

# Notes

Immunity: Immunity is the body's ability to protect itself and fight against any pathogen or foreign body. Our immune system protects our bodies from getting sick.

Immunity is divided into two types:

Innate immunity: that is already there when a person is born. Our body's defence system is made up of four different kinds of barriers.

- Skin and mucus on the epithelial lining of the respiratory, gastrointestinal, and urinary tracts are physical barriers.
- Saliva, tears, and stomach acid all act as physiological barriers.
- Cellular barriers: neutrophils, monocytes, natural killer lymphocytes
- Cytokine barriers: interferons made by cells that have been infected with a virus

Acquired immunity: is something we get over time and is specific to a certain pathogen.

- After the first time a pathogen is seen, the low-intensity response is the first one that happens.
- The second infection causes a very strong secondary response or an anamnestic response because the body remembers the first response.
- In response to a foreign antigen, B-lymphocytes make antibodies.
- Antibodies (H<sub>2</sub>L<sub>2</sub>) are Y-shaped protein molecules with 4 peptide chains: 2 light and 2 heavy.
- IgG, IgM, IgD, IgA, and IgE are the five types of antibodies or immunoglobulins that humans have.
- IgG is the antibody found in the blood most often.
- IgG is passed to the foetus through the placenta. It protects the baby until its own immune system develops.
- IgA is found in breast milk. Colostrum, the yellowish fluid that comes out first during breastfeeding, has a lot of IgA.
- IgE is part of the allergic response.
- The response caused by antibodies is called a humoral immune response.
- Cell-mediated response, or CMI, is mediated by T lymphocytes.
- After a transplant, rejection of the graft is caused by a cell-mediated response that can tell the difference between self and non-self-cells.

Active immunity: Antibodies are made by the body of the host in response to an antigen. Responses that work well take time. A type of active immunity is getting a shot of a pathogen that has been weakened.

Passive immunity: is when you give a person ready-made antibody so they can quickly fight off a pathogen. Passive immunisation is what happens when you get a shot of antitoxin for a snakebite, which has antibodies against the venom.