

## VOCABULARY

**3Rs principle:** The principles of Russell and Burch that call, where possible, for the replacement of laboratory animals with tissue culture or mathematical model alternatives, the refinement of laboratory procedures to minimize pain or stress to the research animals, and the reduction of the number of animals used in experimental procedures.

**Acquired immunity:** Immunity to a foreign substance which comes about as a result of the animal's initial exposure to the substance (Also known as active immunity).

**Acute:** Having a rapid onset and following a short but severe course.

**Acute toxicity:** The short-term effects of a one-time exposure to a chemical substance.

**AIDS:** A disease of the immune system characterized by increased susceptibility to opportunistic infections, as pneumocystis carinii pneumonia and candidiasis, to certain cancers, as Kaposi's sarcoma, and to neurological disorders: caused by a retrovirus and transmitted chiefly through blood or blood products that enter the body's bloodstream, especially by sexual contact or contaminated hypodermic needles.

**Allergy:** Hypersensitivity to certain substances, such as pollens, foods, or microorganisms.

**Alzheimer's disease:** A progressive form of presenile dementia that is similar to senile dementia except that it usually starts in the 40s or 50s; first symptoms are impaired memory which is followed by impaired thought and speech and finally complete helplessness.

**Alternative:** A method that either eliminates the need for a whole animal (replacement alternative), substantially decreases the number of whole animals used for a particular procedure (reduction alternative), or improves the design and/or efficiency of a test, thereby lessening the distress or discomfort experienced by laboratory animals (refinement alternative).

**Analgesia:** Alleviation of pain without inducing unconsciousness.

**Anemia:** A condition in which the skin and mucous membranes appear pale. The condition is usually associated with excess blood loss or an abnormally low number of red blood cells.



**Anesthesia:** Elimination of pain by inducing unconsciousness or by blocking nerve sensation in an area of the body.

**Animal models:** In biomedical research, an animal whose structural or functional similarity to humans or other animals makes it useful in the study of human or animal diseases.

**Animal use protocol:** A detailed written description of the procedures involving the use of animals in a research project.

**Antibiotic:** A type of drug that kills or prevents the reproduction of pathogenic microorganisms on or in animals.

**Antibodies:** Proteins that are produced by lymphocytes in response to exposure to specific foreign chemicals, or antigens. Bacteria, viruses, plant pollen and toxins (like tetanus) are all types of antigens which can produce an antibody response. In simple terms, antigen X stimulates the production of anti-X antibody; antigen Y stimulates the production of anti-Y antibody, and so on. Anti-X antibody reacts with antigen X but not with antigen Y. The antibodies produced by the injection of most antigens results in the production of multiple antibodies (called polyclonal antibodies) to that antigen. This is because antigens contain multiple, unique areas on their surface which stimulate the production of different antibodies.

**Anticoagulants:** Drugs that inhibit action of blood clotting factors. A substance, such as EDTA, sodium citrate, or heparin, that is added to blood samples to prevent clotting, thus allowing the blood to be separated into its liquid and solid components.

**Antigen:** A microorganism or other foreign substance or protein, such as bee venom or dander.

**Anxiety:** Distress or uneasiness of mind caused by fear of danger or misfortune.

**Arteriovenous shunt:** A device that allows patients with kidney failure to be connected to dialysis machines for long-term treatment.

**Arthritis:** Acute or chronic inflammation of a joint, often accompanied by pain and structural changes and having diverse causes, as infection, crystal deposition, or injury.



**Asthma:** A chronic respiratory disease, often arising from allergies, that is characterized by sudden recurring attacks of labored breathing, chest constriction, and coughing.

**Atherosclerosis:** Hardening of the arteries.

**Bacterial endocarditis:** A bacterial infection of the inner lining of the heart, most often of the heart valves, characterized by fever, enlarged spleen, and heart murmur.

**Bacterial infection:** An infection caused by bacteria. The growth of many disease-causing bacteria can be halted by the use of antibiotics.

**Barrier:** A system of housing research animals that keeps outside contaminants from entering the cages, animal rooms, or the entire facility and likewise prevents contaminants generated inside the system from leaving.

**Beriberi:** A disease of the peripheral nerves caused by a deficiency of vitamin B1, characterized by pain in and paralysis of the extremities, and severe emaciation or swelling of the body.

**Biochemistry:** The study of the chemical reactions that occur in living things.

**Biohazard:** A biological agent, such as an infectious microorganism, or a condition that constitutes a threat to humans or animals.

**Biomedical research:** The search for ways to heal living organisms such as humans and other animals.

**Biotechnology:** The use of biological processes to manufacture products.

**Bone marrow transplantation:** A technique used to enhance or restore a person's immune response or supply of blood cells or to replace diseased or destroyed bone marrow with normally functioning bone marrow. The technique involves the removal of bone marrow from a donor and transplantation of it to a patient.

**Booster immunization:** A repeated vaccination against a given pathogen with the goal of maintaining or increasing the level of immune response against the pathogen.



**Bronchitis:** Acute or chronic inflammation of the membrane lining of the bronchial tubes, caused by respiratory infection or exposure to bronchial irritants, as cigarette smoke.

**Cancer:** Unregulated, disorganized proliferation of cells which often grow into a tumor.

**Carcinogen:** A product or chemical that can either cause or promote cancer.

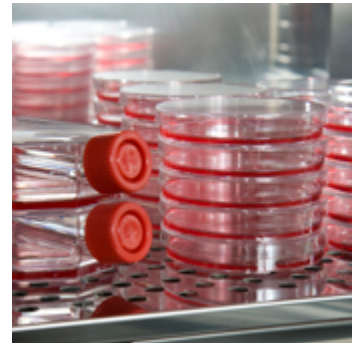
**Cardiac pacemaker:** An electronic device implanted beneath the skin for providing a normal heartbeat by electrical stimulation of the heart muscle, used in certain heart conditions.

**Cardiology:** The study of the heart and its functions in health and disease.

**Cataracts:** An opacity of the lens of the eye or the membrane that covers it, causing impairment of vision or blindness.

**Catheterization:** A small diameter flexible rubber or plastic tube used to cannulate a body cavity, duct, or vessel. Caudal: A descriptive anatomical term meaning toward the rear part of the body or tail.

**Cell cultures:** Groups of cells with similar functions (usually from animals or humans) that live and multiply in laboratory dishes.



**Cerebral palsy:** A disorder caused by damage to the brain, usually before or during birth.

**Chemistry:** The interaction of molecules and recombination of their atoms to form various substances.

**Chemotherapy:** The treatment of disease by means of chemicals that have a specific toxic effect upon the disease-producing microorganisms or that selectively destroy cancerous tissue.

**Cholesterol:** A white soapy substance found in the tissues of the body and in certain foods, such as animal fats, oils, and egg yolks. Cholesterol has been linked to heart disease and atherosclerosis. (It collects on the walls of arteries and interferes with the flow of blood.) High levels of cholesterol in the blood are considered to be unhealthy.

**Chromosome:** Paired structures located in the nuclei of all animal cells, which bear the genes.

**Chronic:** Lasting for a long period of time or marked by frequent recurrence.

**Chronic toxicity:** The effects of repeated, long-term exposure to a substance.

**Cirrhosis:** A chronic disease of the liver characterized by the replacement of normal tissue with scar tissue and the loss of functional liver cells.

**Clinical trials:** Testing of new medicines or products on human volunteers after they've been tested on animals but before they are offered to the public. These tests allow scientists to be absolutely sure their product has no harmful effects.



**Computer modeling:** Tests done on a computer to try to predict the effects a medicine or product will have on a living person or animal. These studies may provide some answers, but cannot tell the researchers how an ingredient will react within living tissue.

**Congenital:** A disease or anomaly with which a person or animal is born, one that is not necessarily genetic in nature.

**Consciousness:** Being awake; awareness of one's own existence, sensations, thoughts, surroundings, etc.

**Consumer products:** Stuff you buy at the store

**Control group:** A group not subjected to the experimental treatment, so as to have a standard against which the outcome in the experimental group can be compared.

**Conventional:** A method of housing research animals in which no special precautions are taken to prevent the introduction of disease into the colony.

**Convulsion:** An intense, sudden, involuntary muscular contraction.

**Coronary:** Of or pertaining to the human heart

**CPR:** Cardiopulmonary resuscitation; emergency procedure for reviving heart and lung function, involving special physical techniques and often the use of electrical and mechanical equipment.

**Culture:** Growth of living cells or microorganisms in a controlled artificial environment.



**Cystic fibrosis:** The most common congenital disease; the child's lungs and intestines and pancreas become clogged with thick mucus; caused by defect in a single gene; no cure is known.

**Cytotoxic:** The ability of a substance to destroy cells.

**Data:** Facts; information

**Dependent variable:** The event studied and expected to change when the independent variable is changed

**Depression:** A condition of general emotional dejection and withdrawal; sadness greater and more prolonged than that warranted by any objective reason.

**Detoxification:** Metabolic breakdown of a drug or chemical; usually occurs in the liver or kidneys.

**Diabetes mellitus:** (link to diabetes) A disease in which the animal cannot regulate its level of blood glucose. It is usually caused by damage to the islet cells of the pancreas.

**Diphtheria:** An acute contagious disease marked by formation of membranes in the throat and other air passages.

**DNA:** Determines hereditary characteristics. Acronym for deoxyribonucleic acid, which is the basic genetic material of living organisms.

**Down syndrome:** A genetic disorder, associated with the presence of an extra chromosome 21, characterized by mild to severe mental retardation, weak muscle tone, a low nasal bridge, and epicanthic folds at the eyelids.



**Draize Test:** An acute test study to assess the toxicity of products placed in contact with animal tissue to evaluate local tissue irritation.

**Edema:** An accumulation of an excessive amount of watery fluid in cells, tissues, or body cavities.

**Embryonic stage:** An organism in its early stages of development, especially before it has reached a distinctively recognizable form.

**Endostatin:** A naturally occurring protein, collagen 18, that interferes with the growth of new blood vessels: investigated for use as an anticancer drug.

**Enrichment:** A method of providing animals with the opportunity to behave as they do in the wild, playing, foraging, grooming, and interacting in other ways with one another.

**Epilepsy:** A brain disorder that causes unpredictable, uncontrolled seizures.

**Ether:** A colorless volatile highly inflammable liquid formerly used as an inhalation anesthetic

**Ethology:** The scientific study of animal behavior.

**Euthanasia:** Intentional induction of painless death. To euthanize an animal means to induce death in a way that does not cause unnecessary pain, discomfort, or fear. The American Veterinary Medical Association publishes euthanasia methods considered acceptable.

**Experimental group:** A group of subjects that are exposed to the variable of a control experiment.

**Fertility:** The ability to produce offspring.

**Fetus:** The young of an animal in the womb or egg, especially in the later stages of development when the body structures are in the recognizable form of its kind.

**Fragrance:** Any natural or synthetic substance or substances used solely to impart an odor to a cosmetic product.

**Fragrance-free\*:** Products so labeled may still contain small amounts of fragrances to mask the fatty odor of soap or other unpleasant odors.

**Gene therapy:** A method of correcting defective genes as a means of curing a genetic disease.

**Genetic manipulation:** Any alteration of genetic material, as in agriculture, to make them capable of producing new substances or performing new functions

**Genome:** The hereditary information of an organism that is encoded in its DNA (or RNA in some viruses)





**Glaucoma:** A disease of the eye marked by increased fluid pressure in the eyeball. Glaucoma can damage the optic nerve and may result in blindness if not treated. Surgery may be required for severe cases.

**GLPs (Good Laboratory Practices):** A set of regulations that applies to animal and non-animal research and safety studies funded or reviewed by the Food and Drug Administration (FDA).

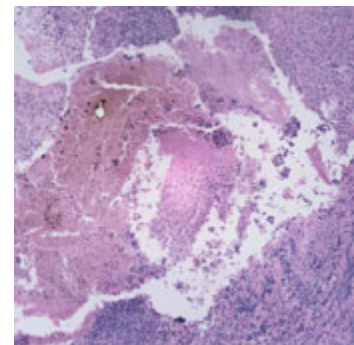
**Grant:** Refers to the money the funding agency gives to the researcher after a grant proposal has been approved for funding.

**The Guide:** Abbreviation for *Guide for the Care and Use of Laboratory Animals*, which is a booklet published by the Institute of Laboratory Animal Resources (ILAR) to help institutions address issues that concern the humane care, use and maintenance of laboratory animals.

**Heart disease:** Any condition of the heart that impairs its functioning.

**Heart-lung machine:** A device through which blood is shunted temporarily for oxygenation during surgery, while the heart or a lung is being repaired.

**Hepatitis:** A viral disease of the liver which can be acquired in the laboratory from nonhuman primates.



**Hippocampus:** An area of the brain involved with memory and learning.

**Histology:** The microscopic study of tissues.

**Histopathology:** The procedure of fixing, thin-slicing, and staining a tissue sample to perform microscopic examination of the tissue.

**HIV:** Human immunodeficiency virus, the virus that causes acquired immune deficiency syndrome (AIDS); it replicates in and kills the helper T cells.

**Hog cholera:** A highly infectious, often fatal viral disease of swine, characterized by fever, loss of appetite, diarrhea, and exhaustion.



**Hormone:** A substance, such as a peptide or steroid, which is produced by one tissue and conveyed via the bloodstream to another, where it affects physiological activity, such as growth or metabolism.

**Hydrocephalus:** A fetal defect characterized by an abnormally large head.

**Hyperactivity:** A condition characterized by excessive restlessness and movement.

**Hypertension:** Abnormally high blood pressure, especially in the arteries. High blood pressure increases the risk for heart attack and stroke.

**Hypoallergenic\*:** Cosmetics that are less likely to cause allergic reactions.

**Hypothesis:** A clear theory to explain the problem or question that is the basis for the research. Hypoxia: Insufficient oxygen.

**IACUC (Institutional Animal Care and Use Committee):** The committee responsible for overseeing animal research programs at an institution.



**Immune system:** The integrated system of organs, tissues, cells, and cellular products such as antibodies that differentiates self from nonself and neutralizes potentially pathogenic organisms or substances.

**Immunodeficient:** An animal with a defect in its normal immune system.

**Immunologic response:** A bodily defense reaction that recognizes an invading substance and produces antibodies specific against that substance

**Immunology:** The study of the ability of organisms to resist invasion and infection by foreign organisms or substances.

**Immunoserology:** A series of diagnostic tests to measure serum antibody levels (antibody titre) as a means of identifying certain diseases that cannot be identified by direct isolation.

**In vitro:** In an artificial environment outside of a living organism.

**In vivo:** Within a living organism.

**Inbred:** A mating scheme involving closely related animals; used to produce animals with minimal genetic variation.

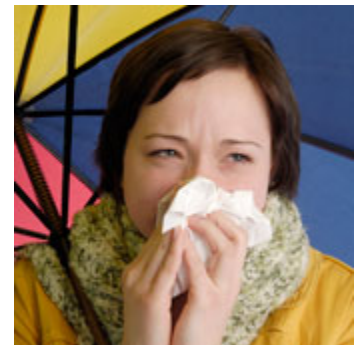
**Independent variable:** A manipulated variable in an experiment or study whose presence or degree determines the change in the dependent variable.

**Induced model:** An animal model in which a disease or condition must be artificially produced. Tumor cells, for example, can be injected into animals as a means of studying cancer.

**Inert:** Forming few or no chemical compounds; having no pharmacologic or therapeutic action.

**Infectious disease:** Diseases caused by living agents such as bacteria, viruses, fungi, or parasites.

**Inflammation:** An immune system reaction to the presence of a foreign organism or substance, with the inflammation site usually warm, red, swollen, and painful.



**Influenza:** An acute contagious viral infection characterized by inflammation of the respiratory tract and by fever, chills, muscular pain, and exhaustion.

**Interleukin-6:** An immune system component that has a number of functions, most notably to trigger inflammation.

**Lanolin:** A natural extract of sheep wool used as a moisturizer, which is a common cause of allergic reactions but is rarely used in pure form.

**Laparoscopy:** Examination of the abdominal cavity or performance of minor abdominal surgery using an instrument inserted through a small hole in the abdominal wall.

**LD50:** The dose of a substance that kills 50 percent of the animals tested.

**Leprosy:** A contagious skin disease, causing serious and permanent damage to the body, including loss of fingers, nose, and so forth.

**Leukemia:** Any of several cancers of the bone marrow that prevent the normal manufacture of red and white blood cells and platelets, resulting in anemia, increased susceptibility to infection, and impaired blood clotting.

**Lithium:** A drug used to prevent manic depressive illness and recurrent depression.

**Lyme disease:** A disease caused by the bacterial spirochete *Borrelia burgdorferi*, transmitted by deer ticks and characterized initially by a bull's-eye-shaped rash followed by flu-like symptoms such as fever, joint pain, and headache. If untreated, it can result in chronic arthritis and neurologic or cardiac dysfunction.



**Lymphocytes:** A type of white blood cell that is produced in the lymphatic system and is integral to the immune system.

**Lymphoma:** A tumor arising from any of the cellular elements of lymph nodes.

**Macrophages:** Any of various large white blood cells that play an essential immunologic role by eliminating cellular debris and particulate antigens, including bacteria, through phagocytosis.

**Malaria:** An infectious disease characterized by cycles of chills, fever, and sweating, caused by a protozoan of the genus *Plasmodium* in red blood cells, which is transmitted to humans by the bite of an infected female anopheles mosquito.

**Manic depression:** Psychiatric disorder is marked by periods of euphoric (manic) highs often followed by periods of depression.

**Measles:** An acute and highly contagious viral disease marked by distinct red spots followed by a rash; occurs primarily in children.

**Mental retardation:** Lack of normal development of intellectual capacities.

**Metabolism:** Intracellular chemical reactions that break down biochemical compounds into simpler substances.

**Microcephalus:** A fetal defect characterized by an abnormally small head.

**Microsurgery:** Any of various surgical procedures performed under magnification and with small specialized instruments, permitting very delicate operations, as the reconnection of severed blood vessels and nerves.

**Microtiter plates:** Plastic dishes used for culturing cells that are divided into multiple compartments, so that a large number of conditions may be tested and analyzed by automated procedures.



**Moebius syndrome:** Affects the cranial nerves and sometimes causes skeletal abnormalities.

**Monoclonal antibodies:** A concentration of a specific antibody produced by a particular type of lymphocyte.

**MRI:** Magnetic resonance imaging; a brain scanning technology. A diagnostic imaging technique for visualizing internal structures that utilizes a magnetic field.

**Multiple sclerosis:** A chronic disease of the central nervous system characterized by the hardening of patches of tissue in the brain and spinal cord. The cause of this disease has to do with damage to the sheathes of nerves, and there is no specific treatment. It occurs in varying degrees of severity and, in the worst case, can result in permanent paralysis.

**Mumps:** An infectious disease characterized by inflammatory swelling of the parotid and usually other salivary glands, and sometimes by inflammation of the testes or ovaries, caused by a paramyxovirus.

**Muscular dystrophy:** a hereditary disease characterized by gradual wasting of the muscles with replacement by scar tissue and fat, sometimes also affecting the heart.

**Mutagen:** A substance or chemical that causes changes in genetic material that induces mutations.

**Mutation:** A spontaneous change in part of an organism's genetic composition, which the organism passes on to some or all of its offspring.

**Myocardial:** Relating to the muscular substance of the heart.

**Natural\*:** Ingredients extracted directly from plants or animal products as opposed to being produced synthetically.

**Natural model:** An animal model in which a disease or other entity occurs spontaneously.

**Necropsy:** Examination and dissection of a dead animal, usually performed at the end of an experiment.

**Neurobiology:** The branch of biology that is concerned with the anatomy and physiology of the nervous system.



**Non-comedogenic\*:** Products so labeled do not contain common pore-clogging ingredients that could lead to acne.

**Noxious:** Harmful to living things; injurious to health.

**Nutrients:** A substance that provides nourishment for growth or metabolism.

**Obese:** Very fat or overweight; corpulent.

**Observation:** An act or instance of regarding attentively or watching.

**Open-heart surgery:** Surgery performed on the exposed heart while a heart-lung machine pumps and oxygenates the blood and diverts it from the heart.

**Organism:** An individual form of life, such as a plant, animal, bacterium, protist, or fungus.

**Organogenesis:** The formation and development of the organs of living things.

**Osteoporosis:** A softening of the bones that gradually increases and makes them more fragile. It is caused by the gradual loss of the mineral calcium, which helps make bones hard. Osteoporosis occurs most often in elderly women.



**Parabens (methyl-, propyl-, and butyl-):** The most widely used preservatives in the United States, commonly used in shampoos, foundations, facial masks, hair-grooming aids, nail creams, and permanent wave products.

**Penicillin:** A kind of antibiotic medicine which kills many harmful bacteria.

**Periodontal disease:** Any of various mixed bacterial infections that affect the soft tissues and bones supporting the teeth.

**Pertussis (whooping cough):** An infectious disease of the respiratory mucous membrane, caused by *Bordetella pertussis*, characterized by a series of short, convulsive coughs followed by a deep inspiration accompanied by a whooping sound.

**Pharmacokinetics:** The action of drugs within the body.

**Phototoxicity:** The ability of sunlight to activate or enhance a substance's toxicity to the skin.

**Polio:** A deadly disease that killed or crippled millions of people worldwide.

**Pollution:** The contamination of air, water, or soil by substances that are harmful to living organisms. Pollution can occur naturally, for example through volcanic eruptions, or as the result of human activities, such as the spilling of oil or disposal of industrial waste. Light from cities and towns at night that interferes with astronomical observations is known as light pollution. It can also disturb natural rhythms of growth in plants and other organisms. Continuous noise that is loud enough to be annoying or physically harmful is known as noise pollution. Heat from hot water that is discharged from a factory into a river or lake, where it can kill or endanger aquatic life, is known as thermal pollution.



**Population:** The set of individuals, items, or data from which a statistical sample is taken.

**Preventive:** A drug or other substance for preventing disease.

**Propylene glycol:** The most common moisture-carrying vehicle in cosmetics other than water.

**Psychology:** The science of human behavior.

**Rabies:** An acute viral disease of the nervous system of warm-blooded animals which is usually transmitted to humans in infected saliva through animal bites.

**Reagent:** A substance used in a chemical reaction to detect, measure, examine, or produce other substances.

**Regenerate:** To renew or restore a lost, removed, or injured part.

**Research proposal:** A detailed outline of the proposed research that must be submitted before research can begin.

**Rhesus (Rh) factor:** Any of several antigens present on the surface of red blood cells in most humans. People with Rh factors are classified as having a blood type that is Rh positive, while people who lack the antigen are said to be Rh negative and can produce powerful antibodies that destroy red blood cells if given a blood transfusion from an Rh-positive donor. A woman who is Rh



negative and is pregnant with an Rh-positive fetus can produce antibodies that are life-threatening to the fetus.

**Rheumatoid arthritis:** A chronic disease marked by stiffness and inflammation of the joints, weakness, loss of mobility, and deformity.

**Rickets:** A vitamin D deficiency that causes defective bone growth in infants and children.

**Risk assessment:** The process through which toxic effects of exposure to a chemical substance are calculated, and a decision regarding the potential uses of the substances are made.

**Rubella:** A usually mild contagious viral disease characterized by fever, mild upper respiratory congestion, and a fine red rash lasting a few days: if contracted by a woman during early pregnancy, it may cause serious damage to the fetus.

**Sample:** A small part of something intended as representative of the whole.

**Schizophrenia:** Any of a group of psychotic disorders usually characterized by withdrawal from reality, illogical patterns of thinking, delusions, and hallucinations, and accompanied in varying degrees by other emotional, behavioral, or intellectual disturbances.

**Seizure:** A sudden attack, spasm, or convulsion, as in epilepsy or another disorder.

**Serum:** The liquid portion of the blood, which separates when the blood clots.

**Sickle cell anemia:** A chronic hereditary blood disease, occurring primarily among Africans or persons of African descent, in which abnormal hemoglobin causes red blood cells to become sickle-shaped and nonfunctional, characterized by enlarged spleen, chronic anemia, lethargy, weakness, joint pain, and blood clot.



**SIDS (Sudden Infant Death Syndrome):** Death from the sudden cessation of breathing of a seemingly healthy infant, almost always during sleep, sometimes traceable to a chronic oxygen deficiency.



**Smallpox:** An acute, highly infectious, often fatal disease caused by a poxvirus and characterized by high fever and aches with subsequent widespread eruption of papules that blister, produce pus, and form scabs that leave permanent pockmarks.

**Spina bifida:** A spinal cord defect.

**Stem cell:** Unspecialized, undifferentiated cells that can replicate and form a pool of precursor cells. Stem cells are often multipotent; they can be induced to differentiate into a number of different cell types.

**Stress:** Physical, mental, or emotional strain or tension.

**Stroke:** A sudden loss of consciousness resulting when the rupture or occlusion of a blood vessel leads to oxygen lack in the brain.

**Synthesis:** The forming or building of a more complex substance or compound from elements or simpler compounds.

**Synthetic:** Man-made, chemical substances.

**Syphilis:** A sexually transmitted disease caused by a microorganism.

**Teratogen:** An agent, such as a virus, a drug, or radiation that damages a developing fetus.

**Teratogenicity:** The ability of a chemical substance to cause malformations in a human or animal fetus.

**Tetanus:** An infectious disease characterized by painful muscle spasms and convulsions.

**Therapeutic index (TI):** The ratio of amount of drug required to produce toxic signs or death to the amount required to produce the desired beneficial effect. Also called margin of safety.

**Tissue cultures:** The growing of groups of cells with similar functions in a specially prepared nutrient medium.

**Tissue slices:** An in vitro technique in which tissue is cut into thin and uniform slices so that the structure of the organ is preserved, with all cell types present. In most cases, tissue slices are viable for a few hours or, at most, a few days.



**Tourette syndrome:** Causes uncontrolled actions, such as verbal outbursts and muscular tics.

**Toxicity testing:** In vivo and in vitro experiments designed to reveal the toxic potential of a chemical or chemicals in order to determine the potential uses (or danger of use) of the substance.

**Toxicology:** The science of poisons and their harmful or noxious effects on living organisms.

**Toxic:** Poisonous.

**Toxin:** A noxious or poisonous substance.

**Toxoplasmosis:** Infection with the parasite *Toxoplasma gondii*, transmitted to humans by consumption of insufficiently cooked meat containing the parasite or by contact with contaminated cats or their feces: the illness produced is usually mild, but in pregnant women may damage the fetus.

**Tranquilizer:** A drug that reduces hyperactivity, anxiety, and tension by calming or sedating.

**Trauma:** A serious injury or shock to the body, as from violence or an accident.

**Tuberculosis:** A zoonotic disease of many laboratory species, especially primates.

**Tumor:** An abnormal new mass of tissue that serves no purpose.

**Typhoid fever:** A life-threatening infectious disease caused by the bacterium *Salmonella typhi* and transmitted through contaminated food and water. It is characterized by high fever, intestinal bleeding, diarrhea, and skin rash.

**Typhus:** Any of several forms of infectious disease caused by rickettsia, especially those transmitted by fleas, lice, or mites, and characterized generally by severe headache, sustained high fever, depression, delirium, and the eruption of red rashes on the skin.

**Ulcer:** A break in the skin or a mucous membrane, such as the one lining the stomach or duodenum, accompanied by inflammation, pus, and loss of tissue.

**Vaccination:** The injection of specific antibodies into an animal as a means of helping it develop immunity to the corresponding antigen.



**Variable:** Something that may or does vary or change.

**Vascular endothelial growth factor:** A protein that is a major factor in promoting the growth of new blood vessels.

**Vascular structure:** A structure composed of or provided with blood vessels.

**Vivisection:** Originally the surgical cutting of a living animal in scientific research, often used today as a synonym for any type of animal research or testing.

**Yellow fever:** An infectious tropical disease caused by an arbovirus transmitted by mosquitoes and characterized by high fever, jaundice, and often gastrointestinal hemorrhaging.

\* There are no official, government definitions for these terms.

Sources:

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