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(1)ROLE OF IMMUNE SYSTEM : The role of the immune system is to protect our body from any foreign matters that might cause any damage or homeostatis imbalance. The success of the immune system depends on its ability to discriminate between foreign(non self) and host(self) cells. When an organism is threatened by microorganisms, viruses, or cancer cells, the immune system acts to provide protection. Normally the immune system does not mount a response against self. This lack of an immune response is called tolerance.

When a foreign matter enters the human body, our defense system recognizes this as foreign through the immune system.

(2)TYPES OF IMMUNITY:

1.Innate immunity:We are all born with some level of immunity to invaders. Innate is a type of Immunity that is naturally present and is not due to prior sensitization to an antigen from, for example, an infection or vaccination. Since it is not stimulated by specific antigens, innate immunity is generally nonspecific. It is in contrast to acquired immunity. Also called natural immunity.

2.Acquired immunity: this is a type of immunity that develops after exposure to a suitable agent by an attack of a disease or by injection of antigens through immunization.After exposure the body then produces an immune response that is sufficient to defend against the disease on re-exposure.such immunity is not present at birth

(3)TYPES OF ANTIBODIES AND THEIR FUNCTIONS:

There are five different antibody isotypes seen in humans: IgG, IgA, IgM, IgE, and IgD

-IgG is the antibody isotype that most people think of when they're talking about antibodies. It is the antibody that is built by immunization. It activates an immune cascade that can eliminate some forms of infection. IgG can also neutralize certain toxins.

-IgA is the antibody isotype that is found in usually mucosal areas, such as the mouth and the vagina. It can also be found in saliva, tears, and breast milk. IgA is formed by two Ig subunits bound together. When IgA binds to a target, it can stimulate inflammation. In mucosal areas, IgA can also keep pathogens from sticking to epithelial cells. The production of IgA against inappropriate targets is associated with certain autoimmune diseases, such as celiac disease.

-IgM is one of the first types of antibody to be produced after a pathogen has entered the body.⁶ Since it is made up of five Ig subunits bound together, it has very high avidity. In other words, it sticks very strongly to its target. IgM is very important in the early stages of an infection. IgM sometimes appears when an infection becomes reactivated, such as with a herpes outbreak. It can also appear when someone is reexposed to a disease they've previously gotten rid of

-IgE is the antibody that is responsible for the allergic response. It is mostly found in the lungs, skin, and mucous membranes. When IgE binds to an allergen, it starts the histamine reaction. It's the histamine reaction that causes the symptoms of an allergy attack. This single subunit antibody also helps to protect the body from parasitic worms.

-IgD is important in the early stages of the immune response. Bound to B cells, it does not circulate. Instead, it signals those cells to become active. This can help to stimulate inflammation. IgD is the least understood type of antibody, and its functions are still being discovered