

## Glossary

### **ACQUIRED IMMUNE DEFICIENCY SYNDROME**

**(AIDS):** A secondary immunodeficiency caused by the HIV Virus.

**ACUTE:** A descriptive term used to describe an illness which is usually short in duration and of recent onset.

**ADENOSINE DEAMINASE (ADA):** An enzyme essential for the development of the immune system.

**AGAMMAGLOBULINEMIA:** An almost total lack of immunoglobulin or antibodies.

**AMNIOCENTESIS:** The withdraw of amniotic fluid surrounding a fetus in order to perform prenatal genetic testing.

**ANDROGEN:** A male sex hormone.

**ANEMIA:** A condition in which the blood is deficient in red blood cells, in hemoglobin, or in total volume.

**ANTIBODIES:** Protein molecules that are produced and secreted by certain types of white cells (B-lymphocytes, plasma cells) in response to stimulation by an antigen; their primary function is to fight bacteria, viruses, toxins, and other substances foreign to the body.

**ASPERGILLUS:** A kind of fungi which includes many common molds.

**ANTIGEN:** Any foreign substance that provokes an immune response when introduced into the body; the immune response usually involves both T-lymphocytes and B-lymphocytes.

**ATAXIA:** An unsteady gait caused by neurological abnormalities.

**AUTOIMMUNE DISEASE:** A disease that results when the body's immune system reacts against a person's own tissue.

**AUTOSOMAL RECESSIVE INHERITANCE:** A form of inheritance where the characteristic, or disease, is inherited from both parents.

**AUTOSOMES:** Any chromosome other than the sex chromosome.

**BACTERIA:** Single cell organisms (microorganisms) that can be seen only under a microscope. While bacteria can be useful, many bacteria can cause disease in humans.

**B-LYMPHOCYTES (B-CELLS):** White blood cells of the immune system derived from bone marrow and involved in the production of antibodies.

**BONE MARROW:** Soft tissue located in the hollow centers of most bones that contain developing red blood cells, white cells, platelets and cells of the immune system.

**BRONCHIECTASIS:** A dilation of the tubes (bronchi) leading to the air sacs of the lung; usually the consequence of recurrent infection.

**CARRIER DETECTION:** The detection of a genetic characteristic in a person who carries the characteristic (or disease) in their genes but shows no clinical evidence.

**CD 40 LIGAND:** A protein found on the surface of T-lymphocytes; individuals with X-linked hyper IgM syndrome have a deficiency in this protein.

**CELLULAR IMMUNITY:** Immune protection provided by the direct action of the immune cells.

**CHROMOSOMES:** Physical structures in the cell's nucleus that carry genes; each human cells has 23 pairs of chromosomes.

**CHRONIC:** Descriptive term used to describe an illness or infection that may be recurrent or last a long time.

**CHORIONIC VILLUS SAMPLING (CVS):** Involves the retrieval of a sample of the developing placenta from the womb in order to perform prenatal genetic testing.

**COMBINED IMMUNODEFICIENCY:** Immunodeficiency when both T- and B-lymphocytes cells are inadequate or lacking.

**COMPLEMENT:** A complex series of blood proteins that act in a definite sequence to affect the destruction of bacteria, viruses and fungi.

**COMPLETE BLOOD COUNT:** A blood count that includes separate counts for red and white blood cells.

**CONGENITAL:** Present at birth.

**CONSANGUINEOUS:** Descended from the same family or ancestors.

**CORD BLOOD:** Blood obtained from the placenta at birth.

**CRYPTOSPORIDIUM:** An organism that can cause gastrointestinal symptoms and liver disease; may be present in drinking water.

**CYTOKINES:** A protein secreted by cells of the lymph system that affects the activity of other cells and is important in controlling inflammatory responses. Interleukins and interferons are cytokines.

**DNA (DEOXYRIBONUCLEIC ACID):** The carrier of genetic information found in the cell nucleus.

**ECZEMA:** Skin inflammation with redness, itching, encrustations, and scaling.

**ENDOCRINE SYSTEM:** A series of glands in the body that produce hormones.

**EOSINOPHILIA:** An increase in the number of granular white blood cells that stain with the dye eosin, occurring in some allergies and parasitic diseases.

**FUNGUS:** Member of a class of relatively primitive microorganisms including mushrooms, yeast, and molds.

- GAMMA GLOBULINS:** The protein fraction of blood that contains immunoglobulins or antibodies.
- GAMMA INTERFERON:** A cytokine primarily produced by T-lymphocytes that improves bacterial killing by phagocytes; used as treatment for chronic granulomatous disease.
- GENE:** A unit of genetic material (DNA).
- GENE (OR GENETIC) TESTING:** Testing performed to determine if an individual possesses a specific gene or genetic trait.
- GENE THERAPY:** Treatment of genetic diseases by providing the correct or normal form of the abnormal gene causing the disease.
- GRAFT-VERSUS-HOST DISEASE:** A reaction in which transplanted immunocompetent cells attack the tissue of the recipient.
- GRAFT REJECTION:** The immunologic response of the recipient to the transplanted organ or tissue resulting in rejection of the transplanted organ or tissue.
- GRANULOCYTE:** A white cell of the immune system characterized by the ability to ingest (phagocytize) foreign material; neutrophils, eosinophils, and basophils are examples of granulocytes.
- HAPLOTYPE:** A series of gene clusters on the sixth human chromosome that determines histocompatibility antigens.
- HELPER LYMPHOCYTES (HELPER T-CELLS):**  
A subset of T-lymphocytes that help B-lymphocytes and T-lymphocytes to function more optimally.
- HISTOCOMPATIBILITY ANTIGENS:** Chemicals on the surface of many cells of the body, including the cells of the immune system, which are relatively unique to each individual and are responsible for our tissue type.
- HUMORAL IMMUNITY:** Immune protection provided by soluble factors, such as antibodies, which circulate in the body's fluids.
- HYPOGAMMAGLOBULINEMIA:** Lower than normal levels of gamma globulins or immunoglobulins (or antibodies) in the blood.
- HYPOPLASIA:** The failure of an organ or body part to grow or develop fully.
- IgA:** An immunoglobulin found in blood and secreted into tears, saliva, and on the mucous membranes of respiratory and intestinal tracks.
- IgD:** An immunoglobulin whose function is poorly understood at this time.
- IgE:** An immunoglobulin found in trace amounts in the blood and responsible for allergic reactions.
- IgG:** The most abundant and common of the immunoglobulins. IgG functions mainly against bacteria and some viruses. It is the only antibody that can cross the placenta from the mother to the developing fetus.
- IgM:** An immunoglobulin found in the blood. IgM functions in much the same way as IgG but is formed earlier in the immune response. It is also very efficient in activating complement.
- IMMUNE RESPONSE:** The response of the immune system against foreign substances.
- IMMUNOCOMPETENT:** Capable of developing an immune response.
- IMMUNODEFICIENCY:** A state of either a congenital (present at birth) or an acquired abnormality of the immune system that prevents adequate immune responsiveness.
- IMMUNOGLOBULIN REPLACEMENT THERAPY:**  
The intravenous or subcutaneous injection of immunoglobulin.
- IMMUNOGLOBULINS (IG):** Another name for antibody; there are five classes: IgA, IgD, IgG, IgM, and IgE.
- INCUBATION PERIOD:** The period between the infection of an individual by a pathogen and the manifestation of the disease it causes.
- IN VITRO:** Outside of a living environment; refers to a process or study taking place in test tubes, etc.
- IN VIVO:** Inside a living environment; refers to a process or study taking place in the body.
- INTRAVENOUS IMMUNOGLOBULIN INFUSION:**  
Immunoglobulin (gamma globulin) therapy injected directly into the vein.
- KILLER LYMPHOCYTES:** T-lymphocytes that directly kill microorganisms or cells that are infected with microorganisms.
- LEUKEMIA:** Type of cancer affecting the cells of the immune system.
- LEUKOCYTE (WHITE BLOOD CELL):** Group of small colorless blood cells that play a major role in the body's immune system. There are five basic leukocytes: monocytes, lymphocytes, neutrophils, eosinophils, and basophils.
- LIVE VACCINES:** Live viruses are used in the vaccine; live vaccines (particularly oral polio) can transmit the disease they were designed to prevent in immunocompromised individuals.
- LYMPH:** Fluid made up of various components of the immune system that flows throughout tissues of the body via the lymph nodes and lymphatic vessels.

## Glossary

**LYMPH NODES:** Small bean-sized organs of the immune system, distributed widely throughout the body. Each lymph node contains a variety of specialized compartments that house B-lymphocytes, T-lymphocytes, and macrophages. Lymph nodes unite in one location the several factors needed to produce an immune response.

**LYMPHOCYTES:** Small white cells, normally present in the blood and in lymphoid tissue, that bear the major responsibility for carrying out the functions of the immune system. There are two major forms of lymphocytes, B-lymphocytes, and T-lymphocytes, which have distinct but related functions in generating an immune response.

**LYMPHOMA:** Type of cancer of the lymphocytes of the immune system.

**MACROPHAGES:** A phagocytic tissue cell of the immune system that functions in the destruction of foreign antigens (as bacteria and viruses), and serves as an antigen-presenting cell.

**MAJOR HISTOCOMPATIBILITY COMPLEX:** A series of genes on chromosome 6 that direct the synthesis of the chemicals on the surface of many cells of the body, including the cells of the immune system, which are relatively unique to each individual and provide our tissue type.

**MALIGNANCY:** Cancer.

**METABOLISM:** A general term which summarizes the chemical changes within a single cell, and the body as a whole, which results in either the building up or breaking down of living material.

**MICROORGANISMS:** Minute living organisms, usually one-cell organisms, which include bacteria, protozoa, and fungi.

**MOLECULES:** The smallest unit of matter of an element or compound.

**MONOCYTE:** Phagocytic cell found in the blood that acts as a scavenger, capable of destroying invading bacteria or other foreign material; these cells develop into macrophages in tissues.

**MONOKINES:** Chemical messengers produced and secreted by monocytes and macrophages.

**MUCOSAL SURFACES:** Surfaces that come in close contact with the environment, such as the mucus membranes of the mouth, nose, gastrointestinal tract, eyes, etc; IgA antibodies protect these surfaces, or mucus membranes, from infection.

**NEUROLOGY:** A branch of medicine concerned especially with the structure, functions, and diseases of the nervous system.

**NEUTROPENIA:** A lower than normal amount of neutrophils in the blood.

**NEUTROPHILS:** A type of granulocyte, found in the blood and tissues that can ingest microorganisms.

**NYSTAGMUS:** Involuntary usually rapid movement of the eyeballs.

**OPPORTUNISTIC INFECTION:** An infection that occurs only under certain conditions, such as in immunodeficient individuals.

**ORGANISM:** An individual living thing.

**OSTEOMYELITIS:** Infection of the bone.

**PARASITE:** A plant or animal that lives, grows, and feeds on or within another living organism.

**PARATHYROID GLAND:** Small glands found in the neck near the thyroid that control the normal metabolism and blood levels of calcium.

**PETECHIAE:** Pinhead-sized red spots resulting from bleeding into the skin.

**PHAGOCYTE:** A general class of white blood cells that ingest microbes and other cells and foreign particles; monocytes, macrophages, and neutrophils are types of phagocytes.

**PLASMA CELLS:** Antibody-producing cells descended from B-lymphocytes.

**PLASMAPHERESIS:** A process in which blood taken from a patient is treated to extract the cells and corpuscles, which are then added to another fluid and returned to the patient's body.

**PLATELETS:** Smallest and most fragile of the blood cells; primary function is associated with the process of blood clotting.

**POLYMORPHISM:** The quality or state of existing in or assuming different forms.

**POLYSACCHARIDES:** Complex sugars.

**PRIMARY IMMUNODEFICIENCY:** Immunodeficiency that is intrinsic to the cells and tissues of the immune system, not due to another illness, medication or outside agent damaging the immune system.

**PROPHYLACTIC:** Medical therapy initiated to prevent or guard against disease or infection.

**PROTEIN:** A class of chemicals found in the body made up of chains of amino acids (building blocks); immunoglobulins (antibodies) are proteins.

**RECURRENT INFECTIONS:** Infections, such as otitis, sinusitis, pneumonia, deep-seated abscess, osteomyelitis, bacteremia or meningitis that occur repeatedly.

**SECONDARY IMMUNODEFICIENCY:** Immunodeficiency due to another illness or agent, such as human immunodeficiency virus (HIV), cancer, or chemotherapy.

**SEPSIS:** An infection of the blood.

**SPLEEN:** An organ in the abdominal cavity; it is directly connected to the blood stream and like lymph nodes contains B-lymphocytes, T-lymphocytes, and macrophages.

**STEM CELLS:** Cells from which all blood cells and immune cells are derived, bone marrow is rich in stem cells.

**SUBCUTANEOUS INFUSION:** Administration of gamma globulin in which it is infused slowly directly under the skin with a small pump.

**TELANGIECTASIA:** Dilation of the blood vessels.

**THROMBOCYTOPENIA:** Low platelet count.

**THRUSH:** A fungal disease on mucous membranes of the mouth caused by Candida infections.

**THYMUS GLAND:** A lymphoid organ located behind the upper portion of the sternum (breastbone). The thymus is the chief educator of T-lymphocytes. This organ increases in size from infancy to adolescence and then begins to shrink.

**T-LYMPHOCYTES (OR T-CELLS):** Lymphocytes that are processed in the thymus; they are responsible in part for carrying out the immune response.

**UNUSUAL INFECTIOUS AGENTS:** These are normally non-pathogenic agents or those not generally found in humans which can cause serious disease in immunocompromised patients.

**VACCINE:** A substance that contains components from an infectious organism which stimulates an immune response in order to protect against subsequent infection by that organism.

**VACUOLE:** A cavity or vesicle in the cytoplasm of a cell containing fluid.

**VECTORS:** Modified viruses containing normal genes; used in gene therapy to insert normal genes in cells.

**VIRUS:** A submicroscopic microbe causing infectious disease; can reproduce only in living cells.

**WHITE BLOOD CELLS:** See leukocyte.

**X-LINKED RECESSIVE INHERITANCE:** A form of inheritance where the characteristic, or disease, is inherited on the X-chromosome.