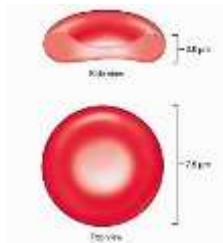


lab 10 Blood Cell (RBCs) Count

Erythrocyte: is a biconcave disc. The central portion thinner and periphery thicker

Function: RBC contain hemoglobin (Hb) that carries oxygen through the body.

RBC formed at yolk sac in embryo, at liver during pregnant (Fetal) and in adult at bone marrow.



Normal range of RBC:

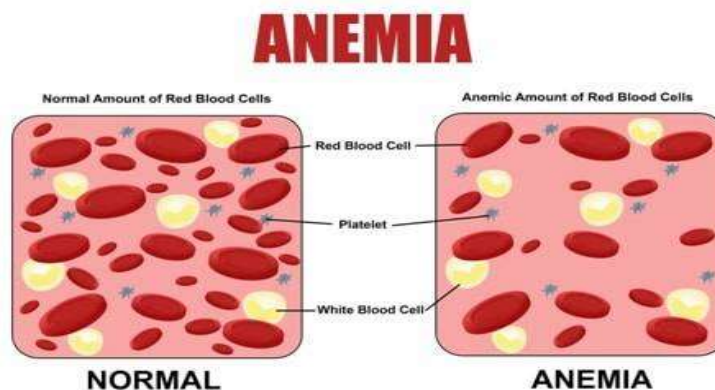
In Men = 4.5 - 6.5 million cell/mm³

In Women = 3.9 - 5.6 million cell/mm³

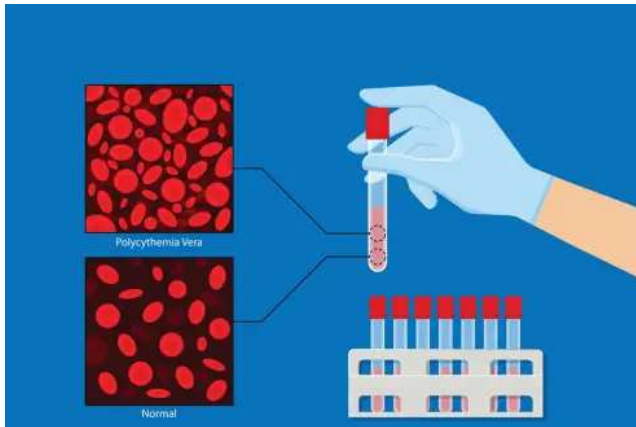
In Children = 4.2 - 5.2 million cell/mm³

Red Blood Cell levels

1- **RBC count decrease called Anemia:** Anemia is a condition in which the number of red blood cells or the concentration of hemoglobin within them is lower than normal. It mainly affects women and children. Anemia can occur due to malnutrition, infections, chronic diseases, pregnancy problems, and family history of infection. It is often caused by a lack of iron in the blood.



2- RBC count increase called Polycythemia : is a type of chronic leukemia (blood cancer) that causes your bone marrow to produce too many red blood cells.



Methods of RBC count:

- 1) Manual method- hemocytometer
- 2) Automated method (CBC)

RBC count principle dilution.

In order to facilitate RBCs count a specified volume of blood is diluted (**1:200** , blood: fluid) to **lyses of leukocytes**.

Materials

1. Neubauers chamber - hematocytometer
2. Cover slip .
3. Micropipette.
4. Microscope.
5. RBC diluting fluid.

B- Sample:

Anticoagulated blood sample (collected by venipuncture and use EDTA blood tube).

Procedure :

1. Pipette **3.98ml (3980 μ l) of diluting fluid** into a khan tube.
2. Pipette **20 μ l of will mixed anticoagulated whole blood** to the tube and mix well, then wait for a 2-3 min.
3. Place cover slip then load one drop of mixture on hematocytometer (neubaure chamber)
4. Place the hematocytometer on the microscope stage. Switch to 40x objective lens, and start counting in the five squares (four corner squares, and one middle square) as show in figure.

