

جامعة الانبار

كلية : الصيدلة

قسم : الادوية والسموم

اسم المادة باللغة العربية: فسلجة عملي

اسم المدة باللغة الإنكليزية: **physiology lab.**

المرحلة: الثانية

التدريسي: م. م. مروة شكيب ذنون

عنوان المحاضرة باللغة العربية: تعداد وحساب كريات الدم الحمراء

عنوان المحاضرة باللغة الإنكليزية: **RBC Count**

RBC Count

1-Enumerating RBC is essential in anemia typing

2-counting difficulties ; Number , fragile , preciseness

PRINCIPAL

Since the normal RBC count runs in millions, the count is made possible by diluting the sample of blood before counting and subsequently multiplying the count: by the dilution factor.

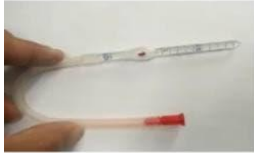
1-Enumerating RBC is essential in anemia typing

APPARATUS FOR RBC COUNT

- Improved Neubauer's counting chamber
- RBC pipette
- RBC diluting fluid (Hayem's fluid)
- Compound microscope
- Coverslips
- Pricking apparatus



Compound Microscope



RBC pipette



Lancet - Cotton



Spirit



RBC diluting fluid
(Hayem's fluid)



Improved Neubauer's counting chamber, Coverslips

RBC Diluting Fluid

RBC diluting fluid (Hayem's fluid)

Composition and Function:

1. Sodium Sulphate (2.5 gm) - to prevent aggregation of RBC (i.e. Roulex formation)

Sodium Chloride (0.5 gm) - maintain isotonicity .2

Mercury Chloride (0.25 gm) - Antibacterial, .3

Antifungal and Preservative

4. Water (100 ml) - as a Solvent

NORMAL RBC VALUE

Male: 5 - 6 million RBCs / cubic mm of the blood

Female: 4.5 - 5.5 million RBCs / cubic mm of the blood
Infant: 6 - 7 million RBCs / cubic mm of the blood

Physiological Variation

1. Diurnal variation

2. **Muscular exercise**
3. **Altitudes**
4. **High external temperature.**
5. **Age and sex**

Pathological Variations

1. Anemia: It means a significant reduction in number of red cells and/or the amount of hemoglobin in the blood as compared to the normal state.

2. Polycythemia: An increase in the number of red cells is called polycythemia. The blood count may be 6–7 millions/cu mm.

It may be due to:

- a. Emphysema.
- b. Congenital heart disease.
- c. Poisoning by chemicals like arsenic and phosphorus.
- d. Repeated small hemorrhages.
- e. High altitudes.

3. Polycythemia vera: It is a primary condition due to alteration in the hemocytoblast cell. RBC count may be 7–8 millions/cu mm.