anatomy*  
Dorland Medical

**sapphire**

fine blue transparent variety of crystalline  
AlSUBSCRIPT3SUBSCRIPT2OSUBSCRIPT3.  
*noun, material science*  
Larousse Science

Notes: Has been used in single crystal form as a biomaterial.

**sarcoma**

any of a group of tumours usually arising from  
connective tissue, although the term now includes  
some of epithelial origin, mostly malignant.  
*noun, medicine*  
Dorland Medical

**sarcomere**

contractile unit of a myofibril.  
*noun, anatomy*  
Dorland Medical

**saturated**

1. denoting a chemical compound that has only  
single bonds and no double or triple bonds between  
atoms.  
*adjective, chemistry*
2. unable to hold in solution any more of a given  
substance.  
*adjective, chemistry*  
Dorland Medical

**saturated calomel electrode**

calomel electrode containing saturated potassium  
chloride solution  
*noun, chemistry*  
Larousse Science  
Notes: Used as a reference electrode in electrochemistry.

**saturation**

1. state in which all available valence bonds are  
attached to other atoms, particularly with  
reference to carbon atoms.  
*noun, chemistry*
2. state of a solution when it holds the maximum  
equilibrium quantity of dissolved matter at a given  
temperature.  
*noun, chemistry*  
Szycher's Biomaterials

**scaffolds**

1. protein core of histone-depleted metaphase  
chromosomes left after nuclease treatment.  
*noun, genetics*  
Larousse Science
2. in tissue engineering, the porous structure,  
usually polymeric, which serves as a substrate and  
guide for tissue regeneration.  
*noun, biomaterials science*  
Williams

**scaler**

hand instrument used for the removal of calculus  
and other deposits from the tooth surface.  
*noun, dentistry*  
Heinemann Dental

**scaling**

process of removal of calculus and other accretions  
from the surface of teeth.  
*noun, dentistry*

Heinemann Dental

**scalpel**

small surgical knife usually having a convex edge.  
*noun, surgery*  
Dorland Medical

**scanning electron microscope**

form of electron microscope in which a very fine  
beam of electrons at 5-1000kV is made to scan a  
chosen area of specimen as a raster of parallel  
contiguous lines, the secondary electronic  
emissions being collected to form a visual image.  
*noun, physics*  
Larousse Science

**scanning transmission electron microscope**

electron microscope which uses field emission from  
a very fine tungsten point as the source of  
electrons.  
*noun, physics*  
Larousse Science

**scanning tunnelling electron microscope STM.**

electron microscope which uses a probe with an  
atomic micro-tip floated, using superconducting  
levitation, over the surface being scanned.  
*noun, physics*  
Larousse Science

**scar**

end result of a repair process in skin and other  
organs.  
*noun, medicine*  
Biomedical Engineering Handbook

**scavenger**

any substance added to a system or mixture to  
consume, inactivate or chelate traces of unwanted  
material.  
*noun, chemistry*  
Szycher's Biomaterials

**schisto(o)-**

referring to a cleft or split.  
*adjective, general*  
Dorland Medical

**schizo-**

signifying division.  
*prefix, general*  
Heinemann Dental

**Schreger's lines**

series of bands in the enamel, visible, in a  
longitudinal section of a human tooth, by reflected  
light.  
*noun, dentistry*  
Heinemann Dental

**Schwann cell**

any of the large nucleated cells whose cell  
membrane spirally enwraps the axons of  
myelinated peripheral neurons.  
*noun, anatomy*  
Dorland Medical

**schwannoma**

neoplasm originating from Schwann cells (of the  
myelin sheath) of neurons.  
*noun, medicine*

Dorland Medical

**sciatica**

neuralgia along the course of the sciatic nerve.

*noun*, medicine

Dorland Medical

**scientific review group**

a group of highly regarded experts in a given field, convened by a body to advise on the scientific merit of applications for research grants and contracts.

*noun*, regulatory affairs

IRB Guidebook

Notes: Scientific review groups are also required to review the ethical aspects of proposed involvement of human subjects.

Various kinds of scientific review groups exist, and are known by different names in different institutes

**scintillation**

minute light flash caused when alpha, beta or gamma rays strike certain phosphors, known as scintillators.

*noun*, physics

Larousse Science

**scintillation camera**

device intended to image the distribution of radionuclides in the body by means of a photon radiation detector.

*noun*, physics

CFR

**sclera**

tough white outer coat of the eyeball, covering approximately the posterior five-sixths of its surface, continuously anteriorly with the cornea and posteriorly with the external sheath of the optic nerve.

*noun*, ophthalmology

Dorland Medical

**scleroderma**

systemic disease affecting the fibrous connective tissue and characterised by progressive hardening and thickening of patches of the skin and mucous membranes.

*noun*, medicine

Larousse Science

**sclerosis**

induration or hardening, especially from inflammation and in diseases of the interstitial substance.

*noun*, medicine

Dorland Medical

**scoliosis**

lateral curvature of the vertebral column.

*noun*, medicine

Dorland Medical

**scrapie**

one of the transmissible spongiform encephalopathies occurring in sheep and goats.

*noun*, biology

Dorland Medical

**screw post**

threaded post, which can be screwed into a prepared root canal, and by which a denture may be attached.

*noun*, dentistry

Heinemann Dental

**sebaceous**

pertaining to or secreting sebum.

*adjective*, anatomy

Dorland Medical

**sebaceous gland**

one of the glands that secrete sebum.

*noun*, anatomy

Heinemann Dental

**secant modulus**

elastic modulus derived from a non-linear stress-strain curve by taking the ratio of the stress to the strain at a particular point on the curve, which must be specified in terms of the level of stress or strain, e.g. '0-5% strain secant modulus'.

*noun*, physics

Larousse Science

**secondary dentine** (secondary dentin)

new deposit of dentine laid down as a result of normal or traumatic stimuli after the completed formation of the tooth.

*noun*, dentistry

Heinemann Dental

**secondary ion mass spectroscopy SIMS.**

surface analytical technique in which sputtering by primary ions leads to the ejection of some surface species as secondary ions.

*noun*, chemistry

Larousse Science

**secrete**

to elaborate and release a secretion.

*verb*, biology

Dorland Medical

**secretion**

cellular process of elaborating and releasing a specific product.

*noun*, biology

Dorland Medical

Notes: This activity may range from separating a specific substance of the blood to the elaboration of a new chemical substance. The word is also sometimes used as a noun to describe the substance secreted.

**secretory**

pertaining to secretion or affecting the secretions.

*adjective*, biology

Dorland Medical

**segmented polymers**

elastomers with a two-phase macromolecular structure, where hard segments separate to form discrete domains in a matrix of soft segments.

*noun*, polymer science

Szycher's Biomaterials

**segmented polyurethane**

family of polymers in which ester or ether groups, connected by hydrocarbon chains, occur as blocks that are coupled by urethane and urea groups.

*noun*, polymer science

ASTM

**selectivity**

degree to which a dose of a drug produces the

desired effect in relation to adverse effects.

*noun*, pharmacology

Dorland Medical

**selegiline**

anti-Parkinsonian agent used as the hydrochloride salt in conjunction with levodopa and carbidopa.

*noun*, pharmacology

Dorland Medical

**self assembled monolayer**

surface coating film that forms spontaneously as a highly ordered layer, essentially as a two-dimensional crystal, on a material substrate.

*noun*, material science

Williams

**self curing**

descriptive of an organic substance that can polymerise or cross-link under ambient conditions through the chemical activity of one of its constituents which is initiated on mixing the various components.

*adjective*, polymer science

Williams

**self-curing resin**

one that can be hardened without heat, using a chemical catalyst and an activator.

*noun*, polymer science

Heinemann Dental

**self-reinforced polyester SR-PGA.**

an aliphatic polyester, usually a polyglycolide or polylactide, that is prepared with oriented crystallites within an amorphous matrix.

*noun*, polymer science

Williams

**semi-constrained joint prosthesis**

partial or total joint replacement prosthesis that limits translation and rotation of the prosthesis in one or more planes via the geometry of its articulating surfaces, with no across-the-joint linkage.

*noun*, medical device technology

CFR

**semicrystalline polymer**

polymer that is only partially crystalline, usually in the range of 30-80%.

*noun*, polymer science

Szycher's Biomaterials

**semipermeable membrane**

membrane which permits the passage of solvent but is impermeable to dissolved substances.

*noun*, chemistry

Larousse Science

**senescence**

process of growing old, especially the condition resulting from the transitions and accumulations of the deleterious ageing processes.

*noun*, biology

Dorland Medical

**sense**

1. any of the physical processes by which stimuli are received, transduced, and conducted as impulses to be interpreted to the brain.

*noun*, biology

2. strand of nucleic acid that directly specifies the product.

*noun*, general

Dorland Medical

**sensitisation** (sensitization)

1. exposure to allergen that results in the development of hypersensitivity.

*noun*, medicine

Dorland Medical

(sensitization)

2. administration of an antigen to provoke an immune response so that, on later challenge, a more vigorous secondary response will ensue.

*noun*, immunology

Larousse Science

(sensitization)

3. process whereby a stainless steel becomes susceptible to intergranular corrosion as a result of carbide precipitation at grain boundaries.

*noun*, metallurgy

Williams

**sensitisation test** (sensitization test)

tests to estimate the potential for contact sensitisation of devices, materials and/or their extracts, using an appropriate model.

*noun*, biomaterials science

ISO

**sensitivity**

proportion of true positives that are detected by a system designed to discriminate between two categories, known conventionally as positive and negative.

*noun*, general

Larousse Science

**sensor**

1. general name for detecting device used to locate (or detect) presence of matter or energy.

*noun*, engineering

2. device which is able to detect a change in a physical quantity (e.g. light level) or an event (e.g. paper in printer) and produce an electrical signal capable of analysis.

*noun*, general

Larousse Science

**sepsis**

presence in the blood or other tissues of pathogenic micro-organisms or their toxins.

*noun*, medicine

Dorland Medical

**septic**

pertaining to sepsis.

*adjective*, medicine

Dorland Medical

**septic shock**

shock associated with overwhelming infection, most commonly infection with gram-negative bacteria, thought to result from the actions of endotoxins and other products of the infectious agent that cause sequestration of blood in the capillaries and veins.

*noun*, medicine  
Dorland Medical

**septicemia** (septicemia)

systemic disease associated with the presence and persistence of pathogenic micro-organisms or their toxins in the blood.

*noun*, medicine  
Dorland Medical

**septum**

dividing wall or partition.

*noun*, anatomy  
Dorland Medical

**sequence**

1. connected series of events or things.

*noun*, general

2. DNA having a particular nucleotide pattern or occurring in a particular region of the genome.

*noun*, general

3. pattern of multiple anomalies derived from a single prior anomaly or mechanical factor.

*noun*, general  
Dorland Medical

**sequencing**

biochemical procedure for determining the sequence of a nucleic acid or protein.

*noun*, biology  
Larousse Science

**sequestration**

1. isolation of a patient.

*noun*, medicine

2. net increase in the quantity of blood within a limited vascular area, occurring physiologically, with forward flow persisting or not, or produced artificially by the application of tourniquets.

*noun*, medicine

3. formation of a sequestrum.

*noun*, medicine  
Dorland Medical

**sequestrum**

a piece of necrotic bone that has become detached from the sound bone.

*noun*, medicine  
Heinemann Dental

**serial section**

one of a series of slices of tissue derived sequentially from the action of a microtome on a tissue block.

*noun*, biology  
Williams

**serine Ser, short form S.**

3-hydroxy-2-aminopropanoic acid.

$\text{HOCH}_2\text{CH}(\text{NH}_2)\text{COOH}$ .

A polar amino acid.

*noun*, chemistry  
Larousse Science

**serious injury**

an injury or illness that is life-threatening, results in permanent impairment of a body function or permanent damage to body structures; or necessitates medical or surgical intervention to preclude permanent impairment of a body function

or permanent damage to a body structure.

*noun*, regulatory affairs  
CFR

**serodiagnosis**

diagnosis of disease based on serologic tests.

*noun*, medicine  
Dorland Medical

**serology**

study of antigen-antibody reactions *in vitro*.

*noun*, immunology  
Dorland Medical

**seroma**

tumour-like collection of serum in the tissues.

*noun*, medicine  
Dorland Medical

**serotonin**

hormone and neurotransmitter, 5-hydroxytryptamine (5HT), found in many tissues, including blood platelets, intestinal mucosa, the pineal body, and the central nervous system.

*noun*, biology  
Dorland Medical

**serum**

1. watery fluid which separates from blood or lymph in coagulation.

*noun*, biology

2. blood serum containing antibodies, taken from an animal that has been inoculated with bacteria or their toxins, used to immunise people or animals.

*noun*, medicine  
Larousse Science

**serum albumin**

globular protein obtained from blood and body fluids, having a transport and osmo-regulatory function.

*noun*, biology  
Larousse Science

**set**

percentage residual deformation left in a material, especially viscoelastic polymers, after deformation for a given time.

*noun*, engineering  
Larousse Science

**setting reaction**

any chemical reaction that causes a substance to transform from a fluid state to the solid state.

*noun*, chemistry  
Williams

**setting time**

time after commencement of mixing at which the temperature of the curing mass equals the average of the maximum and ambient temperatures.

*noun*, polymer science  
ASTM

**sewing ring**

the piece of textile material that is attached to the annulus of a prosthetic heart valve for the purposes of facilitating attachment of the valve to the heart muscle.

*noun*, medical device technology

Williams

**shape memory alloy**

alloys which undergo a reversible solid-state transformation that involves a dimensional change, occurring usually over a narrow temperature range which enables a shape produced in one state to be recovered if the temperature is altered back again despite the shape having changed in the interim.

*noun*, metallurgy  
Larousse Science

**Sharpey's fibres** (Sharpey's fibers)

those parts of the collagen fibres of the periodontal ligament which are embedded in the alveolar bone or in the cementum of the tooth.

*noun*, dentistry  
Heinemann Dental

**shear**

1. type of deformation in which parallel planes in a body remain parallel but are relatively displaced in a direction parallel to themselves with a tendency for adjacent planes to slide over each other.

*noun*, material science  
Larousse Science

2. the relative parallel motion between adjacent fluid planes during flow.

*noun*, physics  
Biomedical Engineering Handbook

**shear modulus** *modulus of rigidity*

ratio of shear stress to shear strain within the proportional limit of a material.

*noun*, engineering  
Szycher's Biomaterials

**shear rate**

rate at which the velocity of a fluid under shear changes through its thickness.

*noun*, physics  
Larousse Science

**shear strain**

angular displacement of adjacent parallel planes in a body subject to shear.

*noun*, engineering  
Larousse Science

**shear strength**

*noun*, material science  
Notes: NEED DEF.

**shear stress**

1. shearing force divided by the area over which it is acting.

*noun*, material science  
Larousse Science

2. measure of the force required to produce a certain rate of flow of a viscous liquid proportional to the product of shear rate and blood viscosity.

*noun*, physics  
Biomedical Engineering Handbook

**shear thickening**

non-Newtonian flow behaviour in which the apparent viscosity increases upon application of shear forces.

*noun*, physics  
Szycher's Biomaterials

**shear thinning**

non-Newtonian flow behaviour in which the apparent viscosity decreases upon application of shear forces.

*noun*, physics  
Szycher's Biomaterials

**sheath**

tubular case or envelope.

*noun*, anatomy  
Dorland Medical

**sheeting**

form of plastic in which the thickness is very small in proportion to length and width and in which the plastic is present as a continuous phase throughout, with or without filler.

*noun*, engineering  
ASTM

**shelf life**

maximum time a device will remain functional from the date of manufacture until it is used in patient care.

*noun*, regulatory affairs  
CFR

**shell**

outer sac of an implantable breast prosthesis.

*noun*, medical device technology  
ASTM

**shell crown**

crown consisting of a metal shell, contoured to fit over the crown of an existing natural tooth.

*noun*, dentistry  
Heinemann Dental

**Shore hardness**

*noun*, engineering  
Notes: NEED DEF.

**Shore scleroscope**

instrument for determining a hardness value for materials by measuring the rebound of a diamond-tipped hammer dropped from a given height.

*noun*, engineering  
Larousse Science

**short term**

normally intended for continuous use for not more than 30 days.

*noun*, regulatory affairs  
EU Directive

**shoulder**

junction of clavicle and scapula, where the arm joins the trunk.

*noun*, anatomy  
Dorland Medical

**shrinkage porosity**

cavities produced within a solidified mass of an ingot or casting, due to specific volume contraction on solidification.

*noun*, engineering  
Larousse Science

**shunt**

1. passage or anastomosis between two natural channels, especially between blood vessels, formed

physiologically or anomalously.

*noun*, anatomy  
Dorland Medical

**sialic acid**

acylated derivative of a 9-carbon amino sugar which occurs in glycoproteins and glycolipids and is responsible, via its carboxyl groups, for most of the negative charge of animal cell surfaces.

*noun*, biology  
Larousse Science

**sialon**

hard, tough ceramic based on B-silicon nitride,  $\text{Si}_6\text{N}_8\text{O}_s$ , in which a proportion of the Si is replaced by Al and a proportion of the N by O, to give a range of compositions,  $\text{Si}_{(6-x)}\text{Al}_x\text{N}_{(8-z)}\text{O}_z$ .

*noun*, material science  
Larousse Science

**siccus**

dry.  
*noun*, biology  
Dorland Medical

**side group**

any chemical group that is attached to the molecular backbone of a polymer.

*noun*, polymer science  
Williams

**sider(o)-**

denoting iron.  
*prefix*, general  
Dorland Medical

**sigmoidoscope**

device used to provide access, illumination, observation and manipulation of the rectum or colon.

*noun*, medical device technology  
Szycher's Biomaterials

**sigmoidostomy**

surgical formation of an opening (artificial anus) in the sigmoid flexure of the colon.

*noun*, surgery  
Larousse Science

**sign**

any objective evidence of disease or bodily disorder.

*noun*, clinical practice  
Larousse Science

**significant change**

change that could reasonably be expected to affect the safety or effectiveness of a medical device.

*noun*, regulatory affairs  
Canadian Medical Devices

**significant risk device SR.**

an investigational medical device that presents a potential for serious risk to the health, safety, or welfare of the subject.

*noun*, regulatory affairs  
IRB Guidebook

**silane**

a term given to the silicon hydrides.

*noun*, chemistry  
Larousse Science

**silane coupling agent**

gaseous or liquid compound of silicon and hydrogen ( $\text{Si}_n\text{H}_{2n+2}$ ), analogous to alkane or saturated hydrocarbon. Used to assist in adhesion.

*noun*, polymer science  
Szycher's Biomaterials

**Silastic**

trade name for a range of silicone rubbers.

*noun*, polymer science  
Larousse Science

**silica silicon dioxide**

dioxide of silicon,  $\text{SiO}_2$ , occurring in crystalline forms (quartz, cristobalite, tridymite) and in amorphous form.

*noun*, chemistry  
Larousse Science

**silica gel**

hard amorphous granular form of hydrated silica, chemically inert but very hygroscopic.

*noun*, chemistry  
Larousse Science

**silicates**

largest group of minerals, of widely different, and some cases, extremely complex composition, but all composed of silicon, oxygen and one or more metals, with or without hydrogen.

*noun*, chemistry  
Larousse Science

**silicic acid**

acid formed when alkaline silicates are treated with acids.

*noun*, chemistry  
Larousse Science

**silicon Si.**

at. no. 14, a relatively inert element.

*noun*, chemistry  
Larousse Science

**silicon carbide SiC.**

very hard substance formed by fusing a mixture of carbon and sand or silica in an electric arc furnace.

*noun*, material science  
Larousse Science

**silicon dioxide silica**

oxide of silicon ( $\text{SiO}_2$ ).

*noun*, chemistry  
Larousse Science

**silicon nitride**

hard engineering ceramic used for cutting tools and in wear-resistant and high-temperature applications.

*noun*, engineering  
Larousse Science

**silicone**

any open-chain and cyclic organosilicon compound containing  $\text{-Si-O-}$  groups.

*noun*, chemistry  
Larousse Science

1. any organic compound in which all or part of the carbon has been replaced by silicon.

*noun*, polymer science  
Dorland Medical

**silicone antifoam**

polydimethylsiloxane fluid compounded with high surface area silica, available as compound and emulsion.

*noun*, polymer science  
Szycher's Biomaterials

**silicone elastomer**

1. elastomer containing cross-linked silicone polymer and filler, typically fumed silica.

*noun*, polymer science

2. reinforced polysiloxane containing ternary links between siloxane chains, having rubber-like properties.

*noun*, polymer science  
ASTM

**silicone fluid** *silicone oil*

any fluid version of a silicone polymer.

*noun*, chemistry  
Williams

**silicone foam**

foam based on fluid silicone resin.

*noun*, chemistry  
Szycher's Biomaterials

**silicone gel**

any gelatinous version of a silicone polymer.

*noun*, chemistry  
Williams

non-reinforced polysiloxane containing ternary links between siloxane chains having visco-elastic properties.

*noun*, chemistry  
ASTM

**silicone gel-filled breast implant** *silicone gel-filled breast prosthesis* **SBI**.

an implantable medical device intended to replace or augment breast tissue that is constructed of an elastomeric shell that contains silicone gel.

*noun*, medical device technology  
Williams

**silicone gel-filled breast prosthesis** *silicone gel-filled breast implant*

4. an implantable medical device intended to replace or augment breast tissue that is constructed of an elastomeric shell that contains silicone gel.

*noun*, medical device technology  
Williams

**silicone gel-filled breast prosthesis, double lumen**

silicone rubber inner shell and a silicone rubber outer shell, both shells made of polysiloxane(s), such as polydimethylsiloxane and polydiphenylsiloxane, the inner shell contains fixed amounts of cross-linked polymerised silicone gel, fillers, and stabilisers, the outer shell being inflated to the desired size with sterile isotonic saline before or after implantation, the device being intended to be implanted to augment or

reconstruct the female breast.

*noun*, medical device technology  
CFR

**silicone gel-filled breast prosthesis, single lumen**

a silicone rubber shell made of polysiloxane(s), such as polydimethylsiloxane and polydiphenylsiloxane, which either contains a fixed amount cross-linked polymerised silicone gel, filler, and stabilisers or is filled to the desired size with injectable silicone gel at time of implantation intended to be implanted to augment or reconstruct the female breast.

*noun*, medical device technology  
CFR

**silicone inflatable breast prosthesis**

silicone rubber shell made of polysiloxane(s), such as polydimethylsiloxane and polydiphenylsiloxane, that is inflated to the desired size with sterile isotonic saline before or after implantation, intended to be implanted to augment or reconstruct the female breast.

*noun*, medical device technology  
CFR

**silicone oil** *silicone fluid*

any fluid version of a silicone polymer.

*noun*, chemistry  
Williams

**silicone polycarbonate copolymer**

any thermoplastic copolymer of silicone and polycarbonate.

*noun*, polymer science  
Szycher's Biomaterials

Notes: Structures varying from strong elastomers to rigid engineering plastics depending on composition.

**silicone polymer**

polymer chains with chemical structure of repeating diorganosiloxy groups, typically repeating dimethylsiloxy groups, in elastomer form.

*noun*, polymer science  
ASTM

**silicosis**

pneumoconiosis due to the inhalation of particles of silica, seen in masons and miners who work in the presence of silica.

*noun*, medicine  
Larousse Science

**silk**

protein fibre obtained in long continuous fine strands from the cocoon of silkworms, especially of the moth *Bombyx mori*.

*noun*, polymer science  
Larousse Science

**silver Ag.**

at. no. 47, malleable, ductile metal.

*noun*, chemistry  
Larousse Science

**silver amalgam**

type of dental amalgam which contains a high proportion of silver.

*noun*, dentistry

Heinemann Dental

**simulated body fluid**

fluid that has been prepared such that it resembles, chemically, the approximate composition of a body fluid, usually the extracellular fluid that comes into chronic contact with an implanted biomaterial.

*noun*, biomaterials science  
Williams

**simulated-use extraction**

extraction to demonstrate compliance with the requirements of a specified standard by evaluating residue levels available to the patient or user from devices following the routine use of a device using an extraction method that simulates product use.

*noun*, biomaterials science  
ISO

Notes: The burden of validation on the analytical laboratory is to demonstrate that the simulated-use extraction is carried out under conditions that provide the greatest challenge to the intended use.

**sinew**

tendon of a muscle.

*noun*, anatomy  
Dorland Medical

**single crystal**

object that consists of one crystal, formed by propagation of unit cell in three dimensions, usually from a single nucleus.

*noun*, material science  
Larousse Science

**single fault condition**

condition in which a single means for protection against hazards is defective or a single external abnormal hazardous condition is present.

*noun*, regulatory affairs  
CEN

**single screw extruder**

extruder with one barrel in which a screw is rotated.

*noun*, engineering  
Szycher's Biomaterials

**single-blind design** *single-masked design*

study design in which the investigator, but not the subject, knows the identity of the treatment assignment.

*noun*, regulatory affairs  
IRB Guidebook

Notes: Occasionally the subject, but not the investigator, knows the assignment.

**single-masked design** *single-blind design*

study design in which the investigator, but not the subject, knows the identity of the treatment assignment.

*noun*, regulatory affairs  
IRB Guidebook

Notes: Occasionally the subject, but not the investigator, knows the assignment.

**sinister**

left; on the left side.

*adjective*, general  
Dorland Medical

**sinoatrial**

pertaining to the sinus, venous and the atrium of the heart.

*adjective*, anatomy  
Dorland Medical

**sinoatrial node SAN.**

neuromuscular tissue in the right atrium near where the superior vena cava joins the posterior right atrium (the sinus venarum).

*noun*, biology  
Biomedical Engineering Handbook

Notes: The SA node generates electrical impulses that initiate the heartbeat.

**sinter**

to coalesce into a single mass under the influence of heat, without actually liquefying.

*verb*, material science  
Larousse Science

**sintering**

process in which particles of a substance are compressed, usually at elevated temperature, to form a solid object.

*noun*, material science  
Williams

**sinuous**

bending in and out; winding.

*adjective*, anatomy  
Dorland Medical

**sinus**

1. recess, cavity, or channel, as in bone or a dilated channel for venous blood.

*noun*, anatomy

2. abnormal channel or fistula permitting escape of pus.

*noun*, medicine  
Dorland Medical

**-sis**

signifying state or condition.

*suffix*, medicine  
Williams

**sister chromatid exchange SCE.**

reciprocal exchange of DNA between the chromatids of a single chromosome.

*noun*, genetics  
Larousse Science

Notes: The detection of the extent of sister chromatid exchange is used as a measure of mutagenicity.

**site visit**

visit by agency officials, representatives, or consultants to the location of a research activity to assess the adequacy of IRB protection of human subjects or the capability of personnel to conduct the research.

*noun*, regulatory affairs  
IRB Guidebook

**sizing**

process of applying a material on a substrate in order to fill pores and thus reduce adsorption of adhesives, water or polymers.

*noun*, engineering  
Szycher's Biomaterials

**Sjogren's syndrome**

association of dryness of the mouth (xerostomia) and dryness of the eye (kerato conjunctivitis sicca) with rheumatoid arthritis.

*noun*, medicine  
Black's Medical

**skeletal muscle**

any muscle controlled by the motor centres in the brain.

*noun*, anatomy  
Larousse Science

**skin**

outer protective covering of the body, consisting of the corium (or dermis) and the epidermis.

*noun*, anatomy  
Dorland Medical

**skin flap**

full-thickness mass or flap of tissue containing epidermis, dermis, and subcutaneous tissue.

*noun*, surgery  
Dorland Medical

**skin graft**

piece of skin that has been transposed from a donor site to a site of trauma in the same person.

*noun*, surgery  
Williams

**skin irritation test**

any test in which substances are injected into or applied to the skin in order to observe the host's response to them.

*noun*, biomaterials science  
Larousse Science

**skin staple**

staple-like device intended to connect external tissues temporarily to aid healing.

*noun*, medical device technology  
CFR

**skull**

the cranium.

*noun*, anatomy  
Dorland Medical

**slip**

process involved in the plastic deformation of metal crystals in which the change in shape is produced by parts of the crystals sliding with respect to each other along certain crystallographic planes.

*noun*, material science  
Larousse Science

**slough**

necrotic tissue in the process of separating from viable portions of the body.

*noun*, medicine  
Dorland Medical

**slow release**

process by which a drug is released slowly and continuously over a period of time from a product.

*noun*, pharmacology  
Williams

**smart material**

metal, ceramic or polymer which respond to an

external stimulus in a specific, controlled way.

*noun*, material science  
Larousse Science

**smear**

specimen for microscopic study prepared by spreading the material across the slide.

*noun*, biology  
Dorland Medical

**smooth muscle**

non-striated involuntary muscle.

*noun*, anatomy  
Dorland Medical

**snap-frozen**

tissue sample that has been excised from a living host and immediately frozen for purposes of preservation and subsequent histological analysis.

*adjective*, biology  
Williams

**sodium Na.**

metallic element, one of the alkali metals; at. no. 11.

*noun*, chemistry  
Larousse Science

**sodium chloride NaCl.**

white crystalline salt, soluble in water.

*noun*, chemistry  
Larousse Science

**sodium dodecyl sulphate (sodium dodecyl sulfate) SDS.**

anionic detergent widely used as a powerful denaturant and solubilising agent.

*noun*, biology  
Larousse Science

**sodium hydroxide NaOH.**

deliquescent substance, whose solution in water is strongly alkaline.

*noun*, chemistry  
Larousse Science

**soft contact lens**

device intended to be worn directly against the cornea and adjacent limbal and scleral areas of the eye to correct vision conditions or act as a therapeutic bandage, made of various polymers which absorb or attract a certain volume of water.

*noun*, ophthalmology  
CFR

**soft lens**

contact lens made from a flexible polymeric material.

*noun*, ophthalmology  
Williams

Notes: Typically made from a silicone elastomer or a hydrogel such as polyhydroxyethylmethacrylate.

**soft palate**

fleshy rear portion of the roof of the mouth.

*noun*, dentistry  
Heinemann Dental

**soft segment**

blocks in a block copolymer thermoplastic elastomer which have a TSUBSCRIPT<sub>2</sub> and

TSUBSCRIPT<sub>m</sub> well below room temperature, so they retain molecular flexibility and elasticity at room temperature.  
*noun*, polymer science  
Szycher's Biomaterials

**soft tissue**

general term used to describe any non-mineralised tissue.  
*noun*, anatomy  
Williams

**sol**

liquid colloidal solution.  
*noun*, chemistry  
Dorland Medical

**sol-gel processing**

chemical route to glass formation, using reactions in solution to produce a gel precursor, which yields the glass on drying-out, thus avoiding the melting stage.  
*noun*, material science  
Larousse Science

**solder**

general term for alloys, frequently of eutectic composition, used for joining metals together.  
*noun*, engineering  
Larousse Science

**soldering**

hot joining of metals by adhesion using, as a thin film between the parts to be joined, a metallic bonding alloy having a relatively low melting point.  
*noun*, engineering  
Larousse Science

**solid**

state of matter in which the constituent molecules or ions possess no translational motion, but can only vibrate about fixed mean positions.  
*noun*, chemistry  
Larousse Science

**solid solution**

arrangement of atoms or molecules of different species within the same crystal lattice.  
*noun*, material science  
Larousse Science

**solid state carcinogenesis** *Oppenheimer effect*

production of tumours in experimental animals associated with the presence of an implanted material, such tumours being associated with the physical presence of the material rather than its chemistry.  
*noun*, medical device technology  
Williams

**solidus**

line on a phase diagram representing temperatures above which mixtures begin to melt and below which mixtures are completely solid under equilibrium conditions.  
*noun*, chemistry  
Larousse Science

**solubility**

quality of being soluble.  
*noun*, chemistry

Dorland Medical

**solubility curve**

curve showing the variation of the solubility of a substance with temperature.  
*noun*, chemistry  
Larousse Science

**soluble**

susceptible to being dissolved.  
*adjective*, chemistry  
Dorland Medical

**solute**

substance dissolved in solvent to form a solution.  
*noun*, chemistry  
Dorland Medical

**solution**

homogeneous mixture of one or more substances (solutes) dispersed in a sufficient quantity of dissolving medium (solvent).  
*noun*, chemistry  
Dorland Medical

**solution cast**

relating to a polymer that has been generated in solid form as a result of casting a solution of the polymer in an appropriate solvent into a mould or onto a flat solid surface.  
*adjective*, polymer science  
Williams

**solution heat treatment**

process of heating suitable alloys in order to take the hardening constituent into solution followed by quenching, to retain the solid solution  
*noun*, metallurgy  
Larousse Science

**solution polymerisation** (solution polymerization)

polymerisation method in which the monomer or mixture of monomers is dissolved in a non-monomeric liquid solvent at the beginning of the process.  
*noun*, polymer science  
Szycher's Biomaterials

**solvent**

1. liquid that dissolves or is capable of dissolving another substance.  
*noun*, chemistry  
Dorland Medical

**solvent adhesive**

adhesive containing a volatile organic vehicle or rheological agent.  
*noun*, polymer science  
Szycher's Biomaterials

**solvent bonding**

process in which an organic liquid is used to soften fibres so that they adhere to each other and from a non-woven fabric.  
*noun*, polymer science  
Larousse Science

**solvent welding**

use of a good solvent or mixture of solvents to create a joint between similar or identical thermoplastics.

*noun*, engineering  
Larousse Science

**soma**

1. the body as distinguished from the mind.  
*noun*, biology
2. the cell.  
*noun*, biology  
Dorland Medical

**somat(o)-**

signifying body.  
*prefix*, biology  
Dorland Medical

**somatic**

1. pertaining to or characteristic of the soma or body.  
*adjective*, biology
2. pertaining to the body wall in contrast to the viscera.  
*adjective*, anatomy  
Dorland Medical

**somatotrophin** *growth hormone*

a hormone, secreted by the mammalian pituitary gland, that stimulates protein synthesis and growth of the long bones in the legs and arms.  
*noun*, biology  
Dorland Medical

**Southern blot**

method of revealing rare DNA fragments in a complex mixture of DNA.  
*noun*, biology  
Larousse Science

**spasm**

sudden, violent, involuntary muscular contraction.  
*noun*, biology  
Dorland Medical

**spastic**

any condition showing increased muscle tone.  
*adjective*, medicine  
Black's Medical

**spatula**

wide, flat, blunt, usually flexible instrument of little thickness, used for spreading material on a smooth surface.  
*noun*, general  
Dorland Medical

**species**

taxonomic category subordinate to a genus (or subgenus) and superior to a subspecies or variety.  
*noun*, biology  
Dorland Medical

**species-specific**

having a characteristic effect on, or interaction with, cells or tissues of members of a particular species.  
*adjective*, biology  
Dorland Medical  
Notes: This usually refers to an antigen, drug, or infective agent.

**specific adhesion**

adhesion between two surfaces in which the

adhesive holds the parts together by covalent or ionic forces.

*noun*, material science  
Szycher's Biomaterials

**specification**

1. any requirement with which a product, process, service or other activity must conform.  
*noun*, regulatory affairs  
CFR
2. detailed description, including dimensions and other quantities of the function, construction, materials quality of a manufactured article.  
*noun*, engineering  
Larousse Science

**specificity**

extent to which a screening test gives false positives.  
*noun*, medicine  
Black's Medical

**spectacles**

pair of lenses in a frame to assist vision.  
*noun*, ophthalmology  
Dorland Medical

**spectrometry**

determination of the wavelengths or frequencies of the lines in a spectrum.  
*noun*, chemistry  
Dorland Medical

**spectrophotometer**

apparatus for determining the nature and quantity of matter in solution by characterisation of light transmitted through it at different wavelengths.  
*noun*, chemistry  
Dorland Medical

**spectroscopy**

practical side of the study of spectra, including the excitation of the spectrum, its visual or photographic observation, and the precise determination of wavelengths.  
*noun*, physics  
Larousse Science

**spectrum**

charted band of wavelengths of electro magnetic radiation obtained by refraction or diffraction.  
*noun*, physics  
Dorland Medical

**speculum**

instrument for opening or distending a body orifice or cavity to permit visual inspection.  
*noun*, medicine  
Dorland Medical

**speech therapist**

person specially trained and qualified to assist patients in overcoming speech and language disorders.  
*noun*, clinical practice  
Dorland Medical

**spermat(o)-**

of the male germinative element.  
*prefix*, biology  
Dorland Medical

**spermatogenesis**

process of the formation of spermatozoa.

*noun*, biology  
Dorland Medical

**spermatozoon**

mature male germ cell, which impregnates the ovum in sexual reproduction and contains the genetic information for the zygote from the male.

*noun*, embryology  
Dorland Medical

**spermicide**

agent destructive to spermatozoa.

*noun*, biology  
Dorland Medical

**spherulite**

round aggregate of radiating crystals with a fibrous appearance present in most crystalline polymers.

*noun*, polymer science  
Szycher's Biomaterials

**sphincter**

ring-like muscle which closes a natural orifice or passage.

*noun*, anatomy  
Dorland Medical

**sphygmomanometer**

instrument for measuring the arterial blood pressure, an inflatable bag being applied to the arm and pressure increased to occlude the artery.

*noun*, medicine  
Larousse Science

**spina**

thorn-like process or projection.

*noun*, anatomy  
Dorland Medical

**spina bifida**

developmental anomaly marked by defective closure of the bony encasement of the spinal cord, through which the meninges may or may not protrude.

*noun*, embryology  
Dorland Medical

**spinal cord**

that part of the central nervous system lodged in the vertebral canal, extending from the foramen magnum to the upper part of the lumbar region.

*noun*, anatomy  
Dorland Medical

**spinal cord stimulator**

implantable device that is used to stimulate electrically a patient's spinal cord to relieve severe intractable pain, consisting of an implanted receiver with electrodes that are placed on the patient's spinal cord and an external transmitter for transmitting the stimulating pulses across the patient's skin to the implanted receiver.

*noun*, medical device technology  
CFR

**spinal interlaminar fixation orthosis**

implantable medical device that consists of various hooks and a posteriorly placed compression or distraction rod that is placed, usually across three

adjacent vertebrae, to straighten and immobilise the spine to allow bone grafts to unite and fuse the vertebrae together, primarily in the treatment of scoliosis but also in the treatment of fracture or dislocation of the spine.

*noun*, medical device technology  
CFR

**spinal puncture lumbar puncture**

withdrawal of fluid from the subarachnoid space in the lumbar region, usually between the third and fourth lumbar vertebrae.

*noun*, medicine  
Dorland Medical

**spindle**

1. rod-like structure, tapered at both ends.

*noun*, anatomy  
Heinemann Dental

2. fusiform figure occurring during metaphase of cell division, composed of microtubules radiating from the centrioles and connecting to the chromosomes at their centromeres.

*noun*, genetics  
Dorland Medical

**spindle cell carcinoma**

variant of squamous cell carcinoma, frequently mistaken for sarcoma or carcinosarcoma because of its spindle shaped tumour cells.

*noun*, medicine  
Heinemann Dental

**spine**

1. vertebral column.

*noun*, anatomy

2. slender, thorn-like process of bone.

*noun*, anatomy  
Dorland Medical

**spinneret**

extrusion machine fitted with a die containing multiple tiny openings, through which a plastic melt or solution is forced to produce fine fibres and filaments.

*noun*, polymer science  
Szycher's Biomaterials

**spiro polymer**

chain molecule comprising cyclic structures linked together at their apices.

*noun*, chemistry  
Larousse Science

**spirochete**

spiral bacterium.

*noun*, biology  
Dorland Medical

**spleen**

large, gland-like organ situated in the upper left part of the abdominal cavity, lateral to the cardiac end of the stomach.

*noun*, anatomy  
Dorland Medical

**splicing**

attachment of individual DNA molecules to each other, as in the production of chimeric genes.

*noun*, genetics

Dorland Medical

**splint**

rigid or flexible appliance for fixation of displaced or movable parts.

*noun*, medicine

Dorland Medical

**spondylitis**

inflammation of vertebrae.

*noun*, medicine

Dorland Medical

**spongiform encephalopathy**

any of a group of fatal diseases that have a long incubation period and produce spongiform degeneration of the grey matter of the cortex.

*noun*, medicine

Larousse Science

**spongiosa**

spongy substance of bone.

*noun*, anatomy

Dorland Medical

**spongy bone**

inner, spongy material found within the compact bone, made up of a latticework of bone trabeculae with inter-communicating spaces filled by bone marrow and linked to the central marrow of the bone.

*noun*, anatomy

Heinemann Dental

**sponsor**

a person or entity that initiates a clinical investigation of a drug or device- usually the drug or device manufacturer or research institution that developed the product.

*noun*, regulatory affairs

IRB Guidebook

Notes: The sponsor does not actually conduct the investigation, but rather distributes the new product to investigators and physicians for clinical trials. It is administered to subjects under the immediate direction of an investigator who is not also a sponsor. A clinical investigator may, however, serve as a sponsor-investigator. The sponsor assumes responsibility for investigating the new product, including responsibility for compliance with applicable laws and regulations.

**spore**

refractile, oval body formed within bacteria, which is regarded as a resting stage during the life history of the cell.

*noun*, biology

Dorland Medical

**spot welding**

process of welding in which metal sheets or wires are pressed together between two electrodes and a pulse of heavy current passed.

*noun*, engineering

Larousse Science

**sprain**

joint injury in which some of the fibres of a supporting ligament are ruptured but the continuity of the ligament remains intact.

*noun*, medicine

Dorland Medical

**spray coating**

application of a coating to a substrate by means of a spray gun.

*noun*, engineering

Szycher's Biomaterials

**spray drying**

rapid drying of a solution or suspension by spraying into a flow of hot gas, the resultant powder being separated by a cyclone.

*noun*, engineering

Larousse Science

**sprue**

in injection or transfer moulding or casting, the main feeding channel that connects the mould filling orifice with the runners leading to each cavity.

*noun*, engineering

Szycher's Biomaterials

**sputum**

matter ejected from the trachea, bronchi, and lungs, through the mouth.

*noun*, medicine

Dorland Medical

**squama**

scale or thin, plate-like structure.

*noun*, biology

Dorland Medical

**squamous**

scaly or plate-like.

*adjective*, biology

Dorland Medical

**squamous cell**

flat, scale-like epithelial cell.

*noun*, anatomy

Dorland Medical

**squamous cell carcinoma**

carcinoma developing from the squamous epithelium.

*noun*, medicine

Heinemann Dental

**stabiliser (stabilizer)**

substance added to a plastic that will retard the deterioration of the plastic due to the effects of heat, light, or oxidation.

*noun*, physics

ASTM

**stability**

1. ability of an ecosystem to resist change.

*noun*, biology

Larousse Science

2. ability of a substance or material to resist chemical change.

*noun*, material science

Williams

**stain**

1. substance used to impart colour to tissue or cells, to facilitate microscopic study and identification.

*noun*, biology

2. area of discoloration of the skin.

*noun*, medicine

Dorland Medical

**stainless steel**

corrosion resistant steels of a wide variety of compositions, but always containing a high percentage of chromium >12% since the stainless property derives from chromium oxide film on the surface.

*noun*, metallurgy

Larousse Science

Notes: Used in the construction of medical devices. In particular, the 316L grade of stainless steel, with approximately 18% Cr, 12% Ni, 3% Mo and <0.03% C is used for implantable device.

**standard**

1. established unit of measurement, or reference instrument or component, suitable for use in calibration of other instruments.

*noun*, general

Larousse Science

2. document that has been developed and established within consensus principles and meets the approval requirements of procedures and regulations.

*noun*, regulatory affairs

ASTM

3. prescribed set of rules, conditions, or requirements concerned with the definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, design, or operations; measurement of quality and quantity in describing materials, products, systems, services, or practices; or descriptions of fit and measurement of size.

*noun*, regulatory affairs

FDA

**standard classification**

systematic arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use.

*noun*, regulatory affairs

ASTM

**standard practice**

definitive procedure for performing one or more specific operations or functions that does not produce a test result.

*noun*, regulatory affairs

ASTM

**standard specification**

precise statement of a set of requirements to be satisfied by a material, product, system, or service that also indicates the procedures for determining whether each of the requirements is satisfied.

*noun*, regulatory affairs

ASTM

**standard test**

any experimental procedure intended to provide data according to an agreed protocol.

*noun*, engineering

Williams

**standard test method**

definitive procedure for the identification, measurement, and evaluation of qualities, characteristics, or properties of a material, product, system, or service that produces a test result.

*noun*, regulatory affairs

ASTM

**stapedectomy**

excision of the stapes.

*noun*, surgery

Dorland Medical

**stapes**

the innermost of the small bones in the middle ear.

*noun*, anatomy

Black's Medical

**staphyl(o)-**

resembling a bunch of grapes.

*prefix*, general

Dorland Medical

**Staphylococcus**

genus of gram-positive bacteria that are potential pathogens, causing local lesions and serious opportunistic infections.

*noun*, biology

Dorland Medical

**staphylococcus albus**

type of Gram-positive coccus associated with various acute inflammatory and suppurative conditions which forms white colonies.

*noun*, biology

Larousse Science

**staphylococcus aureus**

type of Gram-positive coccus associated with various acute inflammatory and suppurative conditions which forms golden yellow colonies.

*noun*, biology

Larousse Science

**starch**

any of a group of polysaccharides of the general formula  $(C_6H_{10}O_5)_n$

*noun*, chemistry

Dorland Medical

**stasis**

stoppage or diminution of flow, as of blood or other body fluid.

*noun*, medicine

Dorland Medical

**static fatigue**

phenomenon of a material failing at a smaller load than that required to cause short-term failure, after a period of constant loading by the smaller load.

*noun*, engineering

Larousse Science

**statistical significance**

determination of the probability of obtaining the particular distribution of the data on the assumption that the null hypothesis is true, i.e. the probability of coming to a false positive conclusion.

*noun*, statistics

IRB Guidebook

Notes: If the probability is less than or equal to a predetermined value (e.g., 0.05 or 0.01), then the null hypothesis is rejected at that significance level (0.05 or 0.01).

**stear(o)-**

indicating fat.  
*prefix*, biology  
Dorland Medical

**steel**

versatile group of engineering materials based on the iron-carbon system, which may contain up to 2% carbon although usually below 1% and accompanied by other elements in small amounts.  
*noun*, metallurgy  
Larousse Science

**stellate**

star-shaped; arranged in rosettes.  
*adjective*, general  
Dorland Medical

**Stellite**

trade name for a group of corrosion resistant cobalt-chromium alloys.  
*noun*, metallurgy  
Williams  
Notes: Widely used for implantable devices.

**stem**

1. supporting structure comparable to the stalk of a plant.  
*noun*, biology  
Dorland Medical  
2. part of a joint replacement prosthesis which is inserted into the medullary canal of a bone.  
*noun*, medical device technology  
Williams

**stem cell**

multi-potential cell from which differentiated cells derive.  
*noun*, biology  
Roitt Immunology

**stenosed**

narrowed; constricted.  
*adjective*, medicine  
Dorland Medical

**stenosis**

narrowing or contraction of a duct or canal.  
*noun*, medicine  
Dorland Medical

**stent**

1. device or mould of a suitable material, used to hold a skin graft in place or to support tubular structures that are being anastomosed.  
*noun*, surgery  
Dorland Medical

**stented valve**

any bioprosthetic or flexible leaflet heart valve that uses a stent, or frame, to support the leaflets.  
*noun*, medical device technology  
Williams

**stentless valve**

any bioprosthetic or flexible leaflet heart valve that does not use any support for the leaflets which are mounted directly on to the annulus or ring.  
*noun*, medical device technology  
Williams

**stereoisomerism**

isomerism in which the isomers have the same structure (same linkages between atoms) but different spatial arrangements of the atoms.  
*noun*, chemistry  
Dorland Medical

**stereoregular polymers**

polymers with chain configurations consisting of small, regularly oriented units.  
*noun*, polymer science  
Szycher's Biomaterials

**stereospecific**

implies a specific or definite order of molecular arrangement in space.  
*adjective*, chemistry  
Szycher's Biomaterials

**stereotactic**

characterised by precise positioning in space; said especially of discrete areas of the brain that control specific functions.  
*adjective*, biology  
Dorland Medical

**stereotaxis**

response or reaction of an organism to the stimulus of contact with a solid body.  
*noun*, biology  
Larousse Science

**steric**

pertaining to the arrangement of atoms in space.  
*adjective*, chemistry  
Dorland Medical

**sterilant**

agent that destroys micro-organisms.  
*noun*, biology  
Dorland Medical

**sterile**

1. aseptic; free from living micro-organisms.  
*adjective*, biology  
2. not fertile; barren; not producing young.  
*adjective*, biology  
Dorland Medical

**sterilisation (sterilization)**

1. complete elimination or destruction of all living micro-organisms on or within an object.  
*noun*, biology

(sterilization)

2. any procedure by which an individual is made incapable of reproduction.  
*noun*, medicine  
Dorland Medical

**steriliser (sterilizer)**

apparatus for the destruction of micro-organisms.  
*noun*, biology  
Dorland Medical

**sterility**

1. the inability to conceive or induce conception.  
*noun*, medicine  
2. absence of viable contaminating micro-organisms; aseptic state.  
*noun*, medicine  
IRB Guidebook

**steroid**

any of a group of polycyclic compounds having a 17-carbon-atom ring system as a nucleus.

*noun*, chemistry  
Dorland Medical

**stereotactic surgery**

a procedure, often guided by using X-rays, carried out at a precise localisation in a tissue using specialised equipment for location.

*noun*, statistics  
Larousse Science

**stethoscope**

device that mechanically or electrically amplifies sounds associated with the heart, arteries and veins.

*noun*, medical device technology  
Szycher's Medical Devices

**stiffness**

the ability to resist bending, or any type of elastic or viscoelastic deformation.

*noun*, engineering  
Larousse Science

**stimulation**

act or process of stimulating.

*noun*, general  
Dorland Medical

**stimulator**

any agent that excites functional activity.

*noun*, general  
Dorland Medical

**stimulus**

an aspect of an environment, internal or external to the individual, which produces some response.

*noun*, biology  
Larousse Science

**stitch**

suture.

*noun*, surgery  
Dorland Medical

**stoichiometry**

anything associated with the quantities of substances that enter and are produced during chemical reactions

*noun*, chemistry  
Szycher's Biomaterials

**Stoke St.**

unit of kinematic viscosity.

*noun*, physics  
Dorland Medical

**Stokes-Adams syndrome**

condition in which slowness of the pulse is associated with attacks of unconsciousness, and which is due to a state of heart block.

*noun*, medicine  
Black's Medical

**stoma**

mouth-like opening, particularly an incised opening which is kept open for drainage or other purpose.

*noun*, surgery

Dorland Medical

**stomach**

musculomembranous expansion of the alimentary canal between the oesophagus and duodenum.

*noun*, anatomy  
Dorland Medical

**stomat(o)-**

pertaining to the mouth.

*prefix*, biology  
Dorland Medical

**stomatitis**

generalised inflammation of the oral mucosa.

*noun*, dentistry  
Dorland Medical

**stone**

1. hard mineral concretion.

*noun*, medicine

2. rotary abrasive head, mounted for use in a handpiece and used for grinding and smoothing.

*noun*, dentistry

3. hard form of plaster of Paris, which sets like cement, and is used to make casts.

*noun*, dentistry  
Heinemann Dental

**strain**

1. to overexercise; to use to an extreme and harmful degree.

*verb*, medicine

2. group of organisms within a species or variety, characterised by some particular quality.

*noun*, biology

3. change in the size or shape of a body as the result of an externally applied force.

*noun*, engineering  
Dorland Medical

**strain ageing** (strain aging)

increase in strength and hardness of a metal that proceeds with time, after cold-working.

*noun*, metallurgy  
Larousse Science

**strain energy**

pure elastic energy stored in a strained body, resulting from the work done in deforming the body.

*noun*, engineering  
Szycher's Biomaterials

**strain gauge**

metal or semiconductor filament on a backing sheet by which it can be attached to a body to be subjected to strain, so that the filament is correspondingly strained.

*noun*, engineering  
Larousse Science

**streaming potential**

difference of electrical potential induced between the two ends of a capillary by forcing a liquid through it.

*noun*, physics  
Larousse Science

**strept(o)-**

twisted.

*prefix*, biology  
Dorland Medical

**streptococcus**

genus of gram-positive, facultatively anaerobic cocci occurring in pairs or chains.  
*noun*, biology  
Dorland Medical

**streptokinase**

protein produced by GERMAN B-haemolytic streptococci, which produces fibrinolysis by binding to plasminogen and causing its conversion to plasmin, used as a thrombolytic agent.  
*noun*, biology  
Dorland Medical

**streptomycin**

antibiotic produced by *Streptomyces griseus* that is effective against a wide variety of aerobic gram-negative bacilli and some gram-positive bacteria, including mycobacteria.  
*noun*, pharmacology  
Dorland Medical

**stress**

1. sum of the biological reactions to any adverse stimulus, physical, mental, or emotional, internal or external, that tends to disturb an organism's homeostasis.  
*noun*, biology  
Dorland Medical
2. the force producing or tending to produce deformation in a unit area of a substance.  
*noun*, engineering  
Szycher's Biomaterials

**stress concentration**

abrupt, local increase of otherwise uniform stress created by some geometric configuration at the surface or within the body of a component.  
*noun*, engineering  
Larousse Science

**stress corrosion** *stress corrosion cracking*

2. phenomenon in which mechanical stress and a chemical environment combine to produce cracking in a metal when either would not produce any effect when acting alone.  
*noun*, metallurgy  
Williams

**stress corrosion cracking** *stress corrosion*

phenomenon in which mechanical stress and a chemical environment combine to produce cracking in a metal when either would not produce any effect when acting alone.  
*noun*, metallurgy  
Williams

**stress crack**

external or internal crack in a plastic caused by tensile stresses less than the tensile strength.  
*noun*, engineering  
ASTM

**stress fracture**

fracture in a bone caused by repeated stress on a bone.  
*noun*, medicine

Dorland Medical

**stress incontinence**

involuntary escape of urine due to strain on the orifice of the bladder, as in coughing or sneezing.  
*noun*, medicine  
Dorland Medical

**stress intensity factor**

measure of the increase in stress which occurs at the tip of a loaded crack in a material  
*noun*, engineering  
Larousse Science

**stress relaxation**

decrease in stress with time in a viscoelastic material held at constant strain.  
*noun*, engineering  
Larousse Science

**stress relaxation modulus**

modulus obtained from a stress relaxation experiment, where sample is held at constant strain and the decaying stress recorded.  
*noun*, engineering  
Larousse Science

**stress relief annealing**

heating materials to a temperature (0.3  $T_{SUBSCRIPTm}$ ) below that liable to alter the crystalline structure and with the object of reducing or eliminating any harmful residual stresses arising from other processes.  
*noun*, engineering  
Larousse Science

**stress rupture**

sudden, complete failure of a material held under a definite load for a given period of time at a specific temperature.  
*noun*, engineering  
Szycher's Biomaterials

**stress strain curve**

curve derived from the load-extension behaviour of a test specimen, where the load is divided by the original cross-sectional area of the test piece and expressed in units of stress, plotted vertically, while the extension is divided by the length over which it is measured and expressed as a ratio, and plotted horizontally.  
*noun*, engineering  
Larousse Science

**stress transfer**

process by which mechanical stress is transferred from one component to another.  
*noun*, engineering  
Williams

**stress whitening**

local appearance of white regions in a polymer while it is being stressed, due to crystallisation with corresponding changes in the refractive index in the stressed regions.  
*noun*, polymer science  
Szycher's Biomaterials

**stretch forming**

process for forming large sheets of thin metal into symmetrical shapes by gripping the sheet edges in

horizontally sliding stretcher jaws and moving a forming punch, without a die, vertically between them against the sheet.  
*noun*, engineering  
Larousse Science

**stria**

1. narrow band-like structure.  
*noun*, anatomy  
2. longitudinal collection of nerve fibres in the brain.  
*noun*, anatomy  
Dorland Medical

**striated**

having stripes or striae.  
*adjective*, anatomy  
Dorland Medical

**striated muscle**

any muscle whose fibres are divided by transverse bands into striation  
*noun*, anatomy  
Dorland Medical  
Notes: Such muscles are voluntary.

**striation**

the appearance of faint ridges or furrows.  
*noun*, general  
Larousse Science

**stroke**

a sudden and severe attack.  
*noun*, medicine  
Dorland Medical

**stroma**

supporting tissue or matrix of an organ.  
*noun*, anatomy  
Dorland Medical

**strontium Sr.**

element, at. no. 38.  
*noun*, chemistry  
Dorland Medical

**structure**

general term to describe the type of atoms and molecules in a substance and their arrangement.  
*noun*, chemistry  
Williams

**strut**

1. any light structural member or long column which sustains an axial compressive load.  
*noun*, engineering  
Larousse Science  
2. structural component of a mechanical heart valve which constrains the movement of the occl??  
*noun*, medical device technology  
Williams  
Notes: NEED TO CHECK DEF.

**Stuart factor**

factor of both intrinsic and extrinsic clotting pathway.  
*noun*, medicine  
Dorland Medical

**student's t-test**

sampling distribution of the mean of a set of

observations from a normal distribution with unknown variance.  
*noun*, statistics  
Larousse Science

**styptic**

astringent and haemostatic agent.  
*noun*, medicine  
Dorland Medical

**styrene**

colourless aromatic liquid, widely used in polyester thermoset resins.  
*noun*, chemistry  
Larousse Science

**styrene acrylonitrile copolymer SAN.**

copolymer of 70% styrene and 30% acrylonitrile, with higher rigidity, tensile strength chemical and impact resistance than straight polystyrene.  
*noun*, polymer science  
Szycher's Biomaterials

**styrene butadiene rubber SBR.**

group of synthetic rubbers comprising about three parts of butadiene copolymerised with one part of styrene.  
*noun*, polymer science  
Szycher's Biomaterials

**sub-acute sub-chronic**

between acute and chronic.  
*noun*, medicine  
Dorland Medical

**sub-acute toxicity test sub-chronic toxicity test**

test to determine the effects of either single or multiple exposures or contact to devices, materials and/or their extracts during a period of not less than 24 hours to a period not greater than 10% of the total life-span of the test animal (e.g., up to 90 days in rats).  
*noun*, biomaterials science  
ISO

Notes: This definition is different from the ISO definition of sub-acute toxicity. The range of 14-28 days given in that definition is more appropriate.

**sub-chronic sub-acute**

between acute and chronic.  
*noun*, medicine  
Dorland Medical

**sub-chronic toxicity test sub-acute toxicity test**

test to determine the effects of either single or multiple exposures or contact to devices, materials and/or their extracts during a period of not less than 24 hours to a period not greater than 10% of the total life-span of the test animal (e.g., up to 90 days in rats).  
*noun*, biomaterials science  
ISO

Notes: These tests may be waived for materials with chronic toxicity data. the reason for waiving of the tests should be included in the final report. These tests should be appropriate for the route and duration of contact.

**sub-surface damage**

structural change to a material, such as cracking, that occurs just below the surface and is not visually obvious from the surface.  
*noun*, engineering

Williams

**subacute toxicity**

adverse effects occurring after administration of a single dose or multiple doses of a test sample per day given during a period of from 14 days to 28 days.

*noun*, biomaterials science

ISO

Notes: This definition is different from the ISO definition of sub-acute toxicity test. The range of 14-28 days given in this definition is more appropriate.

**subarachnoid**

between the arachnoid and the pia mater.

*noun*, anatomy

Dorland Medical

**subclavian**

the large artery and vein which pass to the upper arm between the collar bone and the first rib.

*adjective*, anatomy

Black's Medical

**subclinical**

without clinical manifestations.

*adjective*, medicine

Dorland Medical

**subcortical stimulator**

device that applies electrical current to subsurface areas of a patient's brain to treat severe intractable pain, consisting of an implanted receiver with electrodes that are placed within a patient's brain and an external transmitter for transmitting the stimulating pulses across the patient's skin to the implanted receiver.

*noun*, medical device technology

CFR

**subculture**

transfer of cells from one culture vessel to another.

*noun*, biology

ASTM

**subcutaneous**

1. beneath the skin.

*adjective*, medicine

Dorland Medical

2. route of administration of a drug or device beneath the skin.

*adjective*, medicine

Szycher's Biomaterials

**subcuticular suture**

method of skin closure involving placement of stitches in the subcuticular tissues parallel with the line of the wound.

*noun*, surgery

Dorland Medical

**subdural**

relating to the space between the outer layer of the meninges and the arachnoid of the brain.

*adjective*, medicine

Black's Medical

**sublingual**

route of administration of a drug or device under the tongue.

*adjective*, medicine

Szycher's Biomaterials

**sublingual gland**

one of a pair of major salivary glands forming a ridge on either side of the floor of the mouth, below the tongue.

*noun*, anatomy

Heinemann Dental

**subluxation**

partial dislocation.

*noun*, medicine

Black's Medical

**submandibular gland** *submaxillary gland*

one of a pair of major salivary glands lying on the inner edge of the mandible, in the region of the angle.

*noun*, anatomy

Heinemann Dental

**submucosa**

layer of connective tissue that occurs under a mucous membrane.

*noun*, dentistry

Black's Medical

**subperiosteal implant**

custom prosthetic device surgically implanted into the lower or upper jaw between the periosteum and supporting bony structures, intended to provide support for a prosthesis, such as a denture.

*noun*, dentistry

CFR

**subsidence**

process by which an orthopaedic prosthesis slowly moves under the action of mechanical forces such that it embeds itself deeper into the host bone.

*noun*, surgery

Williams

**substrate**

1. surface upon which a different material is deposited or adhered, usually in a coating or layer.

*noun*, material science

2. substance upon which an enzyme acts.

*noun*, biology

3. neutral substance containing a nutrient solution.

*noun*, biology

Dorland Medical

**suburothelial**

pertaining to the tissue immediately underlying the urothelium.

*adjective*, anatomy

Williams

**sucrose**

disaccharide of glucose and fructose from sugar cane, sugar beet, or other sources.

*noun*, biology

Dorland Medical

**sudden infant death syndrome SIDS.**

sudden death of an infant which is unexplained by history or post-mortem exam.

*noun*, medicine

Biomedical Engineering Handbook

**sugar**

any of a class of sweet water-soluble carbohydrates, the monosaccharides and smaller oligosaccharides.  
*noun*, chemistry  
Dorland Medical

**sulcus**

groove, trench, or furrow.  
*noun*, anatomy  
Dorland Medical

**sulphadiazine** (sulfadiazine)  
antibacterial sulphonamide.  
*noun*, pharmacology  
Dorland Medical

**sulphhydryl** (sulfhydryl)  
the univalent radical, --SH.  
*noun*, chemistry  
Dorland Medical

**sulphur** (sulfur) **S**.  
non-metallic element occurring in many allotropic forms, at. no. 16.  
*noun*, chemistry  
Larousse Science

**superalloy**  
alloy capable of service at high temperatures, usually above 1000DEGREEE SYMBOL C.  
*noun*, metallurgy  
Larousse Science

**superantigen**  
an antigen which reacts with all the T-cells belonging to a particular T-cell receptor V region family, and which therefore stimulates (or deletes) a much larger number of cells than does conventional antigen.  
*noun*, immunology  
Roitt Immunology

**superglue**  
popular name for cyanoacrylate adhesive, supplied as fluid monomer or prepolymer, which polymerises when in contact with surfaces.  
*noun*, polymer science  
Larousse Science

**superior**  
situated above, or directed upward.  
*adjective*, anatomy  
Dorland Medical

**superlattice**  
ordering of solute atoms in a substitutional solid solution which results in a regular pattern of solute atoms superimposed upon the solvent lattice structure.  
*noun*, material science  
Larousse Science

**supernatant**  
liquid or fluid forming a distinct layer on the surface of another liquid or precipitate.  
*noun*, chemistry  
Szycher's Biomaterials

**superoxide**  
any compound containing the highly reactive and extremely toxic oxygen radical O SUBSCRIPT 2 --.  
*noun*, chemistry

Dorland Medical

**superoxide anion**

O'SUBSCRIPT<sub>2</sub>. Oxygen molecule that carries an extra unpaired electron, and is therefore a free radical.  
*noun*, chemistry  
Larousse Science

**superplasticity**

extremely high ductility shown by certain alloys when deformed at low strain rates at moderately high temperatures.  
*noun*, engineering  
Larousse Science

**superstructure**

metal framework fitted to a dental implant abutment or abutments which provides retention for a prosthesis.  
*noun*, dentistry  
Heinemann Dental

**supinate**

act of turning the palm forward or upward, or of raising the medial margin of the foot.  
*verb*, medicine  
Dorland Medical

**supine**

lying with the face upward, or on the dorsal surface.  
*adjective*, anatomy  
Dorland Medical

**suppository**

easily fusible medicated mass to be introduced into a body orifice, as the rectum, urethra, or vagina.  
*noun*, medicine  
Dorland Medical

**suppression**

act of holding back or checking.  
*noun*, general  
Dorland Medical

**suppuration**

formation or discharge of pus.  
*noun*, medicine  
Dorland Medical

**suppurative inflammation**

inflammation marked by pus formation.  
*noun*, medicine  
Dorland Medical

**supra-**

indicating above or over.  
*prefix*, anatomy  
Dorland Medical

**suprapubic**

above the pubes.  
*adjective*, anatomy  
Dorland Medical

**suprapubic urological catheter**

flexible tubular device that is inserted through the abdominal wall into the urinary bladder with the aid of a trocar and cannula, used to pass fluids to and from the urinary tract.

*noun*, medical device technology  
CFR

**surface analysis**

any procedure that is intended to examine and characterise the chemical, physical or morphological properties of a material surface, especially at the micro- or ultra-structural level.

*noun*, material science  
Williams

**surface energy**

free potential of a surface, equal to the surface tension multiplied by the surface area.

*noun*, physics  
Larousse Science

**surface engineering**

treatment of surfaces to confer on them properties distinct from those of the bulk.

*noun*, engineering  
Larousse Science

**surface modification**

any procedure which is applied to a material surface with the intended purpose of altering the chemical or physical properties of that surface, thereby enhancing performance.

*noun*, biomaterials science  
Williams

**surface tension**

property possessed by liquid surfaces whereby they appear to be covered by a thin elastic membrane in a state of tension, the surface tension being measured by the force acting normally across unit length in the surface.

*noun*, physics  
Larousse Science

**surface-contacting device**

any medical device that has direct contact with the patient but only via epithelial surfaces

*noun*, medical device technology  
Williams

**surfactant**

compound that reduces the surface tension of its solvent.

*noun*, chemistry  
Larousse Science

**surgery**

branch of medicine which treats diseases, injuries, and deformities by manual or operative methods.

*noun*, surgery  
Dorland Medical

**surgical gloves**

device made of natural or synthetic rubber intended to be worn by operating room personnel to protect a surgical wound from contamination.

*noun*, surgery  
CFR

**surgical gut suture**

absorbable, sterile, flexible thread prepared from either the serosal connective tissue layer of beef (bovine) or the submucosal fibrous tissue of sheep (ovine) intestine, and is intended for use in soft tissue approximation.

*noun*, surgery  
CFR

**surgical instrument**

reusable medical device that is intended for surgical use, including cutting, drilling, sawing, scraping, clamping, hammering, puncturing, dilating, retracting or clipping, without connection to an active device.

*noun*, regulatory affairs  
Canadian Medical Devices

**surgical mesh**

device implanted to reinforce soft tissue or bone where weakness exists.

*noun*, medical device technology  
Szycher's Medical Devices

**surgically invasive device**

invasive device that is intended to enter the body through an artificially created opening that provides access to body structures and fluids.

*noun*, regulatory affairs  
Canadian Medical Devices

invasive device which penetrates inside the body through the surface of the body, with the aid or in the context of a surgical operation.

*noun*, regulatory affairs  
EU Directive

**survey**

study designed to obtain information from a large number of respondents through written questionnaires, telephone interviews, door-to-door canvassing, or similar procedures.

*noun*, regulatory affairs  
IRB Guidebook

**susceptible**

1. readily affected or acted upon.

*noun*, general

2. lacking immunity or resistance and thus at risk of infection.

*noun*, medicine  
Dorland Medical

**suspension**

1. condition of temporary cessation, as of animation, of pain, or of any vital process.

*noun*, general  
Dorland Medical

2. system in which very small particles of solid, semi solid or liquid are uniformly dispersed in a liquid or gaseous medium.

*noun*, chemistry  
Szycher's Biomaterials

3. preparation of a finely divided drug intended to be incorporated (suspended) in some suitable liquid vehicle before it is used, or already incorporated in such a vehicle.

*noun*, pharmacology  
Dorland Medical

**suspension polymerisation**

polymerisation process in which the monomer or mixture of monomers is dispersed by mechanical agitation in a second liquid phase, usually water, in which both the monomer and the polymer are essentially insoluble.

*noun*, polymer science

Szycher's Biomaterials

**suspensory**

ligament, bone, muscle, sling, or bandage that serves to hold up a part.

*adjective*, anatomy  
Dorland Medical

**sustained release**

regulation of the rate of drug delivery, usually by physico-chemical means, in order to prolong drug action and availability.

*noun*, pharmacology  
Williams

**sutura**

type of joint in which the apposed bony surfaces are united by fibrous tissue, permitting no movement.

*adjective*, anatomy  
Dorland Medical

Notes: Found only between bones of the skull.

**suture**

1. line of weakness along which splitting may occur, as in a dehiscent fruit.

*noun*, general

2. line at the junction of fused parts.

*noun*, anatomy  
Larousse Science

3. line of junction between bones of the skull.

*noun*, anatomy  
Heinemann Dental

4. stitch or series of stitches made to secure apposition of the edges of a surgical or traumatic wound

*noun*, surgery  
Dorland Medical

**swab**

wad of cotton or other absorbent material attached to the end of a wire or stick, used for applying medication, removing material, collecting bacteriological material etc.

*noun*, biology  
Dorland Medical

**swelling**

transient abnormal enlargement of a body part or area not due to cell proliferation.

*noun*, medicine  
Dorland Medical

**sympathectomy**

transection, resection, or other interruption of some portion of the sympathetic nervous pathway.

*noun*, surgery  
Dorland Medical

**sympathetic**

pertaining to the sympathetic nervous system or one of its nerves.

*adjective*, anatomy  
Dorland Medical

**symphysis**

union of bones in the middle line of the body, by fusion, ligament or cartilage.

*noun*, anatomy  
Larousse Science

**symptom**

any subjective evidence of disease or of a patient's condition, such evidence being perceived by the patient.

*noun*, clinical practice  
Dorland Medical

**symptomatic**

1. pertaining to or of the nature of a symptom.

*adjective*, clinical practice

2. exhibiting the symptoms of a particular disease but having a different cause.

*adjective*, medicine  
Dorland Medical

**synapse**

site of functional apposition between neurons.

*noun*, anatomy  
Dorland Medical

**syncope**

temporary loss of consciousness due to generalised cerebral ischemia, a faint.

*noun*, medicine  
Dorland Medical

**syncytium**

tissue containing many nuclei, which is not divided into separate compartments by cell membranes.

*noun*, biology  
Larousse Science

**syndiotactic**

pertaining to a type of polymer molecule in which groups of atoms that are not part of the primary backbone structure alternate regularly on opposite sides of the chain.

*adjective*, polymer science  
Szycher's Biomaterials

**syndrome**

set of symptoms occurring together, the sum of signs of any morbid state.

*noun*, clinical practice  
Dorland Medical

**synergism**

condition in which the result of the combined action of two or more agents.

*noun*, general  
Larousse Science

**synovectomy**

excision of a synovial membrane.

*noun*, surgery  
Dorland Medical

**synovia**

transparent, viscid fluid secreted by the synovial membrane and found in joint cavities, bursae, and tendon sheaths.

*noun*, anatomy  
Dorland Medical

**synovial membrane**

inner of the two layers of the articular capsule of a synovial joint, composed of loose connective tissue and having a free smooth surface that lines the joint cavity.

*noun*, anatomy  
Dorland Medical

**synovitis**

inflammation of a synovial membrane, usually painful, particularly on motion, and characterised by fluctuating swelling, due to effusion in a synovial sac.

*noun*, medicine

Dorland Medical

**synthesis**

creation of a compound by union of elements composing it, done artificially or as a result of natural processes.

*noun*, chemistry

Dorland Medical

**synthetic resin**

resinous compound made from synthetic materials.

*noun*, polymer science

Larousse Science

**syringe**

instrument for injecting liquids into or withdrawing them from any vessel, cavity or device.

*noun*, clinical practice

Dorland Medical

**system**

medical device comprising a number of components or parts intended to be used together to fulfil some or all of the device's intended functions, and that is sold under a single name.

*noun*, regulatory affairs

Canadian Medical Devices

**systematic review**

term used to describe systematic objective reviews of the outcomes of randomised clinical trials according to the rules of the Cochrane Collaboration.

*noun*, clinical practice

Williams

**systemic**

pertaining to or affecting the body as a whole.

*adjective*, medicine

Dorland Medical

**systemic lupus erythematosus SLE.**

chronic generalised connective tissue disorder associated with autoimmunity, ranging from mild to fulminating, marked by skin eruptions, arthralgia, arthritis, leukopenia, anaemia, visceral lesions, neurologic manifestations, lymphadenopathy, fever, and other constitutional symptoms.

*noun*, medicine

Dorland Medical

**systemic toxicity**

toxicity caused by a biomaterial involving the entire organism.

*noun*, biomaterials science

ISO

**systole**

contraction, or period of contraction, of the heart, especially of the ventricles.

*noun*, biology

Dorland Medical

**systolic**

relating to the contraction, or period contraction, of the heart, especially of the ventricles.

*adjective*, biology

Dorland Medical

**T helper cell**

T lymphocytes of the CD4+ve subset which provide 'help' in the form of interleukins to other lymphocytes allowing them to differentiate to perform their immune effector functions.

*noun*, immunology

Larousse Science

**T lymphocyte T-cell.**

thymus-dependent lymphocytes; those that pass through or are influenced by the thymus before migrating to tissues and which are responsible for cell-mediated immunity and delayed hypersensitivity.

*noun*, immunology

Dorland Medical

**T lymphocyte antigen receptor *T-cell receptor***

molecule present at the surface membrane of T lymphocytes capable of specifically binding antigen in association with MHC antigen at the surface of an antigen presenting cell.

*noun*, immunology

Larousse Science

**T-independent antigen**

antigen which is able to elicit an antibody response in the absence of T-cells.

*noun*, immunology

Roitt Immunology

**T-cell receptor *T lymphocyte antigen receptor***

molecule present at the surface membrane of T lymphocytes capable of specifically binding antigen in association with MHC antigen at the surface of an antigen presenting cell.

*noun*, immunology

Larousse Science

**T-dependent antigen**

antigen which requires helper T-cells in order to elicit an antibody response.

*noun*, immunology

Roitt Immunology

**t-plasminogen activator *tissue plasminogen*****activator t-PA, TPA.**

endopeptidase synthesised by endothelial cells that binds to fibrin clots and catalyses the cleavage of plasminogen to the active form plasmin.

*noun*, biology

Dorland Medical

**tablet**

solid dosage form containing a medicinal substance.

*noun*, pharmacology

Dorland Medical

**tachy-**

denoting rapid or swift.

*prefix*, general

Dorland Medical

**tachycardia**

abnormally rapid heart rate.

*noun*, medicine  
Dorland Medical

**tachypnea**

very rapid respiration.  
*noun*, medicine  
Dorland Medical

**tacticity**

regularity or symmetry in the molecular arrangement or structure of a polymer molecule.  
*noun*, polymer science  
Szycher's Biomaterials

**Tafel plot**

graph of overpotential against logarithm of the current in an electrochemical cell.  
*noun*, chemistry  
Larousse Science

**talc**

native hydrous magnesium silicate, sometimes with a small amount of aluminium silicate, used as a dusting powder.  
*noun*, chemistry  
Dorland Medical

**talipes**

congenital deformity of the foot.  
*noun*, medicine  
Dorland Medical

**tampon**

pack, pad, or plug made of cotton, or other material, variously used in surgery to plug the nose, vagina, etc., for the control of haemorrhage or the absorption of secretions.  
*noun*, medicine  
Dorland Medical

**tamponade**

pathologic compression of a part.  
*noun*, medicine  
Dorland Medical

**tantalum Ta.**

metallic element, at. no. 73.  
*noun*, chemistry  
Larousse Science

**targeted drug delivery**

process by which a drug is delivered to the site of action without it exerting any pharmacological effect elsewhere.  
*noun*, pharmacology  
Williams

Notes: This may be achieved by means of a mechanical device such as an infusion pump or by chemical or physico-chemical means.

**tarsus**

the seven bones - talus, calcaneus, navicular, medial, intermediate and lateral cuneiform, and cuboid - composing the articulation between the foot and leg.  
*noun*, anatomy  
Dorland Medical

**tartar**

dental calculus.  
*noun*, dentistry

Dorland Medical

**taxis**

orientation movement of a motile organism in response to a stimulus.  
*noun*, biology  
Dorland Medical

**taxonomy**

science of classification as applied to living organisms, including study of means of formation of species.  
*noun*, biology  
Larousse Science

**tear strength**

general term used to describe the resistance of a material to tearing.  
*noun*, engineering  
Williams

**technology**

practice, description and terminology of any or all of the applied sciences which have practical value and/or industrial use.  
*noun*, engineering  
Larousse Science

**Teflon**

trade name for polytetrafluoroethylene.  
*noun*, polymer science  
Larousse Science

**tel(o)-**

signifying end.  
*prefix*, general  
Dorland Medical

**tele-**

indicating operating at a distance.  
*prefix*, general  
Dorland Medical

**telemetry**

making of measurements at a distance from the subject.  
*noun*, physics  
Dorland Medical

**telomer**

low molecular weight addition polymer, in which the growth of the molecule is terminated by a radical supplying chain transfer agent.  
*noun*, polymer science  
Szycher's Biomaterials

**telomere**

structure which terminates the arm of a chromosome.  
*noun*, biology  
Larousse Science  
extremity of a chromosome.  
*noun*, genetics  
Dorland Medical

**telophase**

last of the four stages of mitosis  
*noun*, biology  
Dorland Medical

**temper**

relative condition of the hardness and mechanical properties of a metal.

*noun*, metallurgy  
Larousse Science

**tempering**

reheating of hardened steel at any temperature below the critical range, in order to decrease the hardness.

*noun*, metallurgy  
Larousse Science

**template**

strand of DNA or RNA (mRNA) that specifies the base sequence of a newly synthesised strand of DNA or RNA.

*noun*, genetics  
Dorland Medical

**temple**

lateral region on either side of the head, above the zygomatic arch.

*noun*, anatomy  
Dorland Medical

**temporal**

1. pertaining to the temple.

*adjective*, anatomy

2. pertaining to time.

*adjective*, general

Dorland Medical

**temporomandibular**

pertaining to the temporal bone and mandible.

*adjective*, anatomy

Dorland Medical

**temporomandibular joint**

bicondylar joint formed by the head of the mandible and the mandibular fossa, and the articular tubercle of the temporal bone.

*noun*, anatomy

Dorland Medical

**Tenckhoff catheter**

any of several types of catheter commonly used in peritoneal dialysis, having end and side holes and one or more extra-peritoneal felt cuffs that provide a bacteria-tight seal.

*noun*, medical device technology

Dorland Medical

**tendinitis**

inflammation of tendons and of tendon-muscle attachments.

*noun*, medicine

Dorland Medical

**tendon**

fibrous cord of connective tissue continuous with the fibres of a muscle and attaching the muscle to bone or cartilage.

*noun*, anatomy

Dorland Medical

**tenomyoplasty**

repair of a tendon and muscle.

*noun*, surgery

Dorland Medical

**tenonectomy**

excision of part of a tendon to shorten it.

*noun*, surgery

Dorland Medical

**tensile**

relating to the condition in which a material is stretched along one or more axes

*adjective*, engineering

Williams

**tensile modulus**

quantity corresponding to Young's modulus in non-linear and/or viscoelastic materials such as polymers.

*noun*, engineering

Larousse Science

**tensile strength**

maximum tensile force in a tensile test divided by the original cross-sectional area.

*noun*, engineering

Larousse Science

**tensile testing machine**

machine for applying a tensile or compressive load to a test piece, by means of hand- or power-driven screws, or by a hydraulic ram.

*noun*, engineering

Larousse Science

**tensiometer**

versatile, portable testing machine used for a variety of mechanical tests, including tensile tests.

*noun*, engineering

Larousse Science

**tension**

1. act of stretching or the condition of being stretched or strained.

*noun*, engineering

2. partial pressure of a component of a gas mixture.

*noun*, chemistry

Dorland Medical

**tension rod**

structural member subject to tensile stress only.

*noun*, engineering

Larousse Science

**tensor**

any muscle that stretches or makes tense.

*adjective*, anatomy

Dorland Medical

**tera-**

1. descriptive of monster-like.

*prefix*, biology

Dorland Medical

**teratogen**

agent or influence that causes physical defects in the developing embryo.

*noun*, embryology

Dorland Medical

**teratogenesis**

production of deformity in the developing embryo, or of a monster.

*noun*, embryology

Dorland Medical

**teratogenic**

substance or drug producing abnormal embryos.  
*adjective*, embryology  
Larousse Science

**teratology**

division of embryology and pathology dealing with abnormal development and congenital deformations.  
*noun*, embryology  
Dorland Medical

**teratoma**

true neoplasm made up of different types of tissue, none of which is native to the area in which it occurs; usually found in the ovary or testis.  
*noun*, medicine  
Dorland Medical

**termination**

ending of polymerisation reaction by one of several possible mechanisms.  
*noun*, polymer science  
Larousse Science

**terpolymer**

copolymer of three different monomers.  
*noun*, polymer science  
Larousse Science

**test house**

commercial testing facility that offers services to the manufacturing industry for experimental or validation purposes with respect to mechanical properties, biological properties, safety etc.  
*noun*, regulatory affairs  
Williams

**test kit**

*in vitro* diagnostic device that consists of reagents or articles, or any combination of these, and that is intended to be used to conduct a specific test.  
*noun*, regulatory affairs  
Canadian Medical Devices

**test material**

material, device, device portion or component thereof that is sampled for biological or chemical testing.  
*noun*, biomaterials science  
ISO

**test sample**

extract or portion of the test material that is subjected to biological or chemical testing.  
*noun*, biomaterials science  
ISO

**testicular**

pertaining to the testis.  
*noun*, anatomy  
Dorland Medical

**testicular implant**

implantable device that is placed within the scrotum to physically replace a testicle.  
*noun*, medical device technology  
Williams

**testicular prosthesis**

implantable medical device that consists of a solid

or gel-filled silicone rubber prosthesis that is implanted surgically to resemble a testicle.  
*noun*, medical device technology  
CFR

**testis**

the male gonad; either of the paired egg-shaped glands normally situated in the scrotum, in which the spermatozoa develop.  
*noun*, anatomy  
Dorland Medical

**testosterone**

principal androgenic hormone, produced by the interstitial cells of the testes.  
*noun*, biology  
Dorland Medical

**tetracycline**

antibiotic with a wide spectrum of anti-microbial activity, isolated from elaboration products of certain species of Streptomyces.  
*noun*, pharmacology  
Dorland Medical

**tetragonal crystal**

structure of a crystal in which the unit cell is a tetragon.  
*noun*, chemistry  
Williams

**tetragonal system**

crystallographic system in which all the forms are referred to three axes at right angles.  
*noun*, material science  
Larousse Science

**tetrahydrofuran THF.**

colourless solvent obtained from the catalytic hydrogenation of furan.  
*noun*, chemistry  
Szycher's Biomaterials

**tetralogy**

group or series of four.  
*noun*, general  
Dorland Medical

**tetralogy of Fallot**

complex of congenital heart defects consisting of pulmonary stenosis, interventricular septal defect, hypertrophy of right ventricle, and dextroposition of the aorta.  
*noun*, medicine  
Dorland Medical

**tetramer**

polymer synthesised by uniting four different simple molecules.  
*noun*, polymer science  
Szycher's Biomaterials

**tetrapeptide**

peptide which, on hydrolysis, yields four amino acids.  
*noun*, chemistry  
Dorland Medical

**textile**

term used to describe any fibre, filament and yarn and any product produced from them.

*noun*, polymer science  
Larousse Science

**texture**

1. physical characteristics of a material in terms of roughness and shape of surface features  
*noun*, material science
2. microstructural features of a material such as grain shape, distribution of phases and crystallographic orientation.  
*noun*, material science  
Larousse Science

**textured surface**

any surface in which a regular pattern, especially at the micro- or ultra-structural level has been deliberately introduced  
*noun*, material science  
Williams

**thalamus**

either of two large ovoid masses, consisting chiefly of grey substance, situated one on either side of and forming part of the lateral wall of the third ventricle.  
*noun*, anatomy  
Dorland Medical

**theoretical density**

maximum density at which a material can exist.  
*noun*, material science  
Williams  
Notes: This occurs under conditions where there is no porosity; the term is most commonly used to define the freedom from porosity in structural ceramics.

**theoretical strength**

estimate of the strength of any material from atomic/molecular data.  
*noun*, engineering  
Larousse Science

**therapeutic apheresis**

process involving the separation and removal of a specific component of the blood (either plasma, a plasma component, or one of the cellular fractions) for the treatment of a metabolic disorder or disease state.  
*noun*, medicine  
Biomedical Engineering Handbook

**therapeutic dosage**

*noun*, pharmacology  
Notes: NEED DEF.

**Therapeutic Goods Administration TGA.**

Australian regulatory body with responsibility for drugs and devices .  
*noun*, regulatory affairs  
Williams

**therapeutic intent**

the research physician's intent to provide some benefit to improving a subject's condition (by prolongation of life, shrinkage of tumour, or improved quality of life, even though cure or dramatic improvement cannot necessarily be effected.)  
*noun*, medicine  
IRB Guidebook  
Notes: This term is sometimes associated with Phase 1 drug

studies in which potentially toxic drugs are given to an individual with the hope of inducing some improvement in the patient's condition as well as assessing the safety and pharmacology of a drug.

**therapeutics**

science and art of healing.  
*noun*, clinical practice  
Dorland Medical

**therapist**

person skilled in the treatment of disease or other disorder.  
*noun*, clinical practice  
Dorland Medical

**therapy**

1. treatment of disease.  
*noun*, clinical practice  
Dorland Medical
2. treatment intended and expected to alleviate a disease or disorder.  
*noun*, clinical practice  
IRB Guidebook

**therm(o)-**

relating to heat.  
*prefix*, general  
Dorland Medical

**thermal analysis**

use of cooling or heating curves in the study of physical changes in materials.  
*noun*, material science  
Larousse Science

**thermal expansion**

change in dimensions of a substance on increasing the temperature.  
*noun*, physics  
Williams  
Notes: Of relevance in biomaterials science in the case of dental restorative materials which display coefficients of thermal expansion different to that of tooth substance, causing gaps to open between restoration and tooth

**thermal necrosis**

death of any tissue or tissue component caused by excess temperature.  
*noun*, medicine  
Williams  
Notes: This may be caused by the exotherm associated with the curing or polymerisation of a biomaterial such as bone cement.

**thermogravimetric analysis TGA.**

technique where the weight of a specimen is continually recorded while being heated in a thermobalance.  
*noun*, material science  
Szycher's Biomaterials

**thermomechanical analysis TMA.**

technique for analysing the deformation of a small sample of film, sheet, fibre, disc etc., as a function of temperature.  
*noun*, material science  
Szycher's Biomaterials

**thermomechanical treatment**

any procedure applied to a material which involves the simultaneous or sequential application of heat and mechanical force.  
*noun*, engineering

Williams

**thermoplastic**

polymer-based plastic that repeatedly can be softened by heating and hardened by cooling through a temperature range characteristic of the plastic, and that in the softened state can be shaped by flow into articles by moulding or extrusion.

*noun*, polymer science  
ASTM

**thermoplastic elastomer**

elastomer that displays the typical high elasticity, tensile strength and toughness of vulcanised rubber, but which does not need to be cross-linked through covalent bonds.

*noun*, polymer science  
Szycher's Biomaterials

**thermoplastic polyurethane**

linear or segmented polyurethanes, most frequently synthesised by reacting diols with diisocyanates, that can be melted for processing without significant cross-linking or degradation.

*noun*, polymer science  
ASTM

**thermoregulation**

regulation of heat, as of the body heat of a warm-blooded animal.

*noun*, biology  
Dorland Medical

**thermosetting plastic** *thermosetting resin*

resin or compound which in its final state as a finished article is substantially infusible and insoluble.

*noun*, polymer science  
Szycher's Biomaterials

**thermosetting resin** *thermosetting plastic*

resin or compound which in its final state as a finished article is substantially infusible and insoluble.

*noun*, polymer science  
Szycher's Biomaterials

**thin layer chromatography**

form of chromatography in which compounds are separated by a suitable solvent or solvent mixture on a thin layer of adsorbent material coated on a glass plate.

*noun*, chemistry  
Larousse Science

**thio-**

indicating the presence of sulphur in a compound, usually as a substitute for oxygen.

*prefix*, chemistry  
Szycher's Biomaterials

**thiol**

any of a group of organic compounds resembling alcohols, but having the oxygen of the hydroxyl group replaced by sulphur.

*noun*, chemistry  
Szycher's Biomaterials

**thixotropy**

property of certain gels of becoming fluid when

shaken and then becoming semisolid again.

*noun*, chemistry  
Dorland Medical

**thorac(o)**

relating to the chest.

*prefix*, anatomy  
Dorland Medical

**thoracic**

pertaining to the chest.

*adjective*, anatomy  
Dorland Medical

**thoracotomy**

incision of the chest wall.

*noun*, surgery  
Dorland Medical

**thoroscope**

device used to provide access, illumination, observation and manipulation of the pleural cavity.

*noun*, medical device technology  
Szycher's Biomaterials

**thorax**

chest.

*noun*, anatomy  
Dorland Medical

**three body abrasion**

wear of a material surface when in sliding contact with another material that is induced by the presence of loose particles at the interface.

*noun*, engineering  
Williams

Notes: These particles may be retained wear debris or extraneous material, as with particles of bone or bone cement in total joint prostheses

**threonine Thr, short form T.**

2-amino-3-hydroxybutanoic acid. A polar amino acid.

*noun*, biology  
Larousse Science

**threshold**

1. level that must be reached for an effect to be produced.

*noun*, general  
Dorland Medical

2. lowest dose of a substance (e.g. a chemical) at which a specified measurable effect is observed and below which it is not observed.

*noun*, biology  
CEQ/OECD

**threshold limit value**

maximum concentration of a named pollutant that a worker should be exposed to in a given period of time.

*noun*, toxicology  
Larousse Science

**thromb(o)-**

relating to a blood clot.

*prefix*, biology  
Dorland Medical

**thrombectomy**

surgical removal of a clot from a blood vessel.

*noun*, surgery

Dorland Medical

**thrombin**

enzyme resulting from activation of prothrombin, which catalyses the conversion of fibrinogen to fibrin.

*noun*, biology  
Dorland Medical

**thrombocyte**

blood platelet.

*noun*, biology  
Dorland Medical

**thrombocythemia**

fixed increase in the number of circulating blood platelets.

*noun*, biology  
Dorland Medical

**thrombocytopenia**

decrease in number of platelets in circulating blood.

*noun*, biology  
Dorland Medical

**thrombocytosis**

increase in number of platelets in circulating blood.

*noun*, biology  
Dorland Medical

**thromboembolism**

obstruction of a blood vessel with thrombotic material carried by the blood from the site of origin to plug another vessel.

*noun*, medicine  
Dorland Medical

**thromboendarterectomy**

excision of an obstructing thrombus together with a portion of the inner lining of the obstructed artery.

*noun*, surgery  
Dorland Medical

**thromboendarteritis**

inflammation of the innermost coat of an artery, with thrombus formation.

*noun*, medicine  
Dorland Medical

**thrombogenesis**

blood clot formation.

*noun*, biology  
Dorland Medical

**thrombogenicity**

property of a material which induces and/or promotes the formation of a thrombus.

*noun*, biomaterials science  
ESB Consensus Conference I

**β-thromboglobulin**

platelet-specific protein released with platelet factor 4 on platelet activation.

*noun*, biology  
Dorland Medical

**thrombophlebitis**

inflammation of a vein associated with thrombus formation.

*noun*, medicine

Dorland Medical

**thromboplastin**

substance in blood and tissues which, in the presence of ionised calcium, aids in the conversion of prothrombin to thrombin.

*noun*, biology  
Dorland Medical

**thrombosis**

formation or presence of a thrombus.

*noun*, medicine  
Dorland Medical

**thrombospondin**

glycoprotein that interacts with a wide variety of molecules, including heparin, fibrin, fibrinogen, platelet cell membrane receptors, collagen, and fibronectin, and plays a role in platelet aggregation.

*noun*, biology  
Dorland Medical

**thromboxane**

either of two compounds, ASUBSCRIPT<sub>2</sub>, and BSUBSCRIPT<sub>2</sub>.

*noun*, biology  
Dorland Medical

Notes: Thromboxane ASUBSCRIPT<sub>2</sub> is synthesised by platelets and is an inducer of platelet aggregation and platelet release functions and is a vasoconstrictor; it is very unstable and is hydrolysed to thromboxane BSUBSCRIPT<sub>2</sub>.

**thrombus**

aggregation of blood factors, primarily platelets and fibrin with entrapment of cellular elements.

*noun*, biology  
Dorland Medical

**thymidine**

thymine linked to ribose, a rarely occurring base in rRNA and tRNA.

*noun*, biology  
Dorland Medical

**thymus**

bilaterally symmetrical lymphoid organ consisting of two pyramidal lobules situated in the anterior superior mediastinum; the site of production of T lymphocytes.

*noun*, anatomy  
Dorland Medical

**thyr(o)-**

relating to the thyroid.

*prefix*, anatomy  
Dorland Medical

**tibia**

1. medial and larger of 2 bones of lower leg.

*noun*, anatomy  
Dorland Medical

2. in land vertebrates, the pre-axial bone of the crus.

*noun*, anatomy  
Larousse Science

**tibial plateau**

proximal end of the tibia that articulates with the femoral condyles in the knee joint.

*noun*, anatomy  
Williams

**tibiofemoral**

pertaining to the tibia and fibula.  
*adjective*, anatomy  
Dorland Medical

**tibiofibular**

pertaining to the tibia and fibula.  
*adjective*, anatomy  
Dorland Medical

**tight joint**

intercellular junction at which adjacent plasma membranes are joined tightly together by interlinked rows of integral membrane proteins, limiting or eliminating the intercellular passage of molecules.  
*noun*, biology  
Dorland Medical

**tilting-disc valve**

a heart valve prosthesis consisting of a sewing ring and a valve housing containing a suspended disc that swings between open and closed positions.  
*noun*, medical device technology  
Dorland Medical

**tin Sn.**

at. no. 50; a soft, silvery-white metallic element.  
*noun*, chemistry  
Larousse Science

**tincture**

an alcoholic or hydroalcoholic solution prepared from an animal or vegetable drug or a chemical substance.  
*noun*, pharmacology  
Dorland Medical

**tinea**

ringworm; a name applied to many different superficial fungal infections of the skin.  
*noun*, medicine  
Dorland Medical

**tinnitus**

abnormal noise in the ears.  
*noun*, medicine  
Dorland Medical

**tissue**

1. organisation of cells and/or extra-cellular constituents.  
*noun*, regulatory affairs  
CEN  
2. aggregate of similar cells forming definite and continuous fabric, and usually having comparable and definable function.  
*noun*, biology  
Larousse Science

**tissue adhesive**

any substance that is used to secure wound closure through adhesive mechanisms.  
*noun*, biomaterials science  
Williams

**tissue culture**

growth of cells, including tissues and organs,

outside the organism in artificial media of salts and nutrients.

*noun*, biology  
Larousse Science

**tissue engineering**

1. the persuasion of the body to heal itself, through the delivery to the appropriate sites of molecular signals, cells and supporting structures.  
*noun*, biomaterials science  
Williams  
2. application of scientific principles to the design, construction, modification, growth and maintenance of living tissues.  
*noun*, biomaterials science  
Biomedical Engineering Handbook  
3. the application of the principles and methods of engineering and life sciences towards the fundamental understanding of structure/function relationships in normal and pathological mammalian tissues and the development of biological substitutes to restore, maintain or improve functions.  
*noun*, biomaterials science  
NSF  
4. an emerging discipline that applies engineering principles to create devices for the study, restoration, modification and assembly of functional tissues from native or synthetic sources.  
*noun*, biomaterials science  
NIH

**tissue plasminogen activator *t-plasminogen activator t-PA, TPA.***

endopeptidase synthesised by endothelial cells that binds to fibrin clots and catalyses the cleavage of plasminogen to the active form plasmin.  
*noun*, biology  
Dorland Medical

**tissue regeneration**

phenomenon by which damaged tissue is reconstituted, either with or without surgical, pharmacological or other intervention.  
*noun*, biology  
Williams

**tissue specific antigen**

cell antigen present in a given tissue but not found in other tissues.  
*noun*, immunology  
Larousse Science

**tissue-borne prosthesis**

dental prosthesis in which the load-bearing is provided entirely by the mucosa and underlying tissue.  
*noun*, dentistry  
Heinemann Dental

**titanium Ti.**

at. no. 22; a corrosion resistant metallic element.  
*noun*, chemistry  
Larousse Science

**titanium a/b alloy**

any alloy in which titanium is the major component and which contains at least one element that is a FISH SYBMOL stabiliser and at least one which is a GERMAN B stabiliser, such that the

alloy may exist, depending on temperature and thermomechanical processing as a multiphase FISH SYMBOL-GERMAN B structure  
*noun*, metallurgy  
Williams

**titanium alloy**

any alloy in which titanium is the major component and which retains, to a considerable extent, the corrosion resistance of pure titanium  
*noun*, metallurgy  
Williams

**titanium oxide**

TiO<sub>2</sub>, very stable substance with brilliant white appearance in powder form, used as a pigment, and which also forms as a very thin protective, passivating layer on titanium surfaces.  
*noun*, chemistry  
Williams

**titre (titer)**

measure of the relative 'strength' (a combination of amount and avidity) of an antibody or antiserum, usually given as the highest dilution which is still operationally detectable in, for example, an agglutination assay.  
*noun*, immunology  
Roitt Immunology

**toe**

digit of the foot.  
*noun*, anatomy  
Dorland Medical

**toilet**

cleansing and dressing of a wound.  
*noun*, clinical practice  
Dorland Medical

**tolerable intake**

estimate of the intake of a substance which can occur over a lifetime without appreciable health risk.  
*noun*, toxicology  
EHC170, 1994

**tolerance**

1. ability to endure without effect or injury.  
*noun*, biology  
Dorland Medical  
2. specific immunological unresponsiveness.  
*noun*, immunology  
Roitt Immunology  
3. allowable deviation from a standard size.  
*noun*, engineering  
ASTM

**tolerance dosage**

largest quantity of an agent that may be administered without harm.  
*noun*, toxicology  
Dorland Medical

**toluene di-isocyanate**

CH<sub>3</sub>(NCO)<sub>2</sub>. The most commonly used isocyanate in the production of polyurethanes.  
*noun*, polymer science  
Larousse Science

**tomogram**

image of a tissue section produced by tomography.  
*noun*, medicine  
Dorland Medical

**tomograph**

apparatus for moving an X-ray source in one direction as the film is moved in the opposite direction, thus showing in detail a predetermined plane of tissue while blurring or eliminating detail in other planes.  
*noun*, medicine  
Dorland Medical

**-tomy**

signifying incision or cutting.  
*suffix*, surgery  
Williams

**tone**

1. normal degree of vigour and tension.  
*noun*, medicine  
2. resistance of muscle to passive elongation or stretch.  
*noun*, medicine  
Dorland Medical

**tongue**

movable muscular organ on the floor of the mouth; it is the chief organ of taste, and aids in mastication, swallowing, and speech.  
*noun*, anatomy  
Dorland Medical

**tonicity**

1. state of tissue tone or tension.  
*noun*, medicine  
Dorland Medical  
2. physiology, the effective osmotic pressure equivalent of body fluid.  
*noun*, chemistry

**tonsil**

a small, rounded mass of tissue, especially of lymphoid tissue.  
*noun*, anatomy  
Dorland Medical

**tonsillectomy**

excision of a tonsil.  
*noun*, surgery  
Dorland Medical

**tooth**

one of the hard, calcified structures set in the alveolar processes of the jaws for the biting and mastication of food.  
*noun*, dentistry  
Dorland Medical

**tooth-borne prosthesis**

dental prosthesis in which the attachments are provided entirely by the teeth or implants.  
*noun*, dentistry  
Heinemann Dental

**top(o)**

particular place or area.  
*prefix*, general  
Dorland Medical

**topical**

pertaining to a particular area, as a topical anti-infective applied to a certain area of the skin and affecting only the area to which it is applied.

*adjective*, general  
Dorland Medical

**topical fluoride**

any agent containing fluoride that is applied to the surfaces of the teeth to improve their resistance to the onset of caries.

*noun*, dentistry  
Heinemann Dental

**topography**

1. description of an anatomic region or a special part.

*noun*, anatomy  
Dorland Medical

2. delineation of the natural and artificial features of an area of a surface.

*noun*, general  
Larousse Science

**torpor**

sluggishness.

*noun*, medicine  
Dorland Medical

**torque**

rotary force causing part of a structure to twist about an axis.

*noun*, engineering  
Dorland Medical

**torsion**

a type of mechanical stress, whereby the external forces twist an object about its axis.

*noun*, engineering  
Dorland Medical

**torso**

the body, exclusive of the head and limbs.

*noun*, anatomy  
Dorland Medical

**torus**

swelling or bulging projection.

*noun*, anatomy  
Dorland Medical

**total body perfusion**

maintenance of blood circulation through the arterial and venous system by means of a positive displacement pump introducing blood into an artery under pressure and collecting it from a vein for continuous recirculation.

*noun*, medical device technology  
Biomedical Engineering Handbook

**total hip arthroplasty THA.**

procedure in which the hip joint is replaced by a prosthesis involving both acetabulum and the upper end of the femur.

*noun*, medical device technology  
Williams

**total hip replacement prosthesis THR.**

prosthesis intended for the functional replacement of the hip joint in which one component replaces the acetabulum and one is attached to the upper

end of the femur.

*noun*, medical device technology  
Williams

**total knee arthroplasty TKP.**

procedure in which the knee joint is replaced by a prosthesis that involves both the femoral condyles and the tibial plateau with or without replacement of the patella.

*noun*, surgery  
Williams

**total ossicular replacement prosthesis**

device intended to be implanted for the total functional reconstruction of the ossicular chain and facilitates the conduction of sound waves from the tympanic membrane to the inner ear.

*noun*, medical device technology  
CFR

**total parental nutrition TPN.**

procedure by which all of the nutritional needs of an individual are supplied by means of an intravenous infusion.

*noun*, medicine  
Williams

Notes: Normally used for neonates and comatose patients.

**total temporomandibular joint prosthesis**

device that is intended to be implanted in the human jaw to replace the mandibular condyle and augment the glenoid fossa to functionally reconstruct the temporomandibular joint.

*noun*, medical device technology  
CFR

**totipotent**

capable of differentiation into all possible cell types.

*noun*, biology  
Biomedical Engineering Handbook

**tourniquet**

band to be drawn tightly around a limb for the temporary arrest of circulation in the distal area.

*noun*, medical device technology  
Dorland Medical

**toxemia**

condition resulting from the spread of bacterial products (toxins) by the bloodstream.

*noun*, medicine  
Dorland Medical

**toxic**

1. manifesting the symptoms of severe poisoning.

*adjective*, medicine

2. pertaining to, due to, or of the nature of a poison or toxin.

*adjective*, toxicology  
Dorland Medical

**toxic(o)-**

relating to poison.

*prefix*, toxicology  
Dorland Medical

**toxicity**

1. quality or degree of being poisonous or harmful to plant, animal, or human life.

*noun*, toxicology

CEQ/OECD

2. inherent potential or capacity of an agent or material to cause adverse effects in a living organism when the organism is exposed to it.

*noun*, toxicology

Holland, 1996

**toxicity assessment**

characterisation of the toxicological properties and effects of a substance including all aspects of its absorption, metabolism, excretion, and mechanism of action, with special emphasis on establishment of dose-response characteristics.

*noun*, toxicology

CEQ/OECD

**toxicology**

branch of medical science dealing with the nature and effects of poisons.

*noun*, toxicology

Larousse Science

**toxin**

poison, especially a protein or conjugated protein produced by some higher plants, certain animals, and pathogenic bacteria.

*noun*, toxicology

Dorland Medical

**toxoid**

1. modified or inactivated exotoxin that has lost toxicity but retains the ability to combine with, or stimulate the production of, antitoxin.

*noun*, toxicology

Dorland Medical

2. bacterial exotoxin which has been treated (usually with formaldehyde) so that it has lost its toxic properties but retains its ability to stimulate an immune response against the toxin.

*noun*, immunology

Larousse Science

**trabeculae** (trabecula)

general term for a supporting or anchoring strand of connective tissue, e.g., a strand extending from a capsule into the substance of the enclosed organ.

*noun*, anatomy

Dorland Medical

**trace element**

any metal or non-metal found in minute quantities in the human body which are essential components of the diet, but are harmful if taken in excess.

*noun*, medicine

Larousse Science

**trace element analysis**

1. type of elemental analysis which seeks to identify origin of materials by finding minor traces of elements accidentally present in samples.

*noun*, chemistry

Larousse Science

2. procedure of elemental analysis which seeks to identify the presence of very low levels of elements in tissues or materials, the presence of which even at these levels could have a significant effect.

*noun*, chemistry

Williams

**trachea**

cartilaginous and membranous tube descending from the larynx and branching into the left and right main bronchi.

*noun*, anatomy

Dorland Medical

**tracheal prosthesis**

tubular device intended to be implanted to reconstruct the trachea.

*noun*, medical device technology

CFR

**tracheal tube**

tube inserted either orally or nasally to convey gases or vapours to and from the trachea.

*noun*, medical device technology

ASTM

**tracheotomy**

incision of the trachea through the skin and muscles of the neck.

*noun*, medicine

Dorland Medical

**tract**

1. region, principally one of some length.

*noun*, anatomy

2. bundle of nerve fibres having a common origin, function, and termination.

*noun*, anatomy

Dorland Medical

**traction**

treatment involving tension on affected parts by means of suitable applied weights or otherwise.

*noun*, medicine

Larousse Science

**trans-**

signifying through, cross or beyond.

*prefix*, general

Dorland Medical

**transcellular fluid**

extracellular fluid that has been excreted or secreted through the cell membranes.

*noun*, biology

Heinemann Dental

**transcriptase**

enzyme that catalyses the synthesis (polymerisation) of RNA from ribonucleoside triphosphates, with DNA serving as a template.

*noun*, genetics

Dorland Medical

**transcription**

synthesis of RNA using a DNA template catalysed by RNA polymerase.

*noun*, genetics

Dorland Medical

**transcription factor**

protein that binds to a cis-regulatory element in the promoter region of a DNA and thereby directly or indirectly affects the initiation of its transcription to an RNA.

*noun*, genetics

Biomedical Engineering Handbook

**transcrystalline failure**

mechanical failure observed in metals in which the line of fracture passes through the crystals.

*noun*, metallurgy  
Larousse Science

**transcutaneous electrical nerve stimulation TENS.**

electrical stimulation of nerves for relief of pain by delivering a current through the skin.

*noun*, medicine  
Dorland Medical

**transdermal**

route of administration of a drug or device through the skin.

*adjective*, pharmacology  
Szycher's Biomaterials

**transducer**

device which converts a physical quantity into an electrical signal, either proportionally or according to a specified formula.

*noun*, engineering  
Larousse Science

**transduction**

1. transforming of one form of energy into another, as by the sensory mechanisms of the body.

*noun*, engineering

2. method of genetic recombination in bacteria, in which DNA is transferred between bacteria via bacteriophages.

*noun*, genetics  
Dorland Medical

**transdural**

through or across the dura mater.

*adjective*, medicine  
Dorland Medical

**transection**

division by cutting transversely.

*noun*, surgery  
Dorland Medical

**transfer film**

film of one material, usually the softer, which forms on the surface of another material, usually the harder, when the two are in sliding contact.

*noun*, engineering

Williams

Notes: Typically seen with a metal / polymer or ceramic / polymer couple in joint replacement, the nature of the film depending on the lubrication regime

**transfer moulding** (transfer molding)

development of compression moulding, where powder polymer is placed in small chamber adjacent to tool mould and when heated, is forced into tool cavity.

*noun*, engineering

Larousse Science

**transferase**

a class of enzymes that transfer a chemical group from one compound to another.

*noun*, biology  
Dorland Medical

**transferrin**

1. mammalian serum GERMANY-globulin that

binds and transports ferric ions.

*noun*, biology  
Larousse Science  
2. serum globulin that binds and transports iron.  
*noun*, biology  
Dorland Medical

**transformation**

1. conversion from one form to another.

*noun*, general

2. the change that a normal cell undergoes as it becomes malignant.

*noun*, biology

Dorland Medical

3. alteration of cells in tissue culture by various agencies so that they behave in many ways like cancer cells.

*noun*, biology  
Larousse Science

**transformation toughening**

phenomenon in which a relatively brittle material is rendered tougher through the introduction of a metastable crystalline state which is able to revert to the thermodynamically stable state under stress, for example at a crack tip, the strain field associated with this process inhibiting crack propagation.

*noun*, material science

Williams

Notes: Most readily seen with certain partially stabilised zirconia ceramics.

**transforming growth factor TGF.**

any of several proteins secreted by transformed cells and causing growth of normal cells, although not causing transformation.

*noun*, biology  
Dorland Medical

**transfusion** *blood transfusion*

introduction of whole blood or blood components directly into the blood stream.

*noun*, medicine  
Dorland Medical

**transgenic**

used to describe animals which are derived from embryos into which isolated genomic DNA from another species has been introduced at an early stage of development.

*adjective*, genetics

Larousse Science

**transient**

descriptive of a medical device that is normally intended for continuous use for less than 60 minutes.

*adjective*, regulatory affairs

EU Directive

**transition**

point mutation in which a purine base replaces a pyrimidine base or vice versa.

*noun*, genetics  
Dorland Medical

**transition metal**

any one of a large group of elements in which the filling of the outermost electron shell to eight

electrons is interrupted to bring the penultimate shell (which can be used in bonding) from eight to 18 or 32 electrons.  
*noun*, metallurgy  
Larousse Science

**transition temperature**

temperature at which a specific structural change takes place within a material.  
*noun*, material science  
Williams  
Notes: Of particular importance in relation to the transition from amorphous to crystalline states or from one crystal structure to another

**translocation**

attachment of a fragment of one chromosome to a non-homologous chromosome.  
*noun*, genetics  
Dorland Medical

**translucent**

pertaining to a substance that is capable of transmitting light but through which no object can be seen.  
*adjective*, material science  
Larousse Science

**transmembrane potential**

potential inside a cell membrane minus the potential just outside the membrane.  
*noun*, biology  
Biomedical Engineering Handbook

**transmissible agent**

unclassified pathogenic entity, prion and similar entities.  
*noun*, regulatory affairs  
CEN  
Notes:  
e.g. BSE agent, scrapie agent.

**transmission electron microscope**

form of high resolution electron microscope in which the specimen is evenly illuminated by a broad beam of electrons at 40-100kV and the image is formed directly by focusing those electrons which pass more or less unscattered through the specimen on a fluorescent screen.  
*noun*, physics  
Larousse Science

**transmural**

extending through or affecting the entire thickness of the wall of an organ or cavity.  
*noun*, anatomy  
Dorland Medical

**transosseous implant**

implant that penetrates the full thickness of the bone.  
*noun*, medical device technology  
Heinemann Dental

**transplant**

1. complete structure, such as an organ, that is transferred from a site in a donor to a site in a recipient for the purpose of reconstruction of the recipient site.  
*noun*, surgery  
ESB Consensus Conference I

2. to transfer tissue from one part to another.  
*verb*, surgery  
Dorland Medical

**transport**

movement of materials in biological systems, particularly into and out of cells and across epithelial layers.  
*noun*, biology  
Dorland Medical

**transverse**

extending from side to side; at right angles to the long axis.  
*noun*, general  
Dorland Medical

**traumat(o)-**

relating to trauma.  
*prefix*, medicine  
Dorland Medical

**traumatic**

relating to or caused by injury.  
*adjective*, medicine  
Dorland Medical

**traumatology**

branch of surgery dealing with wounds and disability from injuries.  
*noun*, surgery  
Dorland Medical

**treatment**

management and care of a patient or the combating of disease or disorder.  
*noun*, clinical practice  
Dorland Medical

**tremor**

involuntary trembling or quivering.  
*noun*, medicine  
Dorland Medical

**trephine**

1. crown saw for removing a circular disk of bone, chiefly from the skull.  
*noun*, surgery  
2. instrument for removing a circular area of cornea.  
*noun*, ophthalmology  
Dorland Medical

**tri-**

signifying three.  
*prefix*, general  
Dorland Medical

**triage**

sorting out and classification of casualties of war or other disaster to determine priority of need and proper place of treatment.  
*noun*, clinical practice  
Dorland Medical

**trial**

test or experiment.  
*noun*, general  
Dorland Medical

**trial denture**

trial plate, complete with artificial teeth, for fitting in the mouth and for adjustments before the final completion of a denture.

*noun*, dentistry  
Heinemann Dental

**tribology**

science and technology of interacting surfaces in relative motion including the subjects of friction, lubrication and wear.

*noun*, engineering  
Larousse Science

**tricuspid**

having three points or cusps, as a valve of the heart.

*noun*, anatomy  
Dorland Medical

**tricuspid valve**

one of the four valves of the human heart, situated between xx and yy

*noun*, anatomy  
Williams  
Notes: DFW TO CHECK

**triglyceride**

compound consisting of three molecules of fatty acid esterified to glycerol.

*noun*, chemistry  
Dorland Medical

**trigone**

1. triangular area.

*noun*, anatomy  
Dorland Medical

2. triangular area of interior of urinary bladder between the openings of the ureters and of the urethra.

*noun*, anatomy  
Larousse Science

**Tripartite Biocompatibility Guidance**

document that provides advice on the needs for biocompatibility testing of biomaterials and medical devices, agreed jointly between the regulatory authorities in the USA, Canada and the UK.

*noun*, regulatory affairs  
Williams

**-tripsy**

signifying crushing.

*suffix*, medicine  
Williams

**tris**

tris (2,3-dibromopropyl) phosphate.

*noun*, chemistry  
Dorland Medical

**tritium**

radioactive isotope of hydrogen of mass number 3.

*noun*, physics  
Larousse Science

**triton X-100**

iso-Octylphenoxyethoxyethanol, a non-ionic detergent which is commonly used to solubilise membrane proteins in their biologically active state.

*noun*, biology

Larousse Science

**triturate**

to rub to a fine powder, especially with respect to dental amalgam.

*verb*, dentistry  
Heinemann Dental

**trivalent**

having a valence of three.

*adjective*, chemistry  
Dorland Medical

**trocar**

sharp-pointed instrument equipped with a cannula, used to puncture the wall of a body cavity and withdraw fluid.

*noun*, medical device technology  
Dorland Medical

**trochanter**

broad, flat process on the femur, at the upper end of its lateral surface (greater t.) or a short conical process on the posterior border of the base of its neck (lesser t.).

*noun*, anatomy  
Dorland Medical

**-tropic**

signifying turning toward.

*suffix*, general  
Williams

**tropocollagen**

molecular unit of all forms of collagen; a helical structure of three polypeptides.

*noun*, biology  
Dorland Medical

**trypsin**

enzyme of the hydrolase class, secreted as trypsinogen by the pancreas and converted to the active form in the small intestine, that catalyses the cleavage of peptide linkages involving the carboxyl group of either lysine or arginine.

*noun*, biology  
Dorland Medical

**tryptophen Try, short form W.**

2-amino-3-indolepropanoic acid. An amino acid.

*noun*, chemistry  
Larousse Science

**tube**

hollow cylindrical organ or instrument.

*noun*, general  
Dorland Medical

**tuber**

swelling or protuberance.

*noun*, biology  
Dorland Medical

**tubercle**

any small, rounded mass produced by infection with *Mycobacterium tuberculosis*.

*noun*, biology  
Dorland Medical

**tulle gras**

dressing of gauze impregnated with soft paraffin.  
*noun*, medicine  
Black's Medical

**tumour**

neoplasm, a new growth of tissue in which cell multiplication is uncontrolled and progressive.  
*noun*, medicine  
Dorland Medical

**tumour marker**

biochemical substance indicative of neoplasia.  
*noun*, biology  
Dorland Medical

**tumour necrosis factor TNF.**

two related cytokines originally named for their cytotoxic effects on certain tumour cells but which also have immunoregulatory functions.  
*noun*, biology  
Roitt Immunology

**tumour suppressor gene**

normal gene that codes for a product that regulates the cell cycle so as to suppress cell division and growth.  
*noun*, genetics  
Larousse Science

**tumourigenesis** (tumorigenesis)

production of tumours.  
*noun*, medicine  
Dorland Medical

**tumourigenicity** *carcinogenicity*

ability or tendency to produce cancer.  
*noun*, medicine  
Larousse Science

**tungsten W.**

at. no. 74; a hard grey metal.  
*noun*, chemistry  
Larousse Science

**tungsten inert gas welding TIG.**

electric welding in which the tungsten electrode is not consumed and a filler rod supplies the metal to the joint which is protected from reaction by an inert gas, e.g. argon.  
*noun*, engineering  
Larousse Science

**tunica**

general term for a membrane or other structure covering or lining a body part or organ.  
*noun*, anatomy  
Dorland Medical

**tunica adventitia**

outer coat of various tubular structures.  
*noun*, anatomy  
Dorland Medical

**tunnel**

passageway of varying length through a solid body, completely enclosed except for the open ends, permitting entrance and exit.  
*noun*, general  
Dorland Medical

**turbidity**

1. property of a photographic emulsion whereby light is scattered by the silver halide grains in the immediate vicinity of the image  
*noun*, chemistry  
Larousse Science

**turbulence**

fluid flow in which the particle motion at any point varies rapidly in magnitude and direction.  
*noun*, engineering  
Larousse Science

**turbulent flow**

fluid flow in which the particle motion at any point varies rapidly in magnitude and direction.  
*noun*, physics  
Larousse Science

**twin**

one of two offspring produced in one pregnancy.  
*noun*, embryology  
Dorland Medical

**twin crystal**

crystal composed of two or more individuals, either in contact or intergrown, in a systematic crystallographic orientation with respect to one another.  
*noun*, chemistry  
Larousse Science

**tympanic**

of or pertaining to the tympanum.  
*adjective*, anatomy  
Dorland Medical

**tympanic membrane**

membrane enclosing the fenestra cochlearis.  
*noun*, anatomy  
Dorland Medical

**tymppanostomy tube**

implantable medical device that is intended for ventilation or drainage of the middle ear being inserted through the tympanic membrane to permit a free exchange of air between the outer ear and middle ear.  
*noun*, medical device technology  
CFR

**tymppanum**

tymppanic membrane or cavity.  
*noun*, anatomy  
Dorland Medical

**typology**

study of types; the science of classifying, as bacteria according to type.  
*noun*, biology  
Dorland Medical

**tyrosine Tyr, short form Y.**

2-amino-3-(4-hydroxyphenyl) propanoic acid.  
 $\text{OHCH}_6\text{HSUBSCRIPT}_7\text{CH}_2\text{CH(NHSUBSCRIPT}_2\text{)COOH}$ . An amino acid, an oxidation product of phenylalanine.  
*noun*, chemistry  
Larousse Science

**ulcer**

local defect, or excavation of the surface, of an

organ or tissue, produced by sloughing of necrotic inflammatory tissue.

*noun*, medicine  
Dorland Medical

**ulcerate**

to undergo ulceration.

*verb*, medicine  
Dorland Medical

**ulcerative keratitis** *corneal ulcer*

inflammation of the cornea with ulceration of the corneal epithelium, usually as a result of bacterial invasion of the cornea.

*noun*, ophthalmology  
Dorland Medical

**ulna**

the inner and larger bone of the forearm.

*noun*, anatomy  
Dorland Medical

**ulnar**

pertaining to the ulna or to the medial aspect of the arm as compared to the (lateral) radial aspect.

*adjective*, anatomy  
Dorland Medical

**ultimate load** *breaking load*

the load which, when steadily applied to a structural member, is just sufficient to break or rupture it.

*noun*, engineering  
McGraw-Hill Engineering

**ultimate tensile stress**

the highest load applied to a material in the course of a tensile test, divided by the original cross-sectional area.

*noun*, engineering  
Larousse Science

**ultra high molecular weight polyethylene**  
**UMHWPE.**

linear polyethylene with molecular mass of several million.

*noun*, polymer science  
Larousse Science

Notes: Extensively used for components of total joint prostheses.

**ultra violet stabiliser** (ultra violet stabilizer)

any substance that is a constituent of a material and serves to protect that material from degradation by ultra-violet energy by preferential absorption of that energy.

*noun*, polymer science  
Williams

**ultrafiltration**

1. separation of colloidal or molecular particles by filtration, under suction or pressure, through a colloidal filter or semi-permeable membrane.

*noun*, chemistry  
Larousse Science

2. process whereby plasma water flows through a membrane in response to a hydrostatic pressure gradient, dragging with it solute molecules at concentrations equal or lower to that prevailing in plasma.

*noun*, medicine

Biomedical Engineering Handbook

**ultramicrotome**

modified microtome developed for cutting ultra-thin sections for examination with the electron microscope.

*noun*, biology  
Larousse Science

**ultrasonic**

beyond the upper limit of perception by the human ear; relating to sound waves having a frequency of more than 20,000Hz.

*adjective*, physics  
Dorland Medical

**ultrasonic cleaning**

cleaning process used in conjunction with water or solvents and effective for small crevices, blind holes, etc.

*noun*, engineering  
Larousse Science

**ultrasonic degradation**

any degradation of a material that is caused by ultrasound.

*noun*, material science  
Williams

**ultrasonic testing**

method of testing for flaws in which an ultrasonic source is pressed against the part to be tested, using some form of gel to act as a sonic coupling to the surface, and sound is passed into the material.

*noun*, engineering  
Larousse Science

**ultrasonic welding**

solid-state process for bonding sheets of similar or dissimilar materials, usually with a lap joint.

*noun*, engineering  
Larousse Science

**ultrasonics**

study and application of ultrasonic sound and vibrations.

*noun*, physics  
Larousse Science

**ultrasound**

mechanical radiant energy of a frequency greater than 20,000 Hz.

*noun*, physics  
Dorland Medical

**ultrastructure**

structure beyond the resolution power of the light microscope.

*noun*, general  
Dorland Medical

**ultraviolet**

denoting electromagnetic radiation between violet light and X-rays, having wavelengths of 200 to 400 nanometers.

*adjective*, physics  
Dorland Medical

**ultraviolet absorber**

substance that, when used as the component of a material, has the ability to absorb energy in the

ultra-violet region of the spectrum, such that the material can utilise this energy to initiate a polymerisation or cross-linking process

*noun*, material science

Williams

#### **ultraviolet curing**

the process of polymerisation or cross-linking that is initiated by ultraviolet radiation.

*noun*, polymer science

Williams

#### **ultraviolet degradation**

ultraviolet radiation-initiated breakdown of polymers owing to photon absorption at chain defects, such as carbonyl groups in backbone chain.

*noun*, polymer science

Larousse Science

#### **ultraviolet spectroscopy**

method of detecting ultraviolet absorption by aromatic groups or conjugated bonds.

*noun*, chemistry

Larousse Science

#### **ultraviolet stabiliser**

a substance that, when used as a component of a material, has the ability to absorb energy in the ultra-violet region of the spectrum, such that the other components of the material are protected from any damaging effects of the radiation.

*noun*, polymer science

Williams

#### **umbilical cord**

structure connecting the foetus and placenta, and containing the vessels through which foetal blood passes to and from the placenta.

*noun*, medicine

Dorland Medical

#### **unipolar**

pertaining to mood disorders in which only depressive episodes occur.

*noun*, medicine

1. having a single pole or process, as a nerve cell.

*noun*, biology

Dorland Medical

#### **unit**

one package or vial of pre-measured powder component and one package or vial of pre-measured liquid component.

*noun*, polymer science

ASTM

1. a single thing.

*noun*, general

2. quantity assumed as a standard of measurement.

*noun*, general

Dorland Medical

#### **unit cell**

smallest group of atoms, ions, or molecules, whose repetition at regular intervals, in three dimensions, produces the lattice of a given crystal.

*noun*, chemistry

Larousse Science

#### **United States Pharmacopeia USP.**

legally recognised compendium of standards for drugs, published by the United States Pharmacopeial Convention, Inc., and revised periodically.

*noun*, pharmacology

Dorland Medical

Notes: It also includes assays and tests for determination of strength, quality, and purity.

#### **unnecessary repetition**

duplication of the same experiment without scientific need.

*noun*, biomaterials science

ISO

#### **unsaturated**

1. denoting compounds in which two or more atoms are united by double or triple bonds.

*adjective*, chemistry

2. not holding all of a solute which can be held in solution by the solvent.

*noun*, chemistry

Dorland Medical

#### **uraemia (uremia)**

excess of the nitrogenous end products of protein and amino acid metabolism in the blood.

*noun*, medicine

Dorland Medical

#### **urea**

chief nitrogenous end-product of protein metabolism.

*noun*, biology

Dorland Medical

#### **urease**

enzyme that catalyses the hydrolysis of urea to ammonia and carbon dioxide.

*noun*, biology

Dorland Medical

#### **uresis**

passage of urine; urination.

*noun*, biology

Dorland Medical

#### **ureter**

fibromuscular tube through which urine passes from kidney to bladder.

*noun*, anatomy

Dorland Medical

#### **ureteral stent**

a tube-like implanted device that is inserted into the ureter to provide ureteral rigidity and allow the passage of urine.

*noun*, medical device technology

CFR

Notes: Used in the treatment of ureteral injuries and ureteral obstruction.

#### **ureterectomy**

excision of a ureter.

*noun*, surgery

Dorland Medical

#### **ureteroplasty**

repair of a ureter.

*noun*, surgery

Dorland Medical

**ureteroscopy**

examination of the ureter by means of a fiberoptic endoscope (ureteroscope.)

*noun*, medicine  
Dorland Medical

**urethane group** *urethane linkage*

linkage (HNCOO-), typical of urethane polymers.

*noun*, polymer science  
Szycher's Biomaterials

**urethane linkage** *urethane group*

linkage (HNCOO-), typical of urethane polymers.

*noun*, polymer science  
Szycher's Biomaterials

**urethra**

membranous canal through which urine is discharged from the bladder to the exterior of the body.

*noun*, anatomy  
Dorland Medical

**urethral**

route of administration of a drug or device through the urethra.

*adjective*, pharmacology  
Szycher's Biomaterials

**urethritis**

inflammation of the urethra.

*noun*, medicine  
Dorland Medical

**urgency**

sudden compelling desire to urinate.

*noun*, medicine  
Dorland Medical

**uridine**

pyrimidine nucleoside containing uracil and ribose, a component of nucleic acid and its nucleosides involved in the biosynthesis of polysaccharides.

*noun*, biology  
Dorland Medical

**urinary catheter**

tubular structure that is placed with the proximal end in the urinary bladder that communicates with the exterior of the body, either via the urinary system itself or via a surgically created pathway in order to facilitate bladder emptying.

*noun*, medical device technology  
Williams

**urinary incontinence**

inability to control the voiding of urine.

*noun*, medicine  
Dorland Medical

**urinate**

to void urine.

*noun*, biology  
Dorland Medical

**urination**

discharge of urine from the bladder.

*noun*, biology  
Dorland Medical

**urine**

fluid excreted by the kidneys, stored in the bladder, and discharged through the urethra.

*noun*, biology  
Dorland Medical

**urodynamics**

study of urine flow.

*noun*, biology  
Larousse Science

**urokinase UK.**

enzyme in the urine of man and other mammals; it is elaborated by the parenchymal cells of the human kidney and functions as a plasminogen activator and is used as a therapeutic thrombolytic (fibrinolytic) agent.

*noun*, biology  
Dorland Medical

**urological catheter**

generic flexible tubular device that is inserted through the urethra and used to pass fluids to or from the urinary tract.

*noun*, medical device technology  
CFR

**urological stent**

cylindrical structure that is implanted within the urinary system with the intended function of reinforcing the ureter or urethra and maintaining or restoring patency.

*noun*, medical device technology  
Williams

**urology**

branch of medicine dealing with the urinary system in the female and genitourinary tract in the male.

*noun*, medicine  
Dorland Medical

**urticaria** *hives*

vascular reaction of the upper dermis marked by transient appearance of slightly elevated patches (wheals) which are redder or paler than the surrounding skin and often attended by severe itching.

*noun*, medicine  
Dorland Medical

**uter(o)-**

of the uterus.

*prefix*, anatomy  
Dorland Medical

**uteralgia**

pain in the uterus.

*noun*, medicine  
Dorland Medical

**uterine**

pertaining to the uterus.

*adjective*, anatomy  
Dorland Medical

**uterus**

hollow muscular organ in female mammals in which the fertilised ovum normally becomes embedded and in which the developing embryo and fetus is nourished.

*noun*, anatomy

Dorland Medical

**uvula**

pendant, fleshy mass, specifically the palatine uvula.

*noun*, anatomy  
Dorland Medical

**vacancy**

site unoccupied by an atom or ion in a crystal lattice.

*noun*, chemistry  
Larousse Science

**vaccination**

introduction of vaccine into the body to produce immunity.

*noun*, clinical practice  
Dorland Medical

**vaccine**

suspension of attenuated or killed micro-organisms (viruses, bacteria, or rickettsiae) or of antigenic proteins derived from them, administered for prevention, amelioration, or treatment of infectious diseases.

*noun*, clinical practice  
Dorland Medical

**vacuolation**

process of forming vacuoles.

*noun*, biology  
Dorland Medical

**vacuole**

space or cavity in the protoplasm of a cell.

*noun*, biology  
Dorland Medical

**vacuum forming**

method of forming plastic sheets or films into three dimensional shapes, in which the plastic sheet is clamped in a frame suspended above a mould, heated, drawn into contact with the mould by vacuum, and cooled in that position.

*noun*, engineering  
Szycher's Biomaterials

**vagina**

canal in the female, from the vulva to the cervix uteri.

*noun*, anatomy  
Dorland Medical

**vaginal**

route of administration of a drug or device through the vagina.

*adjective*, pharmacology  
Szycher's Biomaterials

**vaginal pessary**

device consisting of a removable structure placed in the vaginal cavity to support the pelvic organs in the treatment of uterine retroposition and gynaecological hernias.

*noun*, medicine  
Szycher's Medical Devices

**vaginal stent**

device used to enlarge the vagina by stretching, or to support the vagina and to hold a skin graft after

reconstructive surgery.

*noun*, medical device technology  
CFR

**vaginitis**

inflammation of the vagina.

*noun*, medicine  
Dorland Medical

**valence**

1. positive number that represent the number of bonds that each atom of an element makes in a chemical compound.

*noun*, chemistry

2. number of antigen binding sites possessed by an antibody molecule.

*noun*, biology  
Dorland Medical

**valgus**

bent out, twisted, denoting a deformity in which the angulation is away from the midline of the body.

*noun*, anatomy  
Dorland Medical

**validation**

1. confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use can be consistently fulfilled.

*noun*, regulatory affairs  
CFR

2. process of assessing whether the predictions or conclusions reached in a risk assessment are correct.

*noun*, regulatory affairs  
OECD

**valve**

1. membranous fold in a canal or passage that prevents backward flow of material passing through it.

*noun*, anatomy  
Dorland Medical

2. port through which an injection is performed to inflate a variable volume prosthesis.

*noun*, medical device technology  
ASTM

**valvular insufficiency**

dysfunction of a cardiac valve, with incomplete closure resulting in valvular regurgitation.

*noun*, medicine  
Dorland Medical

**valvular regurgitation**

backflow of blood through the orifices of the heart valves due to imperfect closing of the valves.

*noun*, medicine  
Dorland Medical

**van der Waals forces**

weak attractive forces between atoms or molecules which vary inversely as the sixth power of the interatomic or intermolecular distance, and are due to momentary dipoles caused by fluctuations in the electronic configuration of the atoms or molecules.

*noun*, chemistry  
Larousse Science

**vanadium V.**

a very hard, whitish metallic element, at. no. 23.

*noun*, chemistry  
Larousse Science

**variable**

element or factor that research is designed to study, either as an experimental intervention or a possible outcome (or factor affecting the outcome) of that intervention.

*noun*, statistics  
IRB Guidebook

**varicose**

of the nature of or pertaining to a varix.

*adjective*, medicine  
Dorland Medical

**varicose ulcer**

ulcer due to varicose veins.

*noun*, medicine  
Dorland Medical

**varicosity**

varix, or varicose vein.

*noun*, medicine  
Dorland Medical

**varix**

enlarged tortuous vein, artery, or lymphatic vessel.

*noun*, medicine  
Dorland Medical

**varnish**

solution of resin or resins, which, when painted on thinly, leaves a clear, hard coat over the surface treated.

*noun*, polymer science  
Heinemann Dental

**varus**

bent inward; denoting a deformity in which the angulation of the part is toward the midline of the body.

*noun*, anatomy  
Dorland Medical

**vas**

1. vessel.

*noun*, anatomy

2. blind tubule sometimes connected with the epididymus.

*noun*, anatomy  
Dorland Medical

**vas(o)-**

relating to a vessel; duct.

*adjective*, anatomy  
Dorland Medical

**vascular**

1. indicative of copious blood supply.

*adjective*, anatomy

2. pertaining to vessels, particularly blood vessels.

*adjective*, anatomy  
Dorland Medical

**vascular clip**

implantable device designed to occlude, by compression, blood flow in small blood vessels.

*noun*, medical device technology

Szycher's Medical Devices

**vascular graft**

any transplanted/ transposed tissue that is used to replace or by-pass a part of the vascular system.

*noun*, surgery

Williams

Notes: This term is widely but incorrectly used to describe any device that replaces or by-passes part of the vascular system.

In line with the definition of graft, the use of this term for synthetic blood vessel replacements is not recommended.

**vascular prosthesis**

implantable device, made of synthetic materials that is intended to replace or by-pass a diseased segment of the vascular system.

*noun*, medical device technology

Williams

**vascularisation** (vascularization)

formation of new blood vessels in tissues.

*noun*, biology

Dorland Medical

**vasculature**

vascular system of the body, or any part of it.

*noun*, anatomy

Dorland Medical

**vasectomy**

excision of the vas (ductus) deferens, or a portion of it.

*noun*, surgery

Dorland Medical

**vasoactive**

exerting an effect on the calibre of blood vessels.

*adjective*, biology

Dorland Medical

**vasoconstriction**

decrease in the calibre of blood vessels.

*noun*, medicine

Dorland Medical

**vasodepression**

decrease in vascular resistance with hypotension.

*noun*, medicine

Dorland Medical

**vasodilatation**

state of increased calibre of the blood vessels.

*noun*, medicine

Dorland Medical

**vasodilation**

the process by which an increase in the calibre of blood vessels is produced.

*noun*, medicine

Dorland Medical

**vasodilator**

agent that causes dilatation of blood vessels.

*noun*, medicine

Dorland Medical

**vector**

1. quantity possessing magnitude, direction, and sense (positivity or negativity).

*noun*, general

2. carrier, especially the animal (usually an arthropod) that transfers an infective agent from

one host to another.

*noun*, biology  
Dorland Medical

**vegetative**

1. concerned with growth and nutrition.  
*adjective*, biology
2. functioning involuntarily or unconsciously.  
*adjective*, biology
3. resting; denoting the portion of a cell cycle during which the cell is not replicating.  
*adjective*, biology  
Dorland Medical

**vehicle**

excipient.  
*noun*, pharmacology  
Dorland Medical

**vein**

vessel in which blood flows toward the heart, in the systemic circulation carrying blood that has given up most of its oxygen.  
*noun*, anatomy  
Dorland Medical

**velopharyngeal**

pertaining to the soft palate and pharynx.  
*adjective*, anatomy  
Dorland Medical

**ven(o)-**

relating to a vein.  
*prefix*, anatomy  
Dorland Medical

**vena cava clip**

implantable device designed to partially occlude the vena cava for the purpose of inhibiting the flow of thromboemboli through that vessel.  
*noun*, medical device technology  
Szycher's Medical Devices

**vena cava ring test**

test to determine the thrombogenicity of a material that involves the implantation of an annulus of the material in the vena cava of an experimental animal and the determination of the extent of occlusion of the ring after a specified period of time.  
*noun*, medical device technology  
Williams

**veneer**

any material used to cover artificial tooth crowns to match with the natural teeth, or to replace the natural tooth surface if it is damaged or discoloured.  
*noun*, dentistry  
Heinemann Dental

**venous insufficiency**

inadequacy of the venous valves, with impaired venous drainage and associated oedema.  
*noun*, medicine  
Dorland Medical

**venous stripping**

process of excision of large veins and incompetent tributaries by subcutaneous dissection.  
*noun*, surgery  
Dorland Medical

**venous valvuloplasty**

surgical repair of the vein valves.  
*noun*, surgery  
Dorland Medical

**ventral**

pertaining to the abdomen or to any venter.  
*adjective*, anatomy  
Dorland Medical

**ventricle**

small cavity or chamber, as in the brain or heart.  
*noun*, anatomy  
Dorland Medical

**ventricular tachycardia**

abnormally rapid ventricular rhythm with aberrant ventricular excitation, usually above 150 per minute.  
*noun*, medicine  
Dorland Medical

**venule**

any of the small vessels that collect blood from the capillary plexuses and join to form veins.  
*noun*, anatomy  
Dorland Medical

**verification**

confirmation by examination and provision of objective evidence that specified requirements have been fulfilled.  
*noun*, regulatory affairs  
CFR

**vertebra**

any of the 33 bones of the vertebrae column, comprising 7 cervical, 12 thoracic, 5 lumbar, 5 sacral, and 4 coccygeal vertebrae.  
*noun*, anatomy  
Dorland Medical

**vertebrate**

any animal having a spinal column (vertebrae).  
*noun*, anatomy  
Dorland Medical

**vesic(o)-**

signifying a blister; bladder.  
*prefix*, anatomy  
Dorland Medical

**vesicle**

small bladder or sac containing liquid.  
*noun*, anatomy  
Dorland Medical

**vessel**

any channel for carrying a fluid, such as blood or lymph.  
*noun*, anatomy  
Dorland Medical

**vestibule**

space or cavity at the entrance to a canal.  
*noun*, anatomy  
Dorland Medical

**vestibule of the ear**

oval cavity in the inner ear leading to the cochlea.  
*noun*, anatomy

Heinemann Dental

**vestibule of the mouth**

space between the lips and cheek and the gums and teeth.

*noun*, anatomy

Heinemann Dental

**vestibuloplasty**

surgical modification of gingival-mucous membrane relationships in the vestibule of the mouth.

*noun*, surgery

Dorland Medical

**viable**

capable of living and developing normally.

*noun*, biology

Larousse Science

**Vickers hardness**

hardness of a metal, quantified by the experimental determination of the resistance to indentation by a diamond pyramidal shape under standard conditions.

*noun*, engineering

Williams

**Vickers hardness test**

a common method of determining the hardness of metals by indenting them with a diamond pyramid under a specified load and measuring the size of the impression produced.

*noun*, engineering

Larousse Science

**vimentin**

intermediate filament protein characteristic of fibroblasts.

*noun*, biology

Larousse Science

**vinyl**

relating to the unsaturated group CH<sub>2</sub>:CH-, which is the basis for all vinyl plastics.

*adjective*, chemistry

Szycher's Biomaterials

**vinyl chloride plastics**

plastics based on polymers of vinyl chloride or copolymers of vinyl chloride with other monomers, the vinyl chloride being the co-monomer of the highest concentration by mass.

*noun*, polymer science

ASTM

**viral inactivation**

any process that is applied to a tissue or other product of an animal that is intended for use in the medical or surgical treatment of patients which inactivates or destroys any viruses present in that tissue.

*noun*, medical device technology

Williams

**virtual patient**

*noun*, medical device technology

Notes: NEED DEF.

**virtual surgery**

*noun*, medical device technology

Notes: NEED DEF.

**virulence**

degree of pathogenicity of a micro-organism as indicated by the severity of disease produced and the ability to invade the tissues of the host.

*noun*, biology

Dorland Medical

**virus**

particulate infectious agent smaller than accepted bacterial forms, invisible by light microscopy, incapable of propagation in inanimate media and multiplying only in susceptible living cells, in which specific cytopathogenic changes frequently occur.

*noun*, biology

Larousse Science

**viscoelasticity**

time-dependent property of certain materials to respond to stress as if they were a combination of purely elastic solids and viscous liquids.

*noun*, material science

Szycher's Biomaterials

**viscometer**

instrument for measuring viscosity.

*noun*, physics

Larousse Science

**viscosity**

property of resistance of flow exhibited with the body of the material.

*noun*, engineering

ASTM

**viscus**

any large interior organ in any of the three great body cavities, especially those in the abdomen.

*noun*, anatomy

Dorland Medical

**vision**

sense by which objects in the external environment are perceived by means of the light they give off or reflect.

*noun*, biology

Dorland Medical

**visual acuity**

term used to express the spatial resolving power of the eye.

*noun*, ophthalmology

Larousse Science

**Vitallium**

trademark for a cobalt-chromium alloy used for cast dentures and surgical appliances.

*noun*, biomaterials science

Dorland Medical

**vitamin**

any of a group of unrelated organic substances occurring in many foods in small amounts and necessary in trace amounts for the normal metabolic functioning of the body.

*noun*, chemistry

Dorland Medical

**Vitamin C** *ascorbic acid*

water-soluble vitamin found in many vegetables and fruits.

*noun*, biology

Larousse Science

Notes: NEED TO DELETE THIS ENTRY IN PAGEMAKER.

**vitreoretinal**

of or pertaining to the vitreous and retina.

*adjective*, ophthalmology

Dorland Medical

**vitreoretinal surgery**

interventional procedure that involves the vitreous humour and/or the retina.

*noun*, ophthalmology

Williams

Notes: Involves in particular the treatment of the detached retina.

**vitreous**

1. a vitreous body.

*noun*, biology

2. glasslike or hyaline.

*adjective*, biology

Dorland Medical

**vitreous carbon**

form of solid carbon, either pure or with minor alloying additions that exists in the glassy state.

*noun*, material science

Williams

**vitreous humor**

fluid portion of the vitreous body.

*noun*, ophthalmology

Dorland Medical

**vitrification**

solidification process in which an amorphous (glasslike) solid, devoid of crystals, is formed.

*noun*, material science

Biomedical Engineering Handbook

**vitronectin**

plasma glycoprotein that mediates the inflammatory and repair reactions occurring at sites of tissue injury.

*noun*, biology

Dorland Medical

**vivisection**

surgical procedures performed upon a living animal for purpose of physiological or pathological investigation.

*noun*, biology

Dorland Medical

**void**

1. in a solid plastic, an unfilled space of such size that it scatters radiant energy such as light.

*noun*, polymer science

2. a cavity unintentionally formed in a cellular material and substantially larger than the characteristic individual cells.

*noun*, material science

ASTM

**voltaic cell** *galvanic cell*

device that produces an emf. as a result of chemical reactions that take place within it.

*noun*, physics

Oxford Science

**voluntary**

free of coercion, duress, or undue inducement.

*noun*, medicine

IRB Guidebook

Notes: Used in the research context to refer to a subject's decision to participate (or to continue to participate) in a research activity.

**vortex**

whirled or spiral arrangement or pattern, as of muscle fibres, or of the ridges or hairs of the skin.

*noun*, general

Dorland Medical

**Vroman effect**

phenomenon which describes the relationship between the relative amounts of proteins adsorbed on a materials surface and the concentration of the protein in the solution as a function of time.

*noun*, biomaterials science

Williams

**vulcanisation** (vulcanization)

treatment of rubber with sulphur or sulphur compounds to produce cross-links between the polymer chains, resulting in a change in the physical properties of the rubber.

*noun*, polymer science

Larousse Science

**vulcanite**

thermo-hardening material produced by heating raw rubber with sulphur; the degree of hardness depends on the amount of sulphur used.

*noun*, dentistry

Heinemann Dental

**vulgaris**

ordinary, common.

*noun*, medicine

Dorland Medical

**vulva**

external genital organs of the female, including the mons pubis, labia majora and minora, clitoris, and vestibule of the vagina.

*noun*, anatomy

Dorland Medical

**waist**

portion of the body between the thorax and the hips.

*noun*, anatomy

Dorland Medical

**wall**

structure bounding or limiting a space or a definitive mass of material.

*noun*, anatomy

Dorland Medical

**wart**

hyperplastic epidermal lesion with a horny surface, caused by a human papillomavirus.

*noun*, medicine

Dorland Medical

**washed red cells**

red cell suspension obtained from one unit of whole blood after removal of plasma and washing in an

isotonic solution.  
*noun*, biology  
ISO

**water absorption**

amount of water absorbed by a material when immersed in water for a stipulated period of time.  
*noun*, material science  
Szycher's Biomaterials

**water permeability**

ability of a material to allow the passage of water through it, usually expressed quantitatively in terms of diffusion rates.  
*noun*, material science  
Williams

**water vapor transmission WVT.**

amount of water vapour diffusing through a given area of a plastic sheet, film or membrane in a given time.  
*noun*, polymer science  
Szycher's Biomaterials

**wave**

uniformly advancing disturbance in which the parts moved undergo a double oscillation.  
*noun*, biology  
Dorland Medical

**wave-length**

distance between the top of one wave and the identical phase of the succeeding one.  
*noun*, physics  
Dorland Medical

**wax**

plastic substance obtained from plants or from deposits of insects.  
*noun*, material science  
Heinemann Dental

**wax carver**

specialty designed type of carver with a blunt blade used for fashioning wax, and capable of being heated for this use.  
*noun*, dentistry  
Heinemann Dental

**waxing up**

construction and contouring of a wax base plate for an artificial denture, and the temporary attachment of teeth to it with wax.  
*noun*, dentistry  
Heinemann Dental

**weal**

reddish, raised and circumscribed lesion on the skin, generally caused by a blow or bite.  
*noun*, medicine  
Heinemann Dental

**wear**

progressive loss of material as a result of the oscillating motion against a counterface under load.  
*noun*, engineering  
ASTM

**wear coefficient**

any parameter that defines the propensity of a

combination of materials to undergo wear and which relates the amount of wear (either volume or weight or depth) to the characteristics of the materials and the mechanical conditions.  
*noun*, engineering  
Williams

**wear debris**

particulate matter which accumulates when two materials are in sliding contact.  
*noun*, engineering  
Williams

**wear rate**

volume of material lost due to wear per unit of sliding distance.  
*noun*, engineering  
ASTM

**weft**

transverse threads or fibres in a woven fabric.  
*noun*, polymer science  
Szycher's Biomaterials

**weight average molecular weight Mw.**

sum of the total weight of molecules of each size, multiplied by their respective weights, and divided by the total weight of all molecules.  
*noun*, polymer science  
Szycher's Biomaterials

**weld**

1. to join together two components through fusion at the interface, achieved by the application of physical energy such as heat or ultrasound.  
*verb*, engineering  
2. joint produced by fusion of two components.  
*noun*, engineering  
Williams  
Notes: With metal-metal combinations welding is usually achieved by localised melting with or without the presence of a weld filler metal; with plastics it is usually achieved ultrasonically.

**welding**

joining pieces of suitable materials or plastics without the use of an adhesive, usually by raising the temperature at the joint so that the pieces may be united by fusing or by forging or under pressure.  
*noun*, engineering  
Larousse Science

**welding rod**

filler metal in the form of a wire or rod.  
*noun*, engineering  
Larousse Science

**weldment**

welded assembly.  
*noun*, engineering  
Larousse Science

**western blotting**

technique for the analysis and identification of protein antigens.  
*noun*, immunology  
Larousse Science

**wettability**

extent to which a solid is wetted by a liquid.  
*noun*, physics

Larousse Science

**wetting**

tendency of a liquid to spread over another surface.

*noun*, material science

Szycher's Biomaterials

**white corpuscle**

leucocyte.

*noun*, medicine

Dorland Medical

**white gold**

an alloy of gold with palladium, or with silver, platinum or nickel, these metals giving it a white or silvery appearance.

*noun*, dentistry

Heinemann Dental

**whitlockite**

form of calcium phosphate; GERMANB -

whitlockite is  $3\text{CaO} \cdot \text{P}_2\text{O}_5$ .

*noun*, chemistry

Williams

**whole body inflammation**

term used to define the state in an individual who has undergone extracorporeal circulation and which has caused a degree of complement activation that results in clinically recognisable symptoms.

*noun*, medicine

Williams

**whole body monitor**

assembly of large scintillation detectors, heavily shielded against background radiation, used to identify and measure the gamma radiation emitted by the human body.

*noun*, medical device technology

Larousse Science

**wild-type strain**

that used as a standard for a given species or variety of organism, usually assumed to be the one found in nature.

*noun*, biology

Dorland Medical

**Wilson's disease**

inherited, progressive disorder of copper metabolism, with accumulation of copper in liver, brain, kidney, cornea, and other tissues.

*noun*, medicine

Dorland Medical

**wire**

fine, flexible metal rods or metal thread used in surgery and in dentistry.

*noun*, medical device technology

Heinemann Dental

**Wolf's Law**

principle that the structure of bones is controlled, in part, by the stress fields applied to that bone.

*noun*, biology

Williams

**wollastonite**

triclinic silicate of calcium,  $\text{CaSiO}_3$ .

*noun*, chemistry

Larousse Science

**work hardening**

increase in strength and hardness produced by plastic deformation of metals at temperatures below about  $0.5T_{\text{SUBSCRIPT}m}$ , that results from increasing numbers of dislocations and their entanglement and is accompanied by reduction in ductility.

*noun*, metallurgy

Larousse Science

**work-up**

procedures done to arrive at a diagnosis, including history taking, laboratory tests, X-rays, and so on.

*noun*, clinical practice

Dorland Medical

**wound**

bodily injury caused by physical means, with disruption of the normal continuity of structures.

*noun*, medicine

Dorland Medical

**wound closure**

any process in which a medical device or biomaterial is used to produce the re-adaptation of the cut surfaces of a traumatised area of tissue, especially of soft tissue.

*noun*, surgery

Williams

Notes: This typically involves sutures, clips or adhesives.

**wound dehiscence**

separation of the layers of a surgical wound.

*noun*, surgery

Dorland Medical

**wound healing**

process by which physically damaged tissue is repaired, either spontaneously and unassisted or with medical intervention, and which involves both inflammation and repair processes.

*noun*, medicine

Williams

**woven bone**

prenatal immature form of spongy bone, having connected vascular spaces with osteocollagenous fibres forming a non-lamellated network round them.

*noun*, biology

Heinemann Dental

**wrinkle**

uneven texture on a surface.

*noun*, general

Larousse Science

**wrist**

region of the joint between the forearm and hand.

*noun*, anatomy

Dorland Medical

**wrist-drop**

condition resulting from paralysis of the extensor muscles of the hand and fingers.

*noun*, medicine

Dorland Medical

**wrought**

condition of an alloy after it has been formed by a mechanical process such as rolling, forging or extrusion.

*adjective*, metallurgy  
Williams

**X-ray crystallography**

study of crystalline structures using diffraction of X-rays.

*noun*, physics  
Larousse Science

**X-ray diffractometer**

instrument containing a radiation detector used to record the X-ray diffraction patterns of crystals, powders or molecules.

*noun*, physics  
Larousse Science

**X-ray photoelectron spectroscopy** *electron spectroscopy for chemical analysis XPS.*

method of surface analysis in which X-rays are focussed on the specimen and the emission of inner shell electrons is characterised in order to give information about the surface atoms

*noun*, chemistry  
Williams

**X-rays** *roentgen rays*

electromagnetic vibrations of short wavelengths (approximately 0.01 to 10nm) or corresponding quanta that are produced when electrons moving at high velocity impinge on various substances.

*noun*, physics  
Dorland Medical

**xanth(o)-**

signifying yellow.  
*prefix*, general  
Dorland Medical

**xanthine**

purine base found in most body tissues and fluids, certain plants, and some urinary calculi.

*noun*, chemistry  
Dorland Medical

**xen(o)-**

indicating strange or foreign.  
*prefix*, general  
Dorland Medical

**xenobiotic**

relating to any foreign body introduced into a living host.

*adjective*, toxicology  
Williams

**xenogeneic**

genetic differences between species.  
*adjective*, immunology  
Roitt Immunology

**xenogenous**

caused by a foreign body, or originating outside the organism.

*adjective*, medicine  
Dorland Medical

**xenograft** *heterograft*

graft taken from an individual of a different species

to the recipient.

*noun*, surgery  
ESB Consensus Conference I

**xer(o)-**

denoting dry, dryness.  
*prefix*, general  
Dorland Medical

**xeroderma**

mild form of ichthyosis, marked by a dry, rough, discoloured state of the skin.

*noun*, medicine  
Dorland Medical

**xerostomia**

dryness of the mouth due to salivary gland dysfunction.

*noun*, medicine  
Dorland Medical

**yarn**

geometric collection of fibres laid or twisted together, ready for the production of textiles, which are spun or woven from these yarns.

*noun*, polymer science  
Szycher's Biomaterials

**yeast**

unicellular fungus reproducing asexually by budding or division.

*noun*, biology  
Larousse Science

**yield point**

stress at which a substantial amount of plastic deformation starts to take place under constant or reduced load.

*noun*, engineering  
Larousse Science

**yield stress**

stress at the onset of plastic deformation determined from the yield point or from a defined amount plastic strain called the proof stress.

*noun*, engineering  
Larousse Science

**Young's Modulus** *modulus of elasticity*

ratio of stress to tensile strain below the proportional limit.

*noun*, engineering  
Szycher's Biomaterials

**yttria**

oxide of yttrium.  
*noun*, material science  
Williams

**yttria-stabilised zirconia YSZ.**

form of zirconia in which the xxx phase is stabilised at room temperature by the presence of yttria for the purpose of transformation toughening.

*noun*, material science  
Williams

Notes: DFW to PROVIDE XXX

**yttrium Y.**

metallic element usually classed with the rare earths because of its chemical resemblance to

them, at. no. 39.  
*noun*, chemistry  
Larousse Science

**zero order**

term used to describe a process which is independent of time.

*adjective*, general  
Williams

Notes: Typically used to describe the release of a drug from a matrix where the rate of release does not vary with time.

**Zeta potential**

potential difference between surface of a solid particle immersed in aqueous or conducting liquid and the fully dissociated ionic concentration in the body of the liquid.

*noun*, chemistry  
Larousse Science

**ziegler catalysts**

large family of catalysts made by reacting a compound of a transition metal chosen from groups IV through VIII of the Periodic Table with an alkyl, hydride or other compound of a metal from groups I through III.

*noun*, polymer science  
Szycher's Biomaterials

**Ziegler-Natta catalyst**

catalyst, discovered by Ziegler, which induces specific steric orientation naturally used for organic polymerisation, such as in the polymerisation of ethylene.

*noun*, polymer science  
Larousse Science

**zinc Zn.**

hard white metallic element with a bluish tinge, at. no. 30.

*noun*, chemistry  
Larousse Science

**zinc oxide-eugenol dental cement**

zinc oxide-Eugene mixture intended to serve as a temporary tooth filling or as a base cement to affix a temporary tooth filling, to affix dental devices such as crowns or bridges, or to be applied to a tooth to protect the tooth pulp.

*noun*, dentistry  
CFR

**zirconia**

zirconium (IV) oxide,  $ZrO_2$ .

*noun*, chemistry  
Larousse Science

**zirconium Zr.**

metallic element, at. no.40.

*noun*, chemistry  
Larousse Science

**zone**

encircling region or area; by extension, any area with specific characteristics or boundary.

*noun*, general  
Dorland Medical

**zoonosis**

disease of animals transmissible to man.

*noun*, biology

Dorland Medical

**zwitterion**

ion that has both positive and negative regions of charge.

*noun*, chemistry  
Dorland Medical

**zygoma**

zygomatic process of the temporal bone.

*noun*, anatomy  
Dorland Medical

**zygomatic arch**

arch formed by the zygomatic bone and the zygomatic process of the maxilla and the temporal bone.

*noun*, anatomy  
Heinemann Dental

**zygomatic process**

projection from the frontal bone, temporal bone, and maxilla, by which each articulates with the zygomatic bone.

*noun*, anatomy  
Dorland Medical

**zymogen**

inert precursor of many active proteins and degradative enzymes.

*noun*, biology  
Larousse Science

**zymosan**

cell wall fraction of yeast which activates the alternative complement pathway, and thus binds C3b.

*noun*, immunology  
Larousse Science