



* قسم تقنيات الاشعة
* المحاضرة الرابعة
* فسلجه عملي

White blood cells count (WBCs Count)

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*White Blood Cell Count.

- * **A white blood cell (WBC) count** : measures the number of white blood cells in your blood.
- * **also** determines the percentage of each type of white blood cell present in your blood.
- * WBCs count detect immature white blood cells and abnormalities.
- * WBCs Count test as part of a routine health exam
- *

* **White blood cells are an important part of your body's immune system. They're responsible for protecting your body against infections and invading organisms.**

* ****You have five types of white blood cells:**

* **neutrophils**

* **eosinophils**

* **basophils**

* **lymphocytes**

* **monocytes**

* Purpose of test

- * 1. .A WBCS Count test is often part of a complete blood count (CBC).
- * 2. To determine the normal values of WBCs count (4000 – 11000 cell / mm³) in human.
3. 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)
4. To follow the patient with chemotherapy.
5. To find the effect of drugs

*Normal value

Neutrophils(50 to 70 percent)

lymphocytes(25 to 35 percent)

l)Monocytes(4 to 6 percent

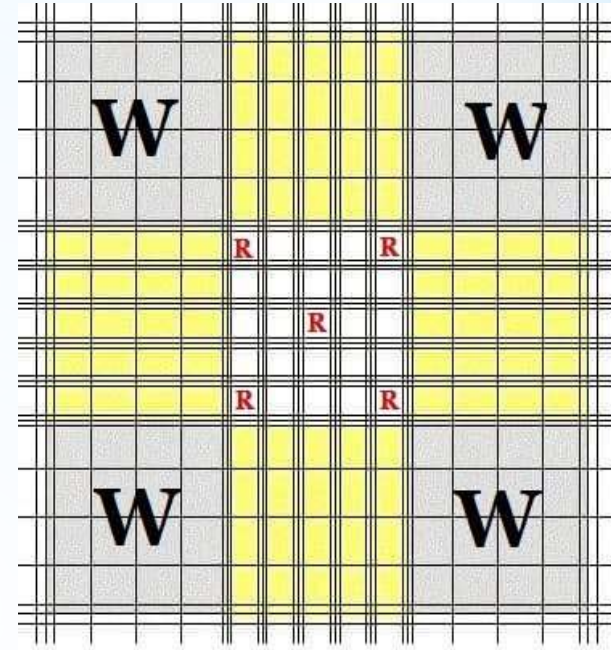
Eosinophil's(1 to 3 percent)

)Basophils(1 percent

*Material

- * 1. Blood
 - * 2. Neubauer counting chamber or (Heamocytometer
 - * 3.) Cover glass
 - * 4. Diluents (Turkey's Solution)
 - * 5. microscope
 - * 6. WBCs Pipette
 - * 7. stain
-
- * A. (wright-stain)
 - * B. (leishmans-stain)
 - * C. (giemsa-stain)

* Neubauer counting chamber or hemacytometer



pipette

*Turks Solution



Requirements

White blood cells
count diluting fluid



WBCs



RBCs



Hemacytometer and
coverslip



Microscope

Thoma white
pipette



Alcohol pads

*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 of 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 (20 μ l) 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

* Calculation

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

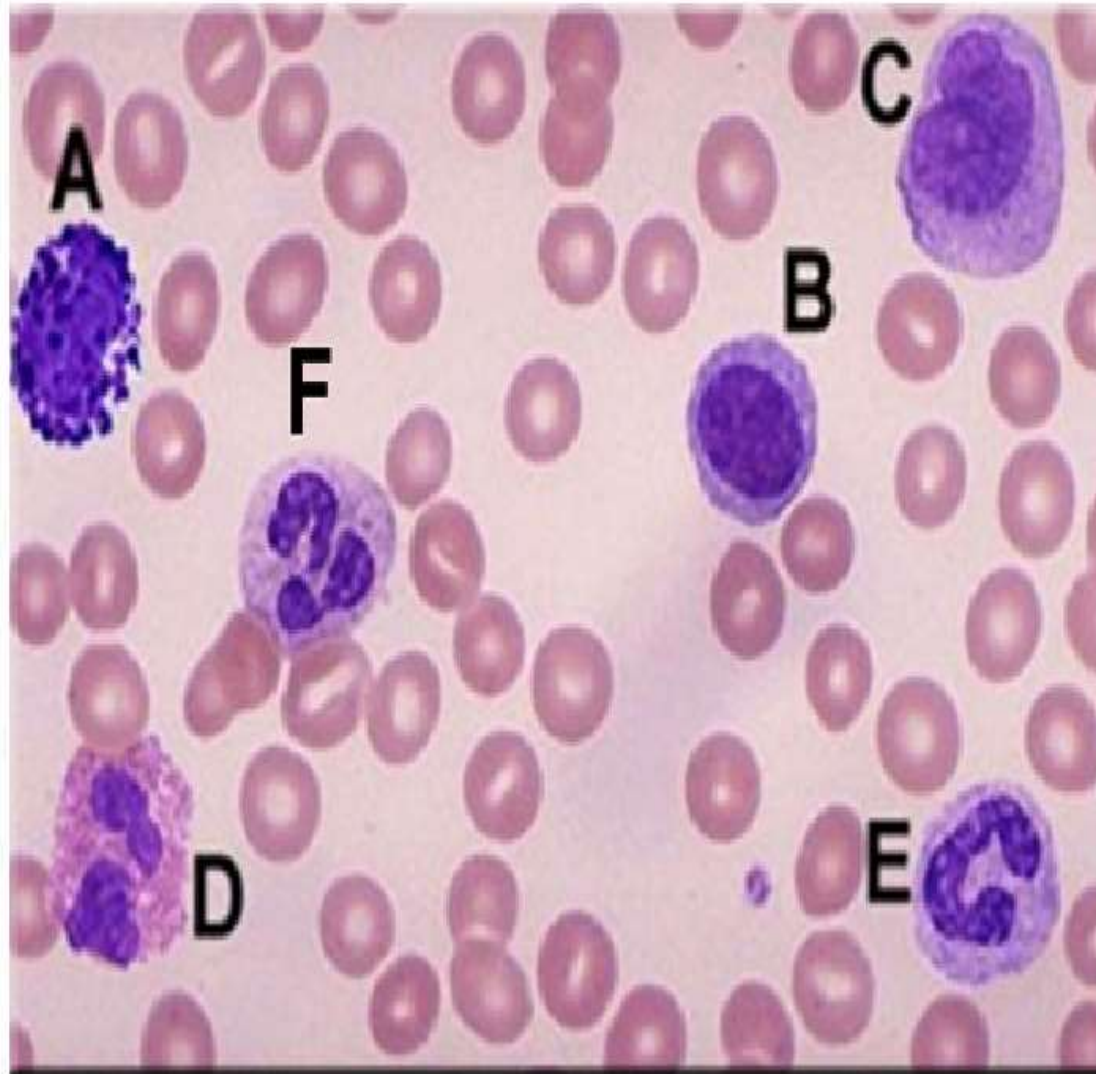
* Dilution factor = 200

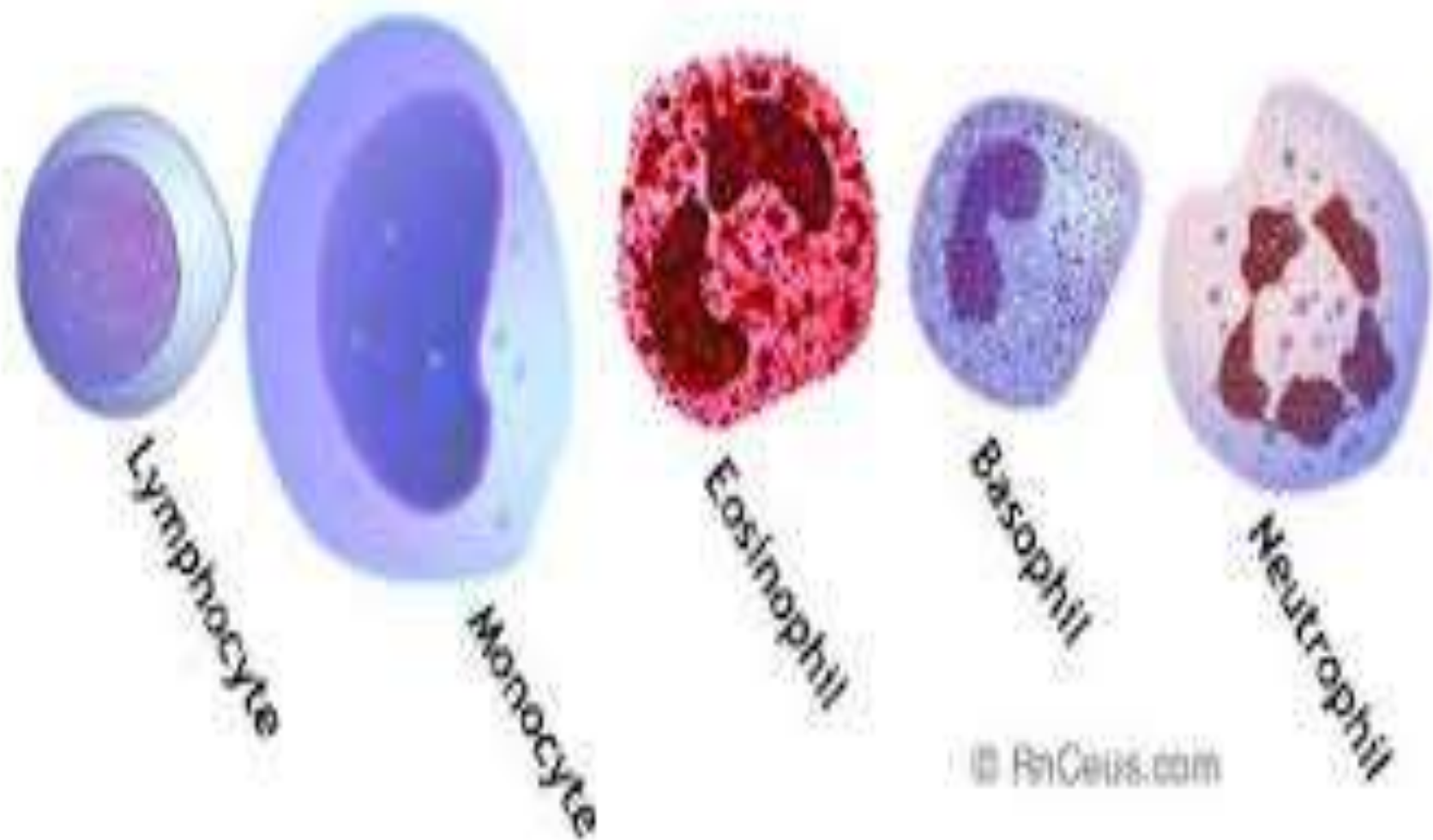
$N \times 200 =$

Differential Leukocyte Count (DLC) test procedure and result

web: www.labtestsguide.com | Email: info@labtestsguide.com

- A - Basophil
- B - Lymphocyte
- C - Monocyte
- D - Eosinophil
- E - Band cell
- F - Neutrophil





Thanks!

