



Department of Anesthesia Techniques  
Title of the lecture:-



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## Blood

is a body fluid in the circulatory system of humans and other vertebrates that delivers necessary substances such as nutrients and oxygen to the cells and transports metabolic waste products away from those same cells.

The blood cells are mainly red blood cells (also called RBCs or erythrocytes), white blood cells (also called WBCs or leukocytes) and platelets (also called thrombocytes).

There are several blood tests, the most important of which is a CBC (**Complete Blood Count**) test.

### CBC (Complete Blood Count)

- ✓ A complete blood count (CBC) is a blood test used to assess general health and to detect .A wide range of disorders, including anemia, infection and leukemia Whole blood has many components of blood and its characteristics.
- ✓ Where a blood sample is drawn intravenously and placed in a tube (EDTA) and then examined inside the device. The devices used to check the complete blood count are:

(**Sysmex - Mindray - Horiba – Ruby..**)





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## Analysis components and their symbols

### 1. Red blood cells (RBC)

- Men :- 4.5 – 5.5 million / Micro L
- Women:- 4 – 5 million / Micro L

### 2. White blood cells (WBC .)

- 4500 – 11000 / Micro L

### 3. (HGB) hemoglobin

- Men:- 12 – 16 g /dL
- Women:- 13.5 – 17.5 g / Dl

### 4. Red blood cell volume (MCV)

- 80 – 97 %

### 5. The average amount of hemoglobin in red blood cells (MCH)

- Its normal rate: - 34% - 28

### 6. Hemoglobin concentration in red blood cells (MCHC .)

- Normal range: 32-36 grams per deciliter.

### 7. platelets (PLAT)

- normal range :-(150,000 – 400,000 / Micro L)

### 8. Stacked cell volume (HCT)

- Its normal rate in men is 42 to 52%
- As for women, from 36 to 48 percent.