

ASSIGNMENT

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DEPARTMENT:NURSING

ROLE OF THE IMMUNE SYSTEM

- The role of the immune system which is a collection of structures and processes within the body is to protect against disease or other potentially damaging foreign bodies. When functioning properly, the immune system identifies a variety of threats, including viruses, bacteria and parasites, and distinguishes them from the body's own healthy tissue,

TYPES OF IMMUNITY

i) INNATE IMMUNITY: is the first line of defense against pathogens. It involves several cell types, proteins, and even an organ. The organ involved is the skin and it protects you and prevents pathogens from getting inside you.

ii) ADAPTIVE IMMUNITY: works slower than innate, and is more specific. There are two types: passive and active

(a) Passive immunity: which occurs when antibodies are passed from one person to another, as through transfusion for example.

(b) Active immunity: involves two types of white blood cells - T-cells and B-cells. Dendritic cells, after they have eaten and digested the pathogen, present the pathogen pieces to T-cells, which activates (turns on) the T-cells.

DIFFERENT TYPES OF ANTIBODIES AND THEIR ROLES

IgG: The most abundant antibody isotype in the blood (plasma), it detoxifies harmful substances and is important in the recognition of antigen-antibody complexes by leukocytes and macrophages.

IgM: usually circulates in the blood, accounting for about 10% of human immunoglobulins. IgM has a pentameric structure in which five basic Y-shaped molecules are linked together. B cells produce IgM first in response to microbial infection/antigen invasion.

IgA: is abundant in serum, nasal mucus, saliva, breast milk, and intestinal fluid, accounting for 10-15% of human immunoglobulins. IgA in breast milk protects the gastrointestinal tract of neonates from pathogens

IgE: is present in minute amounts, accounting for no more than 0.001% of human immunoglobulins. its role is to protect against parasites.

IgD: accounts for less than 1% of human immunoglobulins. IgD may be involved in the induction of antibody production in B cells.