

Specialized Connective Tissue (Blood Tissue)

Description

- Blood is a fluid connective tissue that circulates through the body. It originates from mesodermal layer of embryo.
- Blood cells produced in liver and spleen in embryo while after that bone marrow becomes site of production.

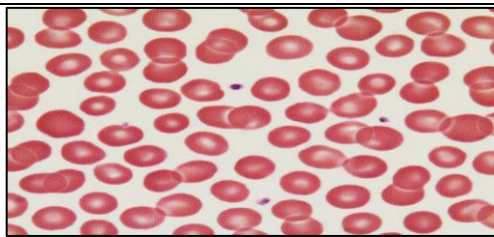
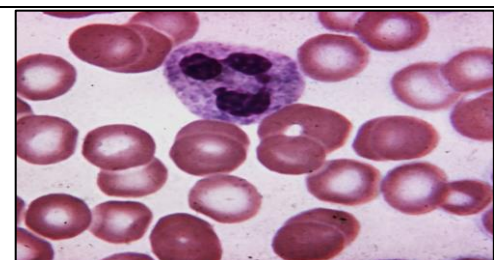
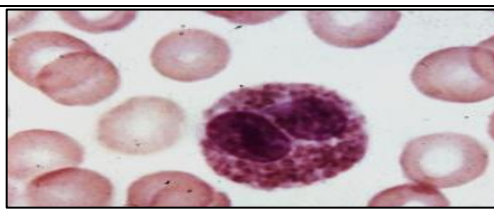
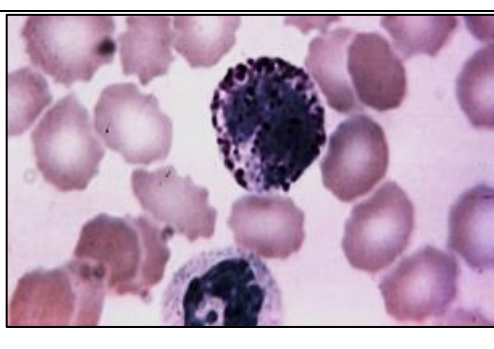
Composition

1. **Plasma (matrix) (55%):** contain proteins, such as fibrinogens, globulins, and albumin, and a ground substance called serum.
2. **Formed elements(Cells) (45%):**
 - a) RBC 99% (erythrocytes)
 - b) WBC 1% (leukocytes)
 - c) Platelets

Function: Transport (respiratory gases, nutrients, and waste) protection, and Coagulation.

Location: Within heart and blood vessels

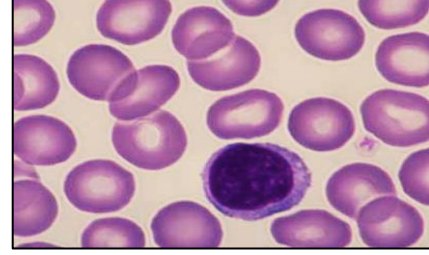
Types of blood cells

<p>1. Red Blood Cells (Erythrocytes) Description: small size, biconcave in shape, pink in color, no nucleus Function: transport nutrients and gases.</p>	
<p>2. White Blood Cells (5 types): A. Granular 1-Neutrophils <ul style="list-style-type: none"> • Description: Multi-lobed nucleus • Most common WBC, 60-70% of leukocytes. • Function: Kill and phagocytosis of bacteria. </p>	
<p>2. Eosinophils <ul style="list-style-type: none"> • Description: Bi-lobed nucleus with large red "ruby" granules. • 2-4% of total WBC • Function: Kill parasites and helminths. </p>	
<p>3. Basophils Description: Irregularly shaped nucleus. <ul style="list-style-type: none"> • Very dark blue granules • Very rare (less than 0.5% of the total count) Function: modulate inflammation, release histamine and heparin. Histamine is also involved in allergic reactions, and heparin is an anticoagulant.</p>	

B. A granular

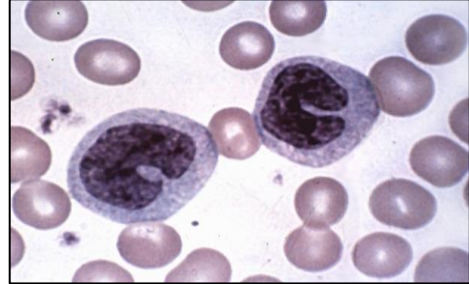
1. Lymphocytes

- **Description:** (similar in size to RBC) dark round nucleus filling most of the area of the cell.
- 25-33% of the total count.
- **Function:** production of antibody.



2. Monocytes (largest circulating WBC)

- kidney shaped very large nucleus is but does not take up entire area of cell with blue cytoplasm.
 - 3-7% of the total count.
- Function:** precursor for macrophage.



Hematopoiesis: is formation of blood cells in bone marrow.

