

immunity: a reaction to foreign substances, including microbes and other foreign macromolecules (e.g. an industrial toxin).

microbes: infectious organisms including viruses, bacteria, fungi, protozoa, and multicellular parasites, such as worms.

innate immunity (also called natural or native immunity): a defense mechanism that is present prior to exposure to a pathogen; does not discriminate among most foreign substances.

specific immunity (also called adaptive or acquired immunity): defense mechanisms that are induced or stimulated by exposure to foreign substances, are characterized by memory and specificity.

There are two types: humoral and cell-mediated immunity. Major cell type is the lymphocyte.

complement: proteins that are part of innate immune system; lyse cells; facilitate phagocytosis

antibody: proteins produced by B-cells that bind to antigens and neutralize them. Also called immunoglobulins.

phagocytes: (phago: eat; cyte: cell). Cells whose function is to engulf and digest cells.

antigen: foreign substance that produces a specific immune response

humoral immunity: neutralization is accomplished by proteins in the blood called antibodies or immunoglobulins (Ig).

cell-mediated immunity: neutralization is mediated by cells.

lymph: fluid that is found in lymphatic system, and that drains into the blood.

primary lymphoid organs: places where lymphocytes mature, includes bone marrow, thymus

secondary lymphoid organs: places where lymphocytes reside and interact with antigens in blood and lymph, includes lymph nodes (which filter the lymph), spleen (which filters the blood)

leukocytes: general name for white blood cells; includes lymphocytes and phagocytes.

lymphocytes: principal cells of specific immunity.

B-lymphocytes (also called B-cells): lymphocytes that produce antibody; main cells of humoral immunity.

vaccine: a preparation made of inactivated organisms, weakened organisms, or artificially manufactured fragments of an organism that stimulates an immune response to protect a person from a pathogen. A preventive (prophylactic) vaccine is intended to prevent initial infection. A therapeutic (treatment) vaccine is given after infection and is intended to reduce or arrest disease progression.

T-lymphocytes (also called T-cells): lymphocytes that provide cell-mediated immunity and help in other immune responses (eg. provide help for B-cells).

helper T-cells: T-cells that provide help for other immune responses; express CD4 molecule on surface

cytokines (also called interleukins): proteins released by immune cells for purposes of intercellular communication.

cytotoxic T lymphocytes (CTLs): T-cells that directly kill cells that bear foreign antigens; express CD8 on surface

natural killer (NK) cells: 'primitive', nonspecific CTLs; kill virus infected cells; express CD16 on surface

macrophages: phagocytic cells; also function as antigen-presenting cells.

antigen presenting cells (APCs): cells that present antigen to T-lymphocytes; includes macrophages and B-cells.

neutrophils: phagocytic cells; principally involved in acute inflammatory response

inflammation: a defense reaction of tissue to injury; involves redness, heat, swelling, pain.

herd immunity: when the majority of a population (the "herd") is immune to an infectious agent, the probability of a susceptible individual encountering an infected individual is so low that the susceptible individual is not likely to become infected.