Antibody
A protein molecule in the blood serum or other body fluids that destroys or neutralizes bacteria, viruses, or other harmful toxins. Antibody production occurs in response to the presence of an antagonistic, usually foreign substance (antigen) in the body. They are members of a class of proteins known as immunoglobulins that are produced and secreted by B-lymphocytes in response to stimulation by an antigen. The antigen/antibody reaction forms the basis of humoral (non-cellular) immunity.

Antigen
Any substance that antagonizes or stimulates the immune system to produce antibodies, proteins that fight antigens. Antigens are often foreign substances such as bacteria or viruses that invade the body.

Antigen Presenting Cell (APC)
A white blood cell that devours foreign bodies, breaks them down, and carries characteristic antigen peptides to its surface. The foreign antigen, complexed with MHC I or II is presented to CD4 or CD8 to initiate an immune response specific to that peptide.

Apoptosis
"Cell suicide". Thought to be primarily a way that the body clears out immune cells that respond to the body’s own proteins, apoptosis involves a complete physical destruction of a cell, driven by enzymes.

Autoimmune Diseases
Diseases caused when an organism’s own immune system attacks its own cells.

B-Lymphocytes (B-Cells)
B-lymphocytes are blood cells of the immune system derived from the bone marrow and spleen involved in the production of antibodies. B-lymphocytes float through all body fluids, are able to detect the presence of foreign invaders, and produce antibodies on their own and when primed by T-lymphocytes. B-lymphocytes can later differentiate into plasma and memory cells. B-cells mediate the “humoral” immune response.

CD4 (T4)
A protein embedded in the cell surface of helper T-lymphocytes; also found to a lesser degree on the surface of monocyte/macrophage, langerhans cells, astrocytes, keratinocytes, and glial cells. One of the ways HIV invades cells is by first attaching to the CD4 molecule (CD4 receptor).

CD4 Cell
"Helper" T-cell, responsible for coordinating much of the immune response. CD4 cells are one of the main targets damaged by HIV.

CD8 (T8)
A protein embedded in the cell surface of killer and suppresser T-lymphocytes.
**Cell- Mediated Immunity (CMI)**
A branch of the immune system responsible for the reaction to foreign material by specific defense cells (T-lymphocytes, killer cells, macrophage and other white blood cells) rather than antibodies.

**Contagious**
Any infectious disease capable of being transmitted by casual contact from one person to another.

**Cytokine**
A chemical messenger protein released by certain white blood cells, including macrophages, monocytes or lymphocytes, the cytokines include the interferons, the interleukins, Tumor necrosis factor, and many others.

**Dendritic Cell**
A type of antigen-presenting immune cell. Dendritic cells have elongated, tentacle like branches in which they trap foreign objects.

**Eosinophil**
One of white blood cell called granulocytes that can digest microorganisms.

**Erythrocytes**
Red blood cells. The primary function of erythrocytes is to carry oxygen to cells.

**Granulocytes**
A white blood cell type of the immune system filled with granules of toxic chemicals that enable them to digest microorganisms. Basophils, neutrophils, eosinophils, and PMNs are examples of granulocytes.

**Humoral Immune Response**
The immune response that is mediated by B-cells and involves production of antibodies. Humoral immunity is associated with the production of the cytokines interleukin-4 and interleukin-10.

**Immune Complex**
Clusters formed when antigens and antibodies bind together.

**Immune Deficiency**
A breakdown or inability of certain parts of the immune system to function, thus making a person more susceptible to certain diseases to which the person would not ordinarily be subject.

**Immune Response**
The activity of the immune system against foreign substances.

**Immune System**
The complex functions of the body that recognize foreign agents or substances, neutralize them, and recall the response later when confronted with the same challenge.

**Immunity**
A natural or acquired resistance to a specific disease. Immunity may be partial or complete, long lasting or temporary.

**Immunocompromised**
Having a deficient or damaged immune response.

**Immunoglobulin**
A protein that acts as an antibody to help the body fight off disease. There are 5 classes: IgG, IgA, IgD, IgM and IgE. Recombinant and pooled immunoglobulins from blood donations have been used successfully to help HIV-infected children and some adults resist bacterial infections.
Immunosuppression
A state of the body in which the immune system is damaged and does not perform its normal functions. Immunosuppression may be induced by drugs or result from certain disease processes (such as HIV infection).

Immunotherapy
Treatment of disease by inducing, enhancing, or suppressing an immune response.

Interferons
A family of secreted proteins (lymphokines) in the body with the ability to induce an antiviral state in most cell types. They are secreted by infected host cells to protect uninfected cells from viral infections.

Interleukin
A chemical hormone messenger (cytokine) secreted by and affecting many different cells in the immune system.

Killer T Cell
Cytotoxic lymphocyte. A T-cell that directly kills infected cells of the body.

Leukocytes
White blood cells which generally fulfill immune functions, as opposed to red blood cells, which are primarily involved in oxygen transport. Leukocytes may be classified as granular or agranular.

Lymph Nodes
Small bean-sized organs of the immune system, distributed widely throughout the body. Lymph fluid is filtered through the lymph nodes in which all types of lymphocytes take up temporary residence. Antigens which enter the body find their way into lymph or blood and are filtered out by lymph nodes or the spleen respectively, for attack by the immune system.

Lymphocyte
White blood cells that mature and reside in the lymphoid organs, and are responsible for the acquired immune response.

Macrophage
A large scavenger cell that ingests degenerated cells, blood tissue and foreign particles, and secretes messenger proteins (monokines) involved in inflammatory reactions, lymphocyte activation and acute systemic immune responses. Macrophages exist in large numbers throughout the body and are key to the development of immunity to a variety of organisms. Along with their precursor blood cell, the monocyte, macrophages are a major reservoir of HIV infection.

Mast Cell
A type of immune cell that features prominently in allergies.

Memory T Cell
Persistent T cells that bear a receptor for a specific antigen that was previously encountered in the course of illness or vaccination. Memory T cells allow a rapid response to pathogens that the body has been previously exposed to.

Monocyte
An antigen presenting white blood cell, monocytes mature into macrophages.

Naive T Cell
A newly formed T cell that has not yet been exposed to antigen.

Natural Killer (NK) Cell
A type of lymphocyte (white blood cell) that lyses infected or cancerous cells. NK response does not require antigen presentation to lymphocytes.
Neutralizing Antibody
An antibody that neutralizes (renders harmless) the infectivity of microorganisms, particularly viruses.

Neutrophils
One of the white blood cells called granulocytes, filled with granules of toxic chemicals that can digest microorganisms. Neutrophils are comprised of two kinds of cells, polymorpho-nuclear cells (“polys” or PMNs), and bands, which are immature polys. Neutrophils are one of the key components of the immune response, especially to bacterial infection, and the neutrophil count is often elevated in acute infection.

Opportunistic Infections
An infection in an immune compromised person caused by an organism that does not usually cause disease in healthy people. Many of these organisms are carried in a latent state by virtually everyone, and only cause disease when given the opportunity of a damaged immune system.

Pathogen
Any disease-producing microorganism or material.

Phagocytosis
The consumption and destruction of foreign materials by white blood cells like macrophages

Platelet
Blood cells that are essential to clotting.

Symptoms
Any perceptible, subjective change in the body or its functions that indicates disease or phases of disease, as reported by the patient.

T Cells (T Lymphocytes)
A thymus derived white blood cell that precipitates a variety of cell mediated immune reactions. Three fundamentally different types of T cells are recognized: helper, killer, and suppressor (each has many subdivisions).

T Helper Cells
Lymphocytes responsible for assisting other white blood cells in responding to infection, processing antigen, and triggering antibody production (also known as T4 cells, CD4 cells).

T Killer Cells
A major component of cytotoxic lymphocyte response (CTL), responsible for lysing infected or cancerous cells, T killer cells (not to be confused by natural killer cells) are a subset of CD8+ lymphocytes.

T Suppressor Cells
T lymphocytes responsible for turning the immune response off after infection is cleared, a subset of CD8+ lymphocytes.

Additional Resources:

NIH Guide to the Immune System

The Body: The complete HIV/AIDS Resources, The Immune System
http://www.thebody.com/content/art1788.html