

White blood cells essay

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In the immune system there are multiple functions happening to stop an infection or bacteria from taking over and getting the body sick.

One of the most important features of this defense or system is the white blood cells. The White Blood Cells work to fight off any infection there is and have a memory function that remembers the disease to keep it away. A leukocyte, which is the formal name for white blood cells, protects the body in various ways from getting sick. The red bone marrow's stem cells, which are called hemocytoblasts, are the source of creation for almost all of the white blood cells. Five types of white blood are carried through the blood to the sites of infection in order to ensure fast travel to the infected site. These different types of white blood cells are grouped by cytoplasmic contents into two groups, the granulocytes and the agranulocytes. The granulocytes are about the size of a normal red blood cell and only live about 12 hours. These are formed and developed in the red marrow of the bones.

There are three different specific types of granulocytes and they are the neutrophils, the eosinophils, and the basophils. The neutrophils are the most common white blood cell in the body. They are one of the first cells to arrive at an infection site to ingest bacteria, virus particles, fungi, or protozoa. The nuclei of the neutrophil only have around two to five lobes and the cytoplasmic granules are usually very fine and too hard to see and observe. The eosinophils are one of the smallest types of white blood cells in the body.

The nuclei of this are bilobed and it has uniform-sized cytoplasmic granules. This type of white blood cell moderates allergic reactions, and they defend

against parasitic worm infestations and infections. The basophils comprise less than one percent of the white blood cell population and are smaller than any other granulocyte.

These are also the easiest to identify because of the numerous granules inside the cytoplasm. How they defend are they discharge their granules containing histamine and heparin into damaged tissue spaces so that way the blood flow will get to the damaged areas. The agranulocytes lack the granules in their cytoplasm which defines the granulocytes. The two types of these white blood cells are the monocytes and the lymphocytes. Monocytes are two to eight percent of the white blood cell population and they are twice the size of normal red blood cells. Monocytes have oval or kidney bean shaped nuclei and they travel in the blood for about a day before exiting the blood stream.

These cells are the “big-eaters” so-to-say and they can develop into macrophages that phagocytose bacteria and debris in the tissues of the body. The lymphocytes are only slightly bigger than the red blood cells and are extremely easy to recognize and pick out due to the large nucleus that occupies them. These cells can live for years and are approximately twenty-five to thirty-three percent of the population. There are two types of lymphocytes which are considered B and T cells. T cells attack foreign and tumor cells and B cells produce antibodies to attack foreign cells or proteins.

These cells are also classified as “natural killer” cells and are extremely important in cancer prevention.