



قسم تقنيات الاشعة  
المرحلة الاولى  
المحاضرة الخامسة  
فصله عملي

# \* Red blood cell count RBCS

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# \* A red blood cell count

- \* A red blood cell count/ is a blood test that tells you how many red blood cells (RBCs) you have.
- \*\* Other name /erythrocyte count.
- \*\* Red blood cells contain a substance called haemoglobin, which transports oxygen around the body.
- \*\* The amount of oxygen that's delivered to your body's tissues depends on the number of red blood cells you have

# \*normal range for an RBC count?

- \*\* The normal RBC range for men is (4.7 to 6.1)million cells per microliter (mcL).
- \*\* The normal RBC range for women (is 4.2 to 5.4) million/ microliter mcL.
- \*\* The normal RBC range for children is (4.0 to 5.5) million/ microliter mcL.

# \*Purpose of test

- \*1. The test is almost always a part of a complete blood count (CBC) test
- \*2. RBC count can be used to help diagnose blood-related conditions, such as iron deficiency anaemia (where there are less red blood cells than normal).

# \* Factors affecting R.B.C number

## \* Physiological factors

- \* 1. Age, gender, activity, nutrition, pregnancy and lactation.
- \* 2. In very high areas, the number of R.B.C increases due to the lack of oxygen

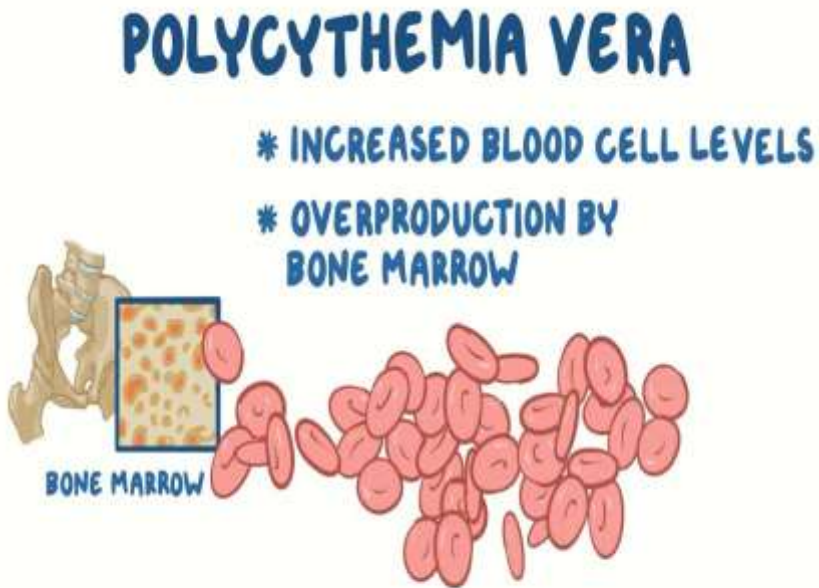
## \* Pathological factors

- \* 1. Anemia.
- \* 2.. Leukemia
- \* 3. Erythropoietin hormone disorder
- \* 4. Polycythaemia red blood



# \*Polycythaemia

- \*Polycythaemia/ is an increase in the number of red blood cells as a result of infection of the bone marrow with cancer, which stimulates it to produce red blood cells, and its symptoms include redness of the face



# \*Material

- \*1. Haemocytometer
- \*2. Red blood cells pipette
- \*3. Isotonic diluting fluid( Hayem's Fluid)
- \*4. Lancet,
- \*5. blood
- \*6. cotton
- \*7.alcohol

# \*Hayem's Fluid

- \* Hayem's Fluid) / isotonic to the Red blood cells and does not cause any damage to it.
- \* which preserve and fix the Red blood cells.
- \* \*\*The composition of Hayem's diluting Fluid:

COMPONENTS	QUANTITY
Mercuric Chloride	0.25 grams
Sodium sulfate	2.5 grams
Sodium chloride	0.5 grams
Distilled water	100 ml



# \*Purpose of Hayem's Fluid)

- \* 1.The benefit of using this solution is that it is a neutral solution that dilutes the blood and prevents its dissolution and prevents the phenomenon of sedimentation
- \* . 2.Sodium sulfate/ has an effect on preventing coagulation
- \* . 3.Mercury chloride/ is considered as an Acts as antiseptic sterilizer

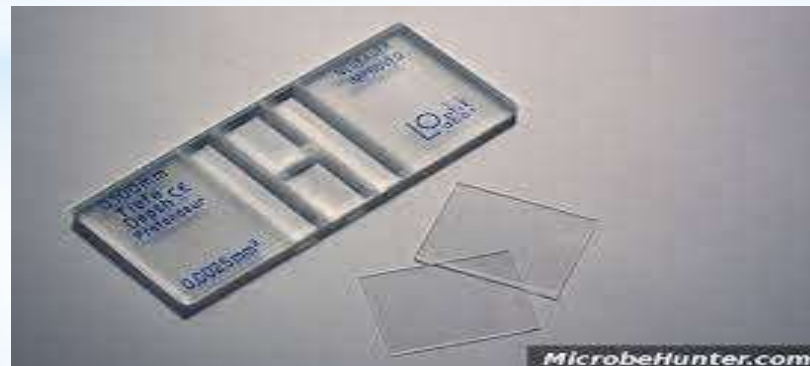
pipete of red blood cell



Hayem's Fluid



\* haemocytometer chamber



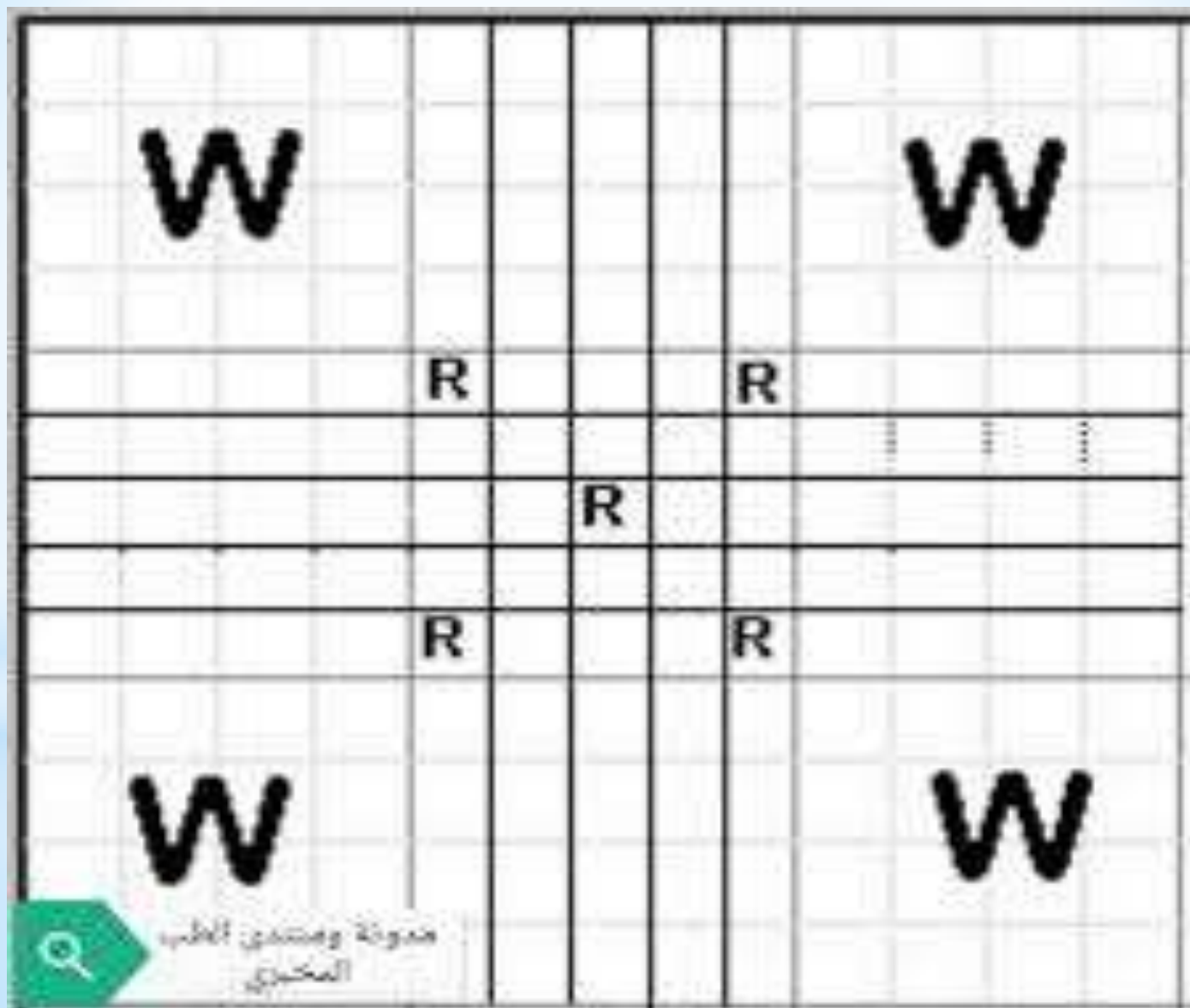
# \* procedure

- \* 1. Take 3.98 ml of RBC diluting fluid in a Clean, Dry Test tube.
- \* 2. add 20  $\mu$ l of Blood Specimen to the tube containing diluting fluid.
- \* 3. Mix well for few minutes and ready your Hemocytometer / Neubauer's Chamber
- \* 4. put cover slide on Neubauer's Chamber
- \* 5. put sample of mixing fluid on Neubauer's Chamber
- \* 6. under microscope count red blood cell (Calculate the five squares of the center square for counting red blood cells)
- \* 7. write reported

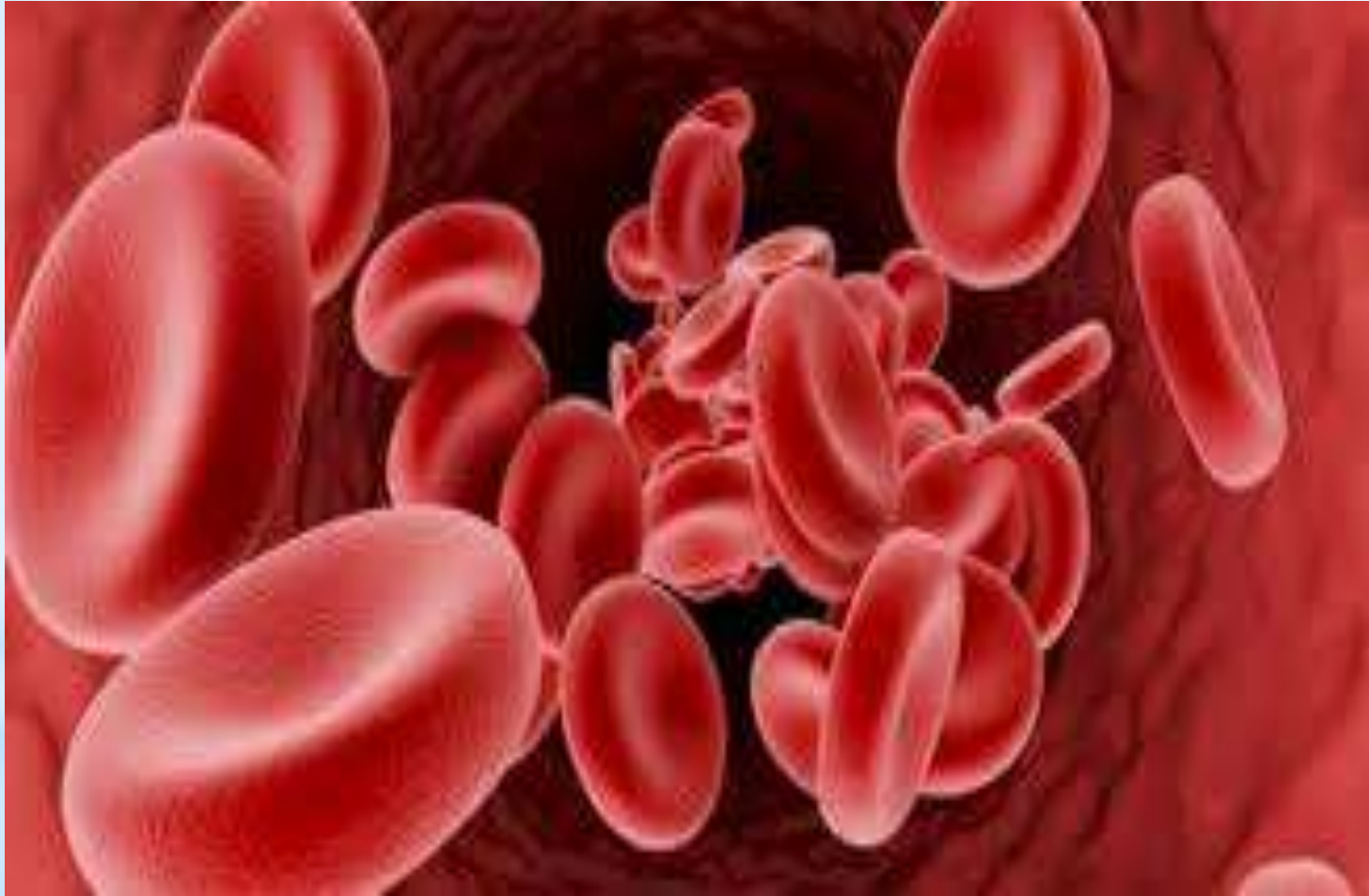
**\*calculate**

Sum of 5 squares x 10000

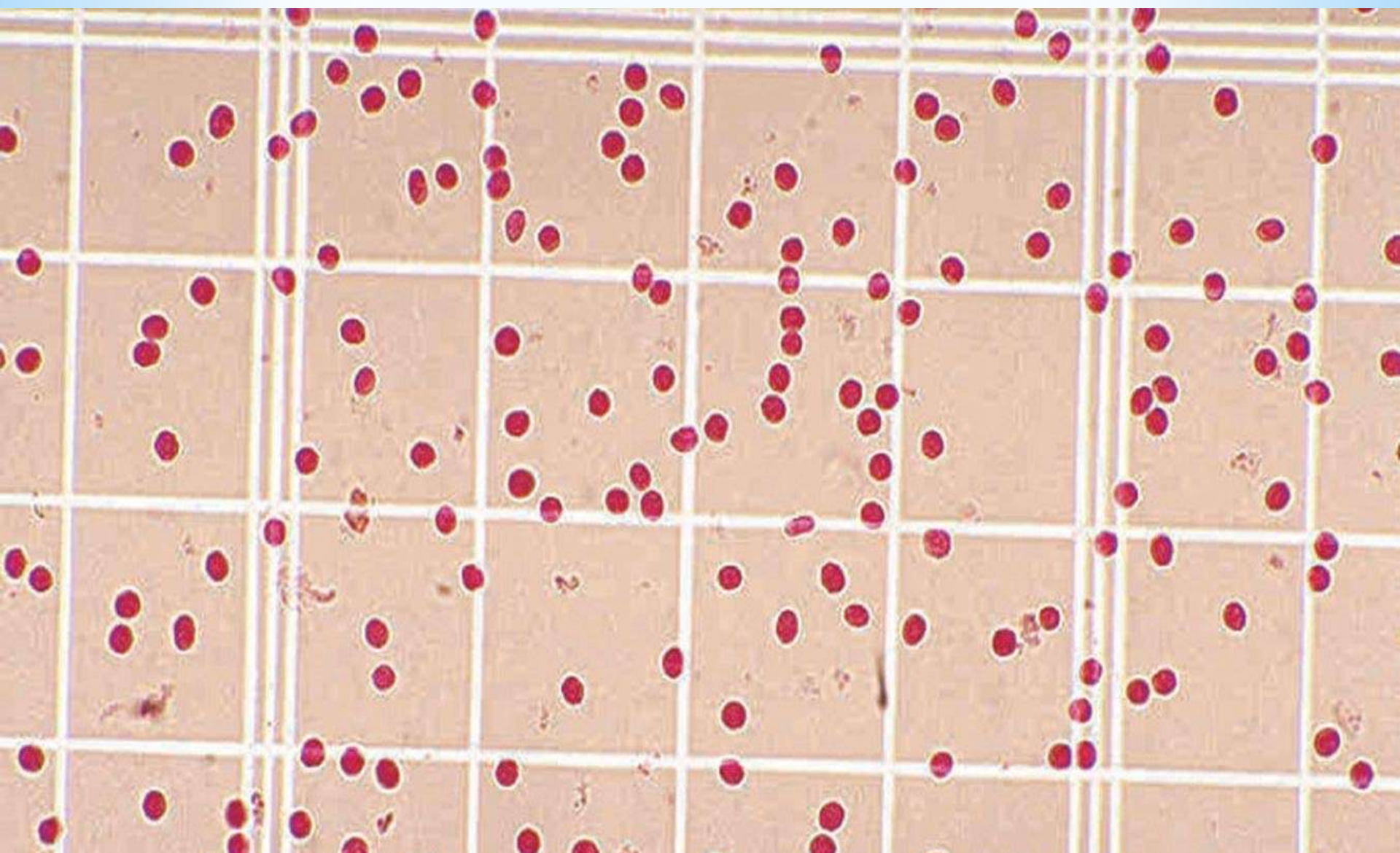
=N x 10000













Thank  
you!!