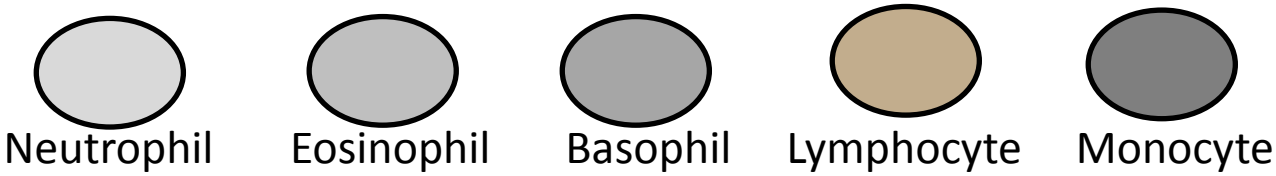
How are white blood cells classified?

University of Virginia Health System | School of Medicine

Types of White Blood Cells:



- The types of white blood cells are shown above. The next page will describe lymphocytes in further detail. A healthy individual has all of these white blood cells types, but within specific ranges. Deviation from these ranges can indicate acute illness or a chronic disease.

- A mnemonic that is often used to remember the relative amount of each white blood cell that should be present is "Never Let Monkeys Eat Bananas."

Never	→	Neutrophil
Let	→	Lymphocyte
Monkeys	→	Monocyte
Eat	→	Eosinophil
Bananas	→	Basophil

Highest amounts

↓

Lowest amounts

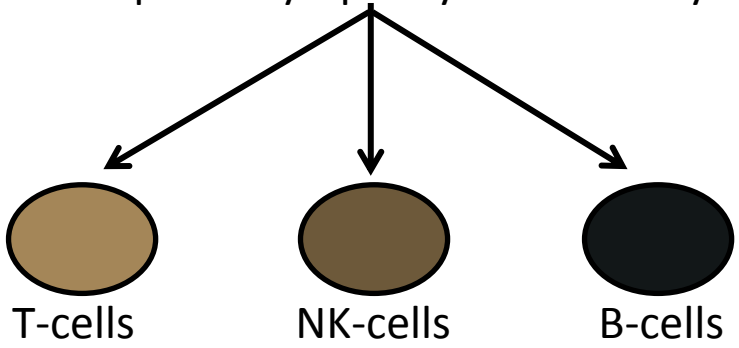
- In other words, neutrophils should always be present in higher amounts compared to the other cell types. This will be described further in "*A first step in diagnosing LGL leukemia: The blood smear*."

University of Virginia Health System | School of Medicine

Introduction: White blood cells are blood cells that fight infection and disease. Lymphocytes are a type of white blood cell. They can identify antigens (substances foreign to the body) and cause an immune response. There are three types of lymphocytes: T-cell, NK-cell, and B-cell. In healthy adults, 10-15% of the lymphocytes are large granular lymphocytes (LGLs). To learn more about LGL cells, see *"A first step in diagnosing LGL leukemia: The blood smear."* A person is diagnosed with LGL leukemia if there is a clonal (copied) population of T-cells or NK-cells present. Subsequent content describes what clonality is and how it's established.

Types of White Blood Cells:

Types of Lymphocytes:



T-cells

- Mature in the thymus
- T-cell receptor (TCR) on the cell surface can recognize antigens and distinguishes them as a T-cell
- Some T-cells are large granular lymphocytes
- Kills virally-infected cells, cancer cells, or damaged cells.

NK-cells

- Large granular lymphocyte
- "natural killer"
- Kill virally-infected cells and tumor cells; their granules contain chemicals that when released cause a target cell to burst.

B-cells

- Mature in the bone marrow
- B-cell receptor (BCR) on the cell surface.
- The BCR allows binding to an antigen; this leads to production and secretion of antibodies.