

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). The term “white blood cell count” is also used more generally to refer to the number of white blood cells in your body. There are several types of white blood cells, and your blood usually contains a percentage of each type. Sometimes, however, your white blood cell count can fall or rise out of the healthy range.

Purpose of a WBC count

Having a higher or lower number of WBCs than normal may indicate an underlying condition. A WBC count can detect hidden infections within your body and alert doctors to undiagnosed medical conditions, such as autoimmune diseases, immune deficiencies, and blood disorders. This test also helps doctors monitor the effectiveness of chemotherapy or radiation treatment in people with cancer.

A normal WBC count

Infants are often born with much higher numbers of WBCs, which gradually even out as they age.

According to the University of Rochester Medical Center (UMRC), these are the normal ranges of WBCs per microliter of blood (mCL):

| Age range | WBC count (per mCL of blood) |
|----------------------------|------------------------------|
| newborns | 9,000 to 30,000 |
| children under 2 | 6,200 to 17,000 |
| children over 2 and adults | 5,000 to 10,000 |

Symptoms of an abnormal WBC count

The symptoms of a low WBC count include:

- body aches
- fever
- chills
- headaches

High WBC counts don't often cause symptoms, although the underlying conditions causing the high count may cause their own symptoms.

The symptoms of a low WBC count may prompt your doctor to recommend a WBC count. It's also normal for doctors to order a CBC and check your WBC count during an annual physical examination.

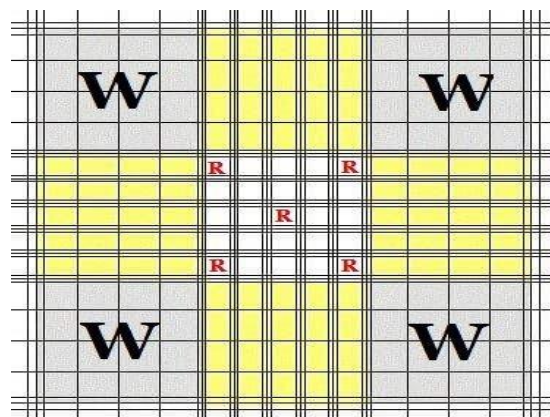
Principle

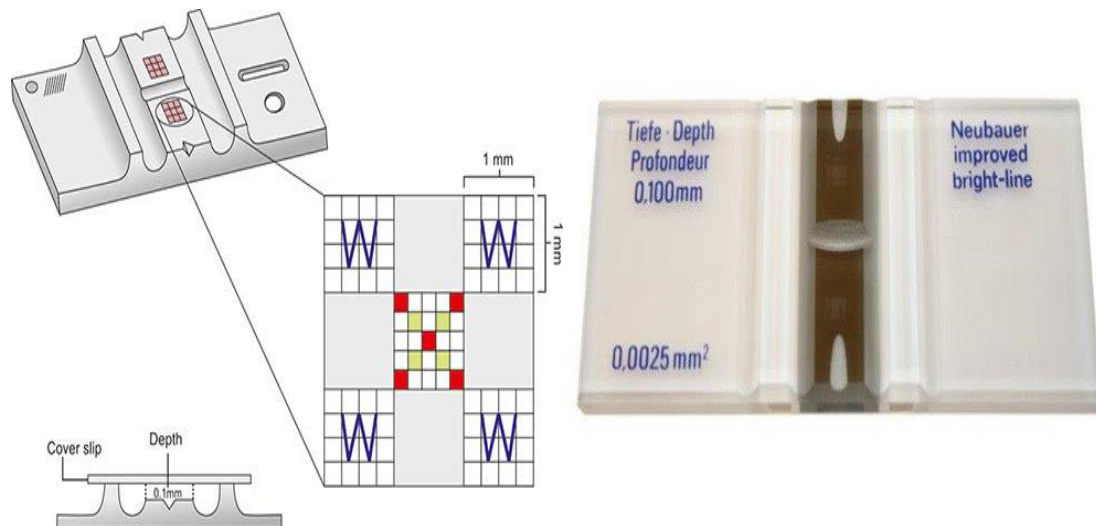
Whole blood collected in EDTA is diluted according to the type of cell count obtained.

- The diluted blood suspension is then placed in a chamber and the cell counted
- The count is multiplied by dilution factor and reported as number of cells per microliter (μL) of whole blood.

Material

- Hemocytometer with Neubauer grid.
- Cover glass/...,l
- Diluents
- Microscope





Methodology

Put the cover slip or glass slip on the top of grid area in the Chamber (use air tight technique)

- Dilute your sample: 1: 20 for WBC count
- Load your sample into the loading area in the chamber
- Count the cells in the 4 large squares for WBC
- calculate the number of cells counted / μL

Calculation

Cells/ μL = no. of cells in 1 large square x Dilution factor

volume factor (0.1) Dilution factor= reciprocal of dilution (20)

Volume factor = (width x length x height)= 0.1