Practical physiology
session 3

WBCs count

MSc. Doua’a S.ALtaee

The WBC (white blood cell) count

A white blood cell (WBC) count is a test that measures the number of white blood cells in your body .

*** This test is often included with a complete blood count (CBC).

** There are several types of white blood cell and your blood usually contains a percentage of each type . Sometime , however your white blood cell count can fall or rise out of the healthy range .

Purpose Of The Test

1- To differentiate between acute and chronic infection WBCs count is increased above normal (leukocytosis) e.g in bacterial infection and physiological leukocytosis(during exercise and excitement).

(leucopenia = decreased WBCs number)

2- To determine the normal values of WBCs count (4000 – 9000 cell / mm3) in human.

3- To follow the patient with chemotherapy also the effect of drugs.

Material

1- Neubauer counting chamber or (Heamocytometer)

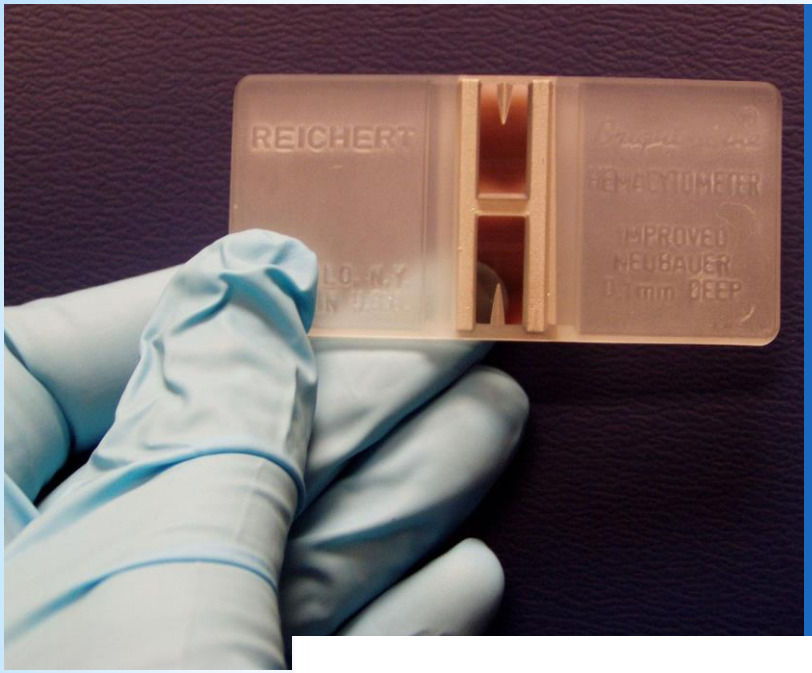
2- Cover glass

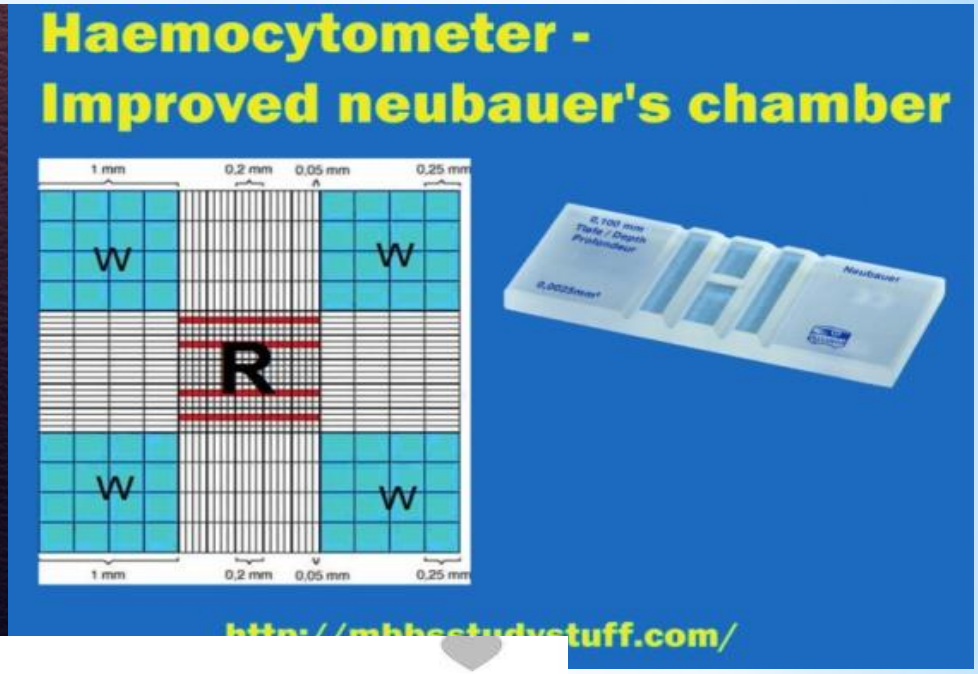
3- Diluents (Turkey's Solution)

4- Microscope

5- WBCs Pipette

Neubauer counting chamber or hematocytometer



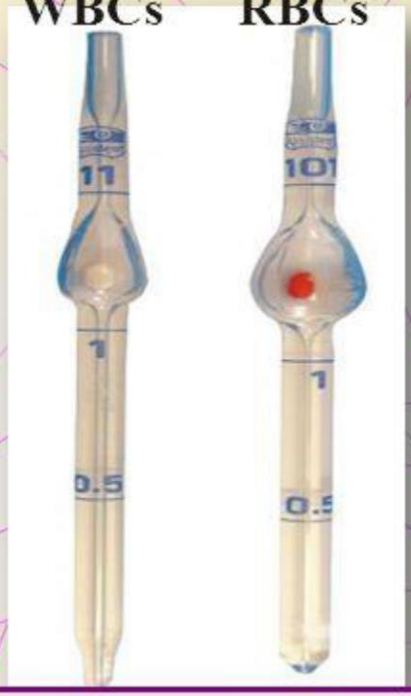


pipette

Turks Solution

Requirements

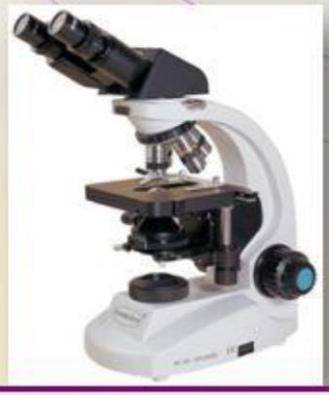
White blood cells count diluting fluid



Thoma white pipette

Hemacytometer and coverslip

Alcohol pads



Microscope

Turkey's Solution

* **Turkey's Solution:** WBC diluting fluid is used for performing the WBC (leukocyte) count .
* **Composition :**

1- (glacial acetic acid) 2%

2- methylene blue or gentian violet (2-3) drop

3- distal water (98 ml)

** What is the purpose of using Turk's solution or WBS fluid ?

* The **solution** destroys the RBCs within a blood sample and stains the nuclei od the white blood cells and making them easier to see count .

procedure

1. draw (380) microliter Turk solution by micropipette and put it into a test tube.
2. Then (20µl) of blood + EDTA to be tested to the solution.
3. Shake the mixture well and leave it for (2-3) min. until all RBCs has dissolved and the WBCs are stained and the nucleation appears clear.
4. The chamber counting (Haemocytometer) are prepared ,cleaned and with a glass cover .
5. Put the dilute sample solution between chamber and cover glass
6. Under microscope, we count the cells in the four special squares
7. After completing counting process , the results are recorded .

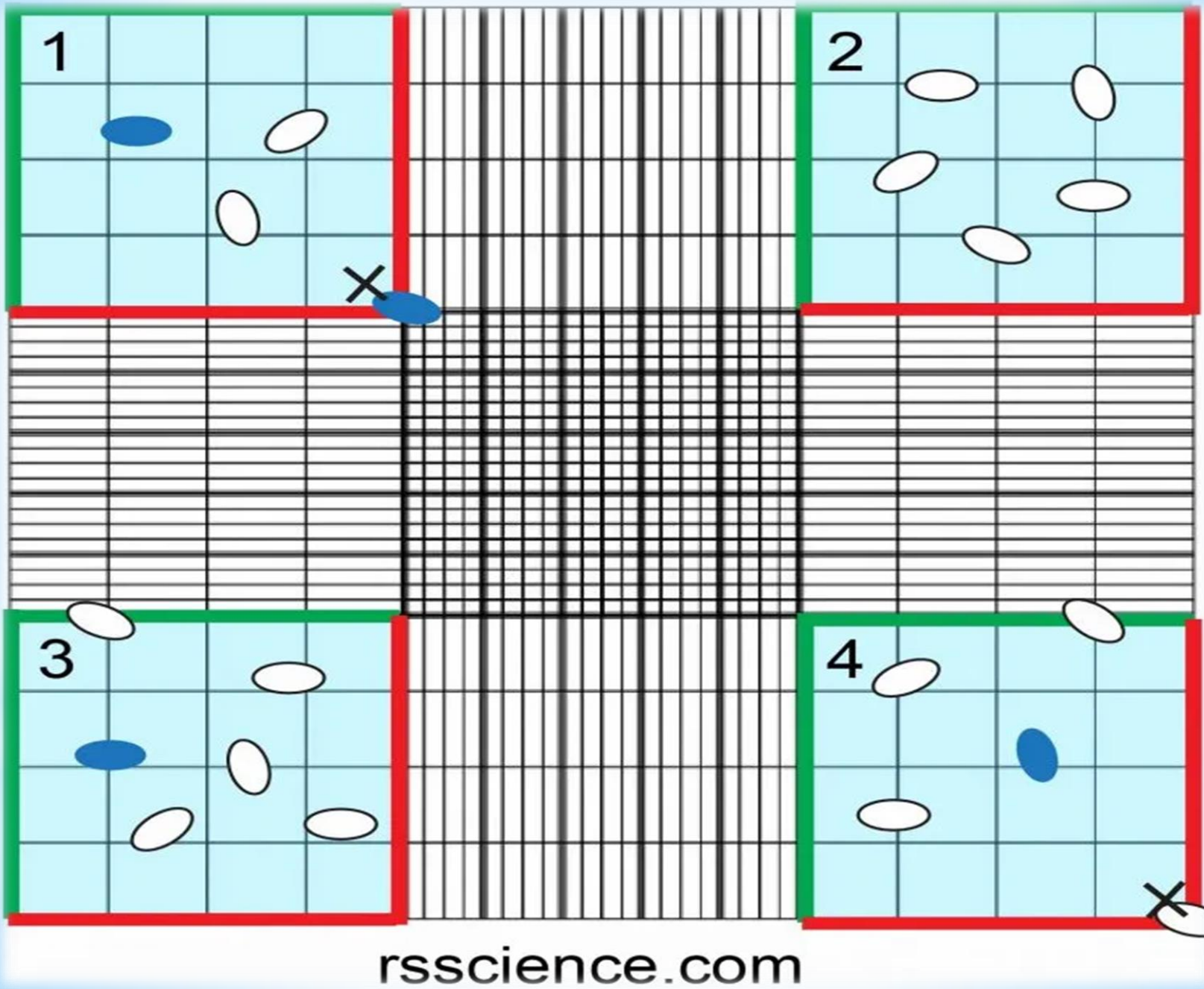

Digital Bio

Calculation

Cell / µl = no. of cells in 1 square × dilution factor =

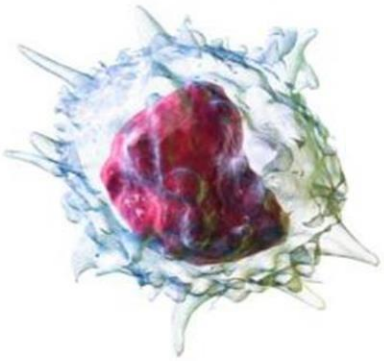
*Dilution factor = 200

N×200=

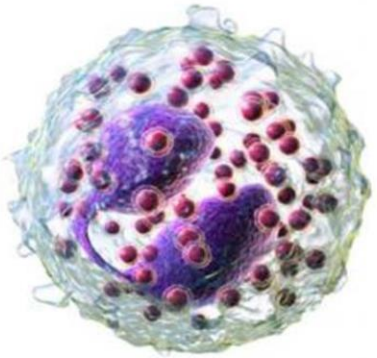

1
2
3
4
rsscience.com

MEDICALNEWSTODAY

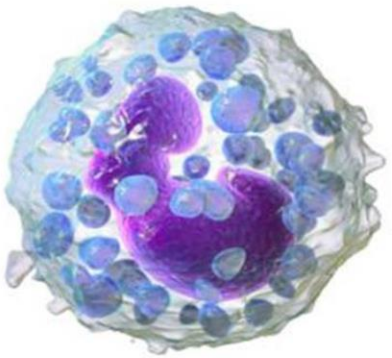
White Blood Cells



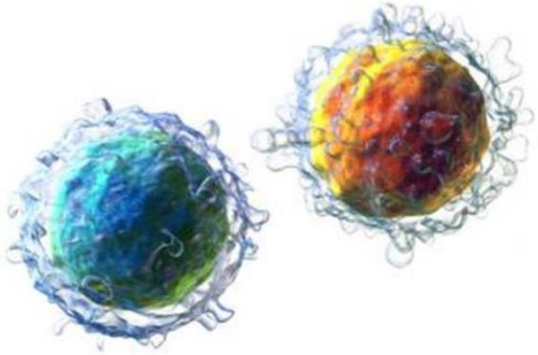
monocyte



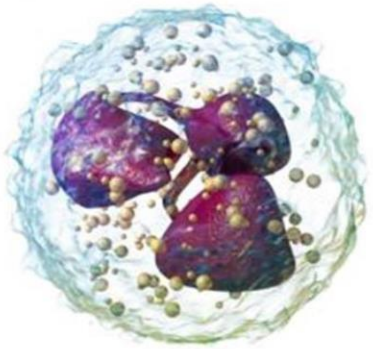
eosinophil



basophil



lymphocytes



neutrophil


Thank you