Immune system

The purpose of the immune system is to keep infectious microorganism out of the body, and destroy any infectious microorganisms that do invade the body. The organs involved with the immune system are the lymphoid organs that affect growth, development, and the release of lymphocyte. The lymphoid organs play a role in the production and activation of lymphocytes. Lymphocytes is a type of infection that fight the white blood cell and is vital to an effective immune system. It patrols the body for infectious microbes. The two most well known lymphocytes are the B and T cells. B cells are derived from the bone marrow and T cells are derived from the thymus. Both of these lymphocytes recognize and attack infectious microorganisms.

B cells fight infection by producing specific antibodies to specific microbes. T cells kill microbes by killing the body cells that are affected. T cells release chemicals called lymphokines that trigger an immune response to combat cancer or virus. The immune system also contains the phagocytes the engulfed cells and cytotoxic cells (NK cells ) that actually kill the infectious microbes by devouring it.

Natural and acquired immunity

Natural or Innate immunity is created by the body’s natural barriers, such as the skin, the urinary tract, protective substances in the mouth, and the eye surface. Another type of natural or innate immunity is in the form of antibodies passed on from mother to child.

Acquired immunity develops through the exposure to a specific foreign microbes, antigens, toxins, and foreing tissues, which are remembered by the body’s immune system. The acquired immunity has memory, and when that same foreign antigen enters the body again, the immune system will remember exactly how to respond to it, such as chickenpox. For example, once a person is exposed to chickenpox or the chickenpox vaccine, the immune system will produce specific antibodies against chickenpox. When that same person is exposed to chickenpox again, the immune system will trigger the release of the particular chickenpox antibodies to fight the disease.
When the body’s immune system is exposed to a new pathogen, it will produce antibodies to fight the new pathogens. However, if the body’s immune system is exposed to the same pathogen as compare to the initial exposure of the same one 2 years ago, the immune response would be much stronger because the body immune system has already produced substantial level of antibodies to fight the initial pathogens. So if the same pathogen infect the body again, the immune response will remember it and quickly destroy the pathogens with greater force.