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Diploma in Pharmacy 1st Year

Human Anatomy & Physiology

Experiment

To determine the RBC count of blood.

Aim:

To determine the RBC count of blood.

Reference :

Dr. Gupta G.D , Dr. Sharma Shailesh , Dr. Sharma Rahul Kumar ,
“Practical Manual of Human Anatomy and Physiology” Published by Nirali
Prakashan , Pg.No 74 - 76

Material and Apparatus Required

Neubauer chamber, RBC pipettes, Cover slip, RBC diluting fluid,
Needle, Spirit cotton.

Theory :

A RBC count is generally performed to get an estimate of full blood cell (FBC) count. The men have high level of RBC than the women. The level of the WBC decreases as the age increases A normal RBC count is 4.7 to 6.1 million cells per microlitre (cells/mcL), for men and 4.2 to 5.4 million cells/mcL., for women.

Procedure

- 1) The fingertip should be sterilised with cotton plug soaked in spirit and should be dried.
- 2) A bold prick should be made with needle for free flow of blood and then extract out the blood in a RBC pipette upto 0.5 mark.
- 3) The RBC pipette should be dipped in red blood cell diluting fluid and the diluting fluid should be sucked upto 101 mark.
- 4) The pipette should be rotated equally in the hands to mix the solution well by swirling.
- 5) The haemocytometer should be taken and placed on the flat surface of the work bench.

- 6) The cover slip should be placed on the counting chamber.
- 7) A small drop of diluted blood should be allowed to hang from the pipette, to sweep into the counting chamber by capillary action
- 8) There should be no air bubbles and the counting chamber should not be flooded.
- 9) The counting chamber should be left on the bench for 3 minute to allow the cells to settle.
- 10) The cells should be observed by placing the counting chamber on the mechanical stage of the microscope.
- 11) The centre room of the chamber should be focused and counting of the cells from upper left corner of the room should be started.
- 12) All counts of the four squares should be counted before moving to the centre square, which should be the fifth square to be counted.

Date Analysis

$$\frac{\text{No. of cells} \times \text{Dilution factor} \times \text{Depth factor} \times \text{Total ruled area}}{\text{Area count}}$$

Where,

Dilution factor 200

Depth factor = 10

Total ruled area = 25

Area count = 5

Result: The number of the red blood cells present in 1ml of blood sample is_____.