

Aim: Estimation of white blood cell count (TLC/ total leucocyte count)

REFERENCE:

Hematology, Practical Human Anatomy And Physiology, S.R. Kale et al., Nirali Prakashan, Eight Edition, 2002, pp. 16-22

Significance: The white blood cell count, typically measured in cells per cubic millimeter (or cells/ μ l), normally ranges from 5,000 to 10,000 in healthy individuals. Variations in this count are observed in various diseases. It increases (leucocytosis) in conditions like pneumonia, leukemia, meningitis, and smallpox, while it decreases (leucopenia) in conditions such as influenza, typhoid, and infectious hepatitis. WBC count can also rise during pregnancy and menstruation, making it a valuable diagnostic tool.

REQUIREMENTS: Neubauer chamber, WBC pipette, Coverslip, WBC diluting fluid, Needle, spirit, cotton.

PROCEDURE:

1. Sterilize the fingertip with a cotton plug soaked in 70% alcohol and let it dry.
2. Take a bold prick to have a free blood flow and draw the blood in a WBC pipette up to 0.5 mark.
3. Dip the WBC pipette in WBC diluting fluid up to 11 mark and rotate the pipette equally in your hands to mix the solution well by swirling.
4. Take the hemocytometer and place it on the flat surface of the workbench. Place the cover slip on the counting chamber.
5. Allow a small drop of diluted blood from the pipette to sweep into the counting chamber by capillary action. Make sure that there is no air bubble and there is no overfilling beyond the ruled area.
6. Leave the counting chamber on the bench for 3 minutes to allow the cells to settle. Observe the cells by placing the counting chamber on the mechanical stage of the microscope.

Focus on one of the corner squares of the counting chamber and count the white cells schematically, starting from the upper left small square of each Square. Repeat the count in all the four corners of the chamber. Apply the margin rules, i.e., count the cells lying on two adjacent margins and discard those on the other two.

DATA ANALYSIS:

No. of cells X Dilution factor X Depth factor

Area count

Where: Dilution factor = 20, Depth factor = 10, Area count = 4

RESULT: The number of white blood cells present in one μl of blood specimen is

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