

# BLOOD



# BLOOD:

- Blood is a connective tissue. *संयोजी तंतु*
- Ph of blood is 7.4 (slightly basic/alkaline in nature) *अल्प क्षारीय*
- Average Volume of blood in an adult: (5-6) ltr
- Weight of blood: 7% of our body weight

## COMPOSITION OF BLOOD:

Blood is mainly composed of 2 parts:

1. Plasma (55%): liquid part of blood, yellow in colour
2. Cells/Corpuscles (45%): solid part of blood, red in colour.

*संयोजी*

*\* संयोजी तंतु*

*50kg → 3.5kg*

*60kg → 4.2kg*

*अल्प क्षारीय*

*50-60 kg*



## Composition of Plasma:

1. Water: 92%
2. Plasma Protein: 7%

Plasma protein mainly consists of 4 protein: Albumin, Globulin, Prothrombin, Fibrinogen

3. Salts and Minerals: 1% (Sodium, Calcium, HCO<sub>3</sub><sup>-</sup>)

Note: Yellow colour of plasma is due to a pigments namely Bilirubin, produced by Liver.

## FUNCTION OF PLASMA:

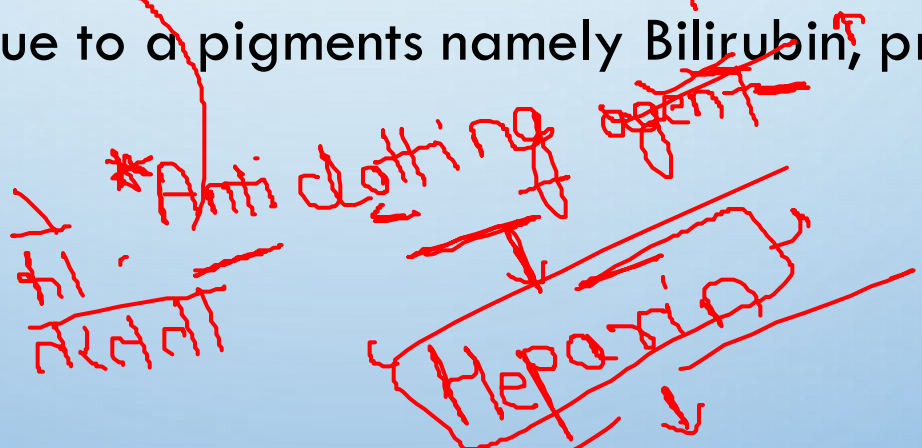
1. Provides fluidity to blood.
2. Helps in blood clotting.
3. Regulates the Ph of blood.
4. Regulates body temperature.

Yellow Pigment Blood clotting



Handwritten notes: 'H<sub>2</sub>O' and 'Salt' with arrows pointing to the 'Salts and Minerals' list item.

Handwritten note: '\* Anti clotting agent' with an arrow pointing to the 'Blood clotting' part of the note above.



Handwritten note: 'PH' with an arrow pointing to the 'Regulates the Ph of blood' list item.

Handwritten note: 'Liver' with an arrow pointing to the 'Hepatitis' box above it.

<p>Cell/Corpuscles (45)</p>	<p>RBC RED BLOOD CORPUSCLES</p> <p>लाल रक्तिका कणिका</p>	<p>WBC WHITE BLOOD CELL</p> <p>श्वेत रक्तिका कणिका</p>	<p>PLATELETS</p> <p>थ्रॉम्बोसाइट</p>
<p>SCIENTIFIC NAME:</p> <p>WBC - 8000 RBC: 8000 x 600 48mm</p>	<p>ERYTHROCYTES</p> <p>Red Cells/Corp.</p>	<p>LEUKOCYTES</p> <p>White ← Leuk</p>	<p>THROMBOCYTES</p>
<p>NUMBER(/0.001ML):</p>	<p>(5- 5.5)MILLION* FEMALE: (4.5- 5)MILLION MALE: (5-5.5)MILLION AVERAGE NUMBER :5 MN (5-6) - (25-30) trillion 12 10</p>	<p>(4000-11,000)</p>	<p>(1.5- 4.5)LAKHS</p>
<p>DISEASE:</p> <p>RBC:WBC: Plat - 600:1:40</p>	<p>DEFICIENCY: ANAEMIA अस्थिर रक्तिका EXCESS: POLYCYTHEMIA</p>	<p>DEFICIENCY: MANY DISEASE EXCESS: BLOOD CANCER (LEUKEMIA) 20000</p>	<p>DEFICIENCY: BLEEDING/ HAEMMORHAGE EXCESS: THROMBOSIS Blee</p>

## RBC (ERYTHROCYTES):

- Red colour of RBC is due to a protein namely Hemoglobin.
- Hemoglobin: It is a protein found in our blood and composed of a metal IRON.
- Function of HB:
  1. Transportation of Oxygen throughout the body that helps in energy formation.
  2. Exhalation of CO<sub>2</sub>.

Facts:

Shape: Biconcave

Nucleus: No nucleus, No Mitochondria

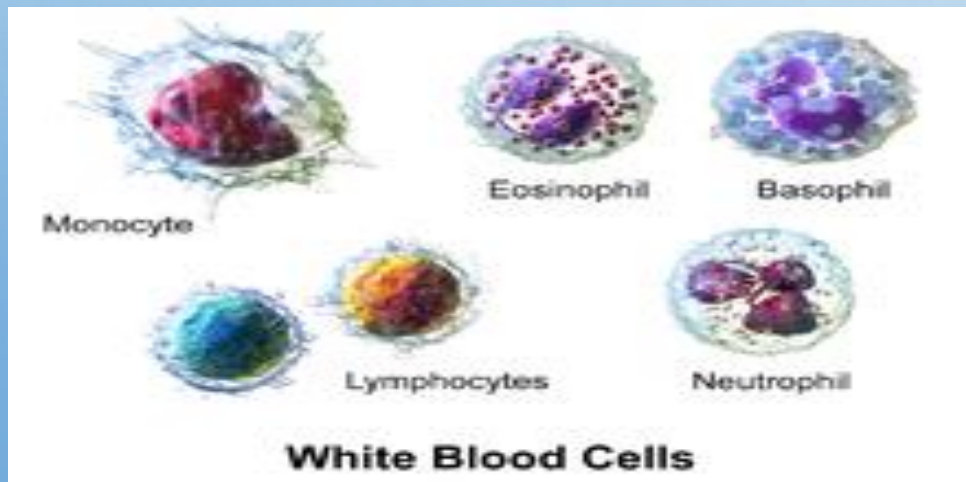
Life span: 120 days

Origin: Red Bone Marrow

Graveyard: Spleen and Liver

## WBC (LEUKOCYTES):

- Also known as “Soldier of body”/ “bodyguard of body”
- Function: To fight against disease i.e. to provide immunity
- **Facts:**
- Shape: Irregular/amoeba shape
- Nucleus: Nucleated
- Life span: (2-5)days/ up to 21 days
- Origin: Bone Marrow
- Graveyard: Liver/ in the blood



## PLATELETS (THROMBOCYTES):

- Smallest blood corpuscles.
- Function: Helps in blood clotting
- **Facts:**
- Shape: Irregular (amoeba shape)
- Nucleus: No Nucleus
- Life span: 7 days
- Origin: Bone marrow
- Graveyard: Spleen

