

Blood, Brain, Disease, Nutrition

Zoology जंतु विज्ञान - Animals

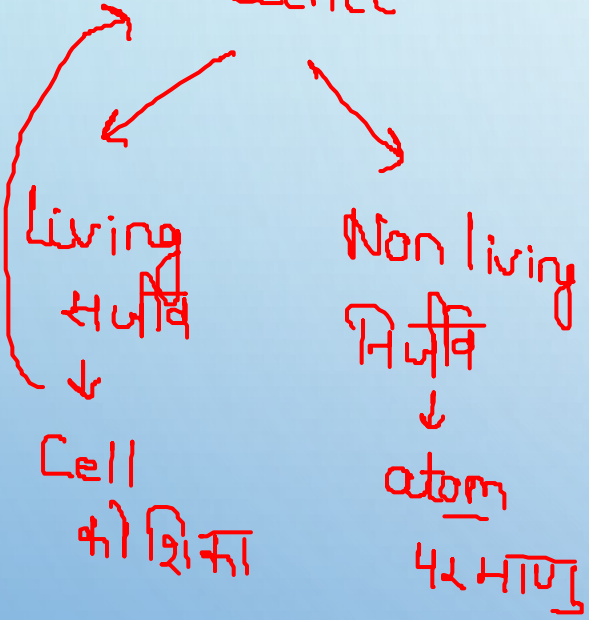
Botany - Plants

# BLOOD

रुधिर / रक्त

Biology जीव विज्ञान

life ↓  
Science



Bio, zoo  
↓  
Aristotle  
अरिस्तो  
Botany - Theophrastus

Phy, che  
=

# BLOOD: रक्त

50 kg - 3.5 kg  
80 kg - 6.3 kg

- Blood is a connective tissue. संयोजी ऊतक
- Ph of blood is 7.4 (slightly basic/alkaline\* in nature)  
→ अल्प क्षारीय / क्षारीय
- Average Volume of blood in an adult: (5-6) ltr  
औसत आयतन \*
- Weight of blood: 7% of our body weight  
(50-70) kg  
शरीर के वजन का 7%.

PH - (0-14)

→ less - acid than 7  
अल्प

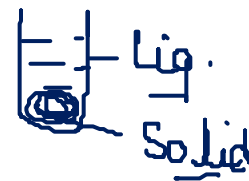
→ 7 - Neutral

→ 7 से ज्यादा

↓  
Base

## COMPOSITION OF BLOOD:

Blood is mainly composed of 2 parts:



1. Plasma (55%): liquid part of blood, yellow in colour  
रक्तप्लाज्मा

2. Cells/Corpuscles (45%): solid part of blood, red in colour.  
कोशिका / कणिका

## Composition of Plasma:

1. Water: 92%  
जल
2. Plasma Protein: 7%  
प्लाज्मा प्रोटीन

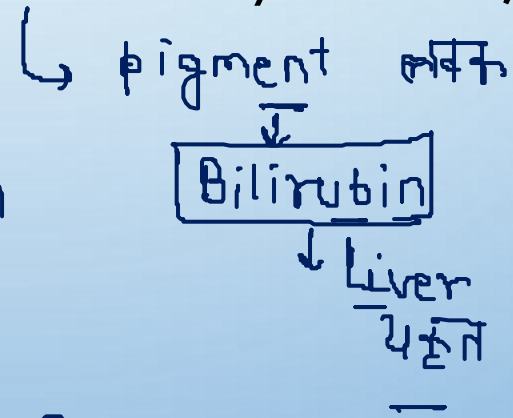
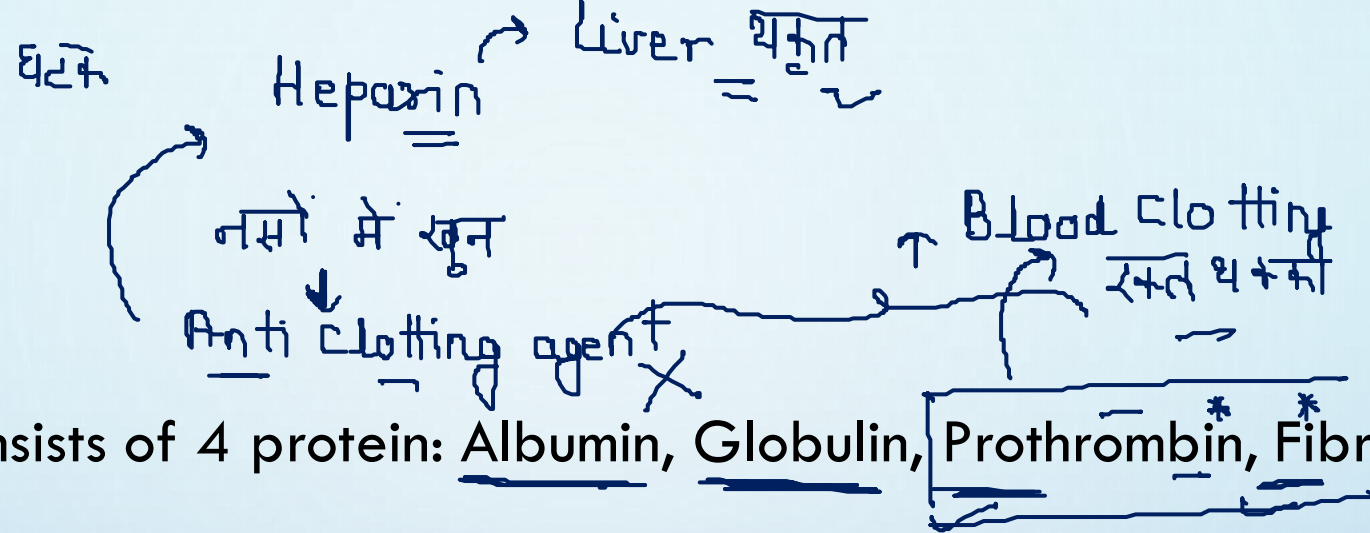
Plasma protein mainly consists of 4 protein: Albumin, Globulin, Prothrombin, Fibrinogen

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

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

## FUNCTION OF PLASMA:

1. Provides fluidity to blood. गतिशीलता प्रदान करना
2. Helps in blood clotting. रक्त को थक्का बनाने
3. Regulates the Ph of blood. रक्त के pH को नियंत्रित करना
4. Regulates body temperature. शरीर के ताप को नियंत्रित करना





	RBC RED BLOOD CORPUSCLES लाल रुधिर कणिका	WBC WHITE BLOOD CELL श्वेत रुधिर कोशिका	PLATELETS थ्रम्बोसाइट्स
SCIENTIFIC NAME:	ERYTHROCYTES ↓ Red Cell/corp.	LEUKOCYTES ↓ White <u>Leukemia</u>	THROMBOCYTES ↓ Plat.
NUMBER(/0.001ML): WBC: 8000 RBC: 8000 x 600 = 48 lakh 4.8 mn Plat: 8000 x 40 = 3.2 lakh	4.5- 5.5)MILLION (10 Lakh) FEMALE: (4.5- 5)MILLION MALE: (5-5.5)MILLION AVERAGE NUMBER :5 MN औसत संख्या।	(4000-11,000) RBC : WBC : Plat 600 : 1 : 40	(1.5- 4.5)LAKHS
DISEASE:	DEFICIENCY: ANAEMIA EXCESS: POLYCYTHEMIA	DEFICIENCY: MANY DISEASE EXCESS: BLOOD CANCER (LEUKEMIA)	DEFICIENCY: BLEEDING/ HAEMMORHAGE EXCESS: THROMBOSIS

## 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

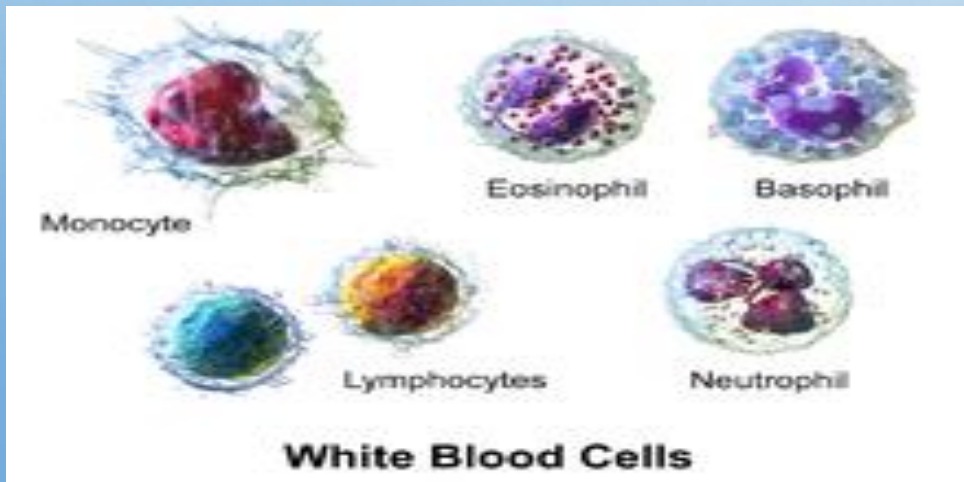
Life span: 120 days

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

• PROCESS OF BLOOD CLOTTING:

