

## Blood (Introduction)

- Study of Blood is called Haematology.
- Blood is Mobile Connective tissue.
- Blood is derived from Embryonic Mesoderm.
- It is five times more viscous & heavier than water.
- Its sp. gravity is 1.05 - 1.06.
- Its O.P (Osmotic pressure) is 6.7 atmosphere.
- Its pH is 7.4, so slightly alkaline, & helps in transport of respiratory gases (O<sub>2</sub> & CO<sub>2</sub>).
- It is a Buffer fluid.
- The total volume of Blood in a normal man is 5 litre (3 1/2 kg), & percent of body weight, & 1/13th part of body volume in a 70kg man.
- Blood is red in colour due to presence of Hb-pigment (Haemoglobin pigment) or Respiratory pigment.
- Blood is also, Blue, Green, or Brown.

### General Components / Contents of Blood.

- There are three varieties of cells or corpuscles present in Blood.
- Erythrocytes (RBC)
- Leucocytes (WBC)
- Blood Platelets (Thrombocytes)

~~Erythrocytes~~

Besides, Blood contains Plasma.

- Plasma
- It's a pale-yellow (straw coloured) alkaline fluid part of Blood.
- It forms 55% of total Blood volume (8.5 lit) & 5% of body wt.
- It's transparent fluid.
- It's composed of:
  - Water - 90-92%, Plasma proteins - 7-8%
  - It's formed in liver.
  - It's of three types

- Serum Albumin, - It maintains viscosity & hence O.P. of Blood & B.P.
- Serum Globulin (Gamma globulin or Immunoglobulin) - It forms Antibodies.
- Fibrinogen, - It's a characteristic blood - protein, which helps in Blood Clotting.
- Glucose - 0.1%
- Mineral salts - 0.85%
- Other useful substances - Amino acid (Amino acid) Enzymes, hormones, vitamins, Antibodies, Antitoxin
- metabolites : urea, uric acid creatin, creatinin xanthine etc.

### Function of Plasma

Plasma helps in several ways.

- transfer of O<sub>2</sub>, CO<sub>2</sub>, food, hormones, Wastes (urea) etc.
- Antibodies formation
- Blood clotting
- Maintenance of Blood pH,
- Temperature regulation
- Healing of wounds.
- Protection (Defence).

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Cellular components / Blood Corpuscles / Formed Elements