

Blood, Brain, Disease, Nutrition

Zoology जंतु विज्ञान - Animals

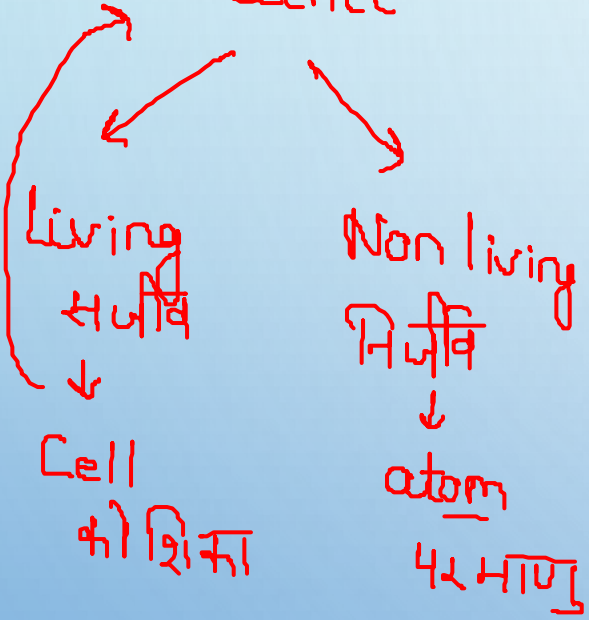
Botany - Plants

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

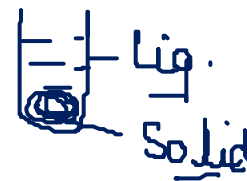
→ 7 - Neutral

→ 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

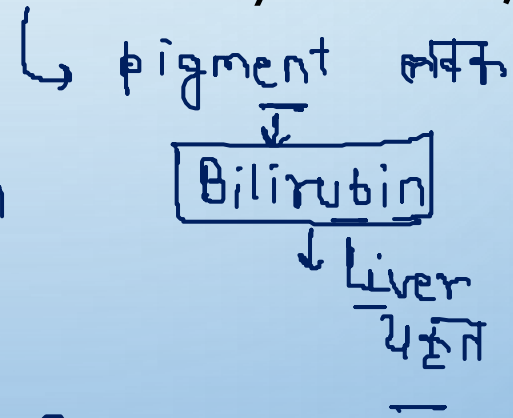
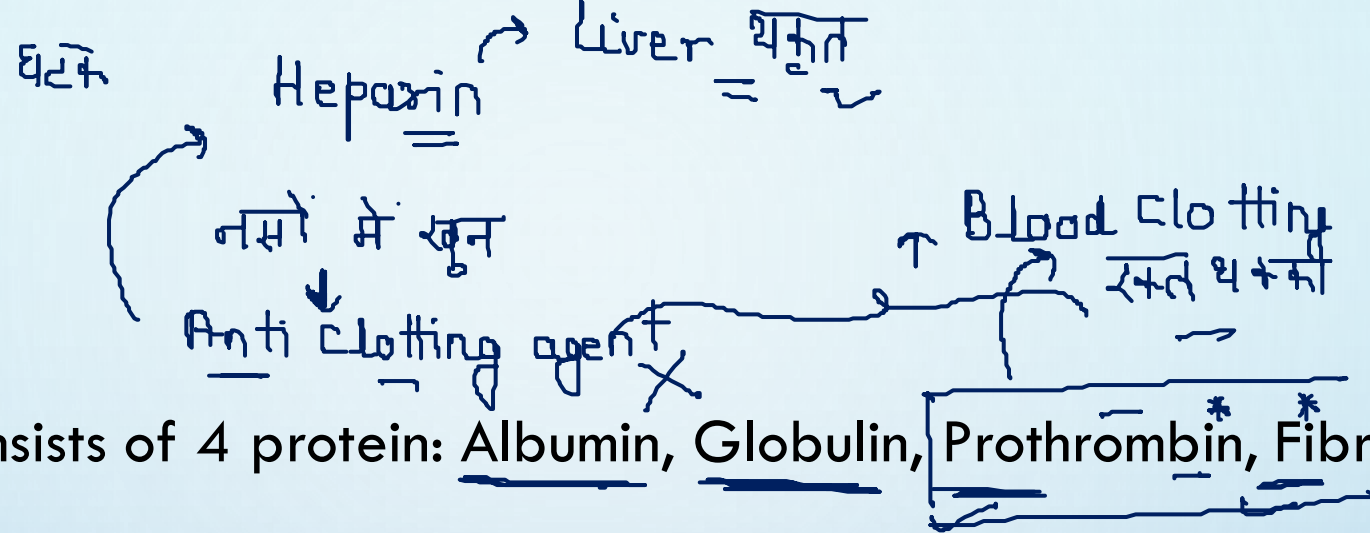
Plasma protein mainly consists of 4 protein: Albumin, Globulin, Prothrombin, Fibrinogen

3. Salts and Minerals: 1% (Sodium, Calcium, HCO₃⁻)
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 रक्तसू	(1.5- 4.5)LAKHS
DISEASE:	DEFICIENCY: ANAEMIA अवतता/रुधिर क्षीणता EXCESS: POLYCYTHEMIA	DEFICIENCY: MANY DISEASE EXCESS: BLOOD CANCER (LEUKEMIA)	DEFICIENCY: BLEEDING/ HAEMMORHAGE EXCESS: THROMBOSIS

RBC (ERYTHROCYTES):

Red Blood Corpuscle लाल रुधिर कणिका

- लोहा Iron → Haemoglobin → Protein

'Haematology'

Red colour of RBC is due to a protein namely Hemoglobin.

Function of HB:

1. Transportation of Oxygen throughout the body that is helps in energy formation.

ऑक्सीजन का संचार

ऊर्जा बनाने में सहायता

2. Exhalation of CO₂.

श्वसोच्छ्वास



Facts:

Shape: Biconcave



द्विअवतलीय

* Nucleus: No nucleus, No Mitochondria

केंद्रक

केंद्र करहित

Brown → Bone Marrow
अस्थि मज्जा
↓
RBC

* Life span: 120 days

जीवन काल

Origin: Red Bone Marrow

शरीर का रक्त कोष

Graveyard: * Spleen and Liver

कण्डिस्तान: प्लीहा यकृत

Blood Bank of body

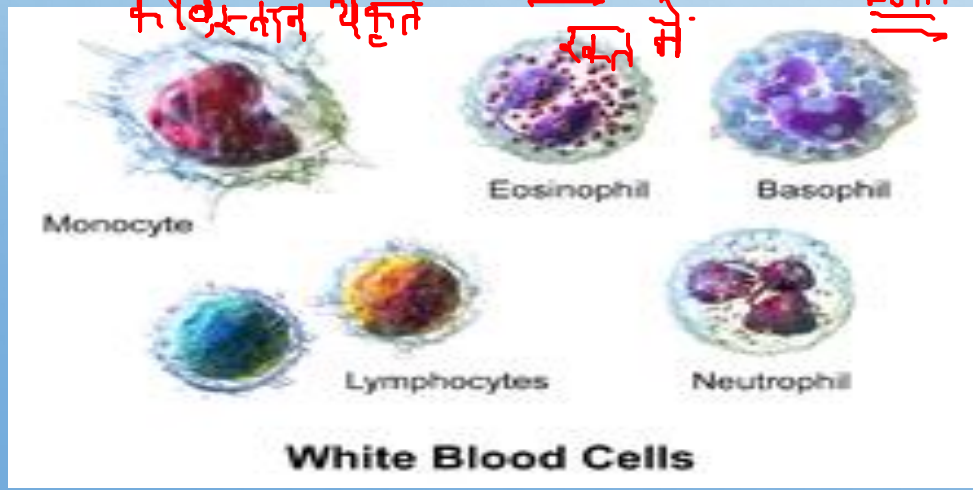
WBC (LEUKOCYTES): - श्वेत रक्तिक कोशिका

- Also known as "Soldier of body" / "bodyguard of body"
शरीर का सैनिक शरीर का अंगरक्षक
- Function: To fight against disease i.e. to provide immunity

Facts:

- Shape: Irregular/amoeba shape
- Nucleus: Nucleated केंद्रकयुक्त
- Life span: (2-5)days/up to 21 days
जीवनकाल
- Origin: Bone Marrow मांखि मज्जा
- Graveyard: Liver/ in the blood
कविरतन यकृत

Irregular अनियमित / Amoeba shape
द्विनिरो धक समता Fight =



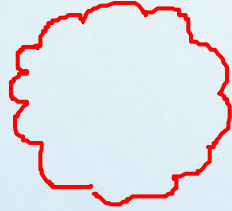
कविरतन यकृत रक्त में Both

PLATELETS (THROMBOCYTES): विम्बाणु

- Smallest blood corpuscles. सबसे छोटी रक्तधर कणिका
- Function: Helps in blood clotting रक्त का थक्का जमाने में

Facts:

- Shape: Irregular (amoeba shape) अनिपमित



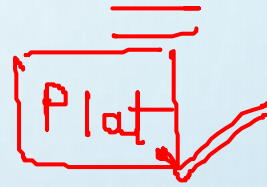
- Nucleus: No Nucleus, No mito

- Life span: 7 days (1 week) केन्द्ररहित

- Origin: Bone marrow आस्थि मज्जा

- Graveyard: Spleen लीला

Plasma



WBC > RBC > Plat

• PROCESS OF BLOOD CLOTTING:

