**Circulatory System**

Circulatory System

The group of organs which help in transportation of nutrients and oxygen to the tissues and collects their waste products is called circulatory system or internal transportation

Blood and its composition

//chart

Blood

Blood is a fluid connective tissue which consists of 55% plasma and 45% blood cells.

A healthy human adult body has 4.5 to 6 liters of blood in average.

1. Plasma

Plasma is a transparent, pale yellowish fluid which is non-living containing several substance-like hormones, antibodies etc.

It consists of 90% water and 10% of solids in the form of protein, fats, minerals, and carbohydrates.

Major functions of plasma

1. It transports digests food to different organs and tissues of the body.
2. It removes the major portion of carbondioxide from the tissue.
3. It regulates body temperature and transport the hormones.
4. It contain protein like fibrinogen and prothrombic which help in the clothing of blood at cits.
5. Blood Corpuscles/ Blood cells
6. Red blood corpuscles (RBCs)

Another Name: Erythrocytes.

Shape: Circular, biconcave, disc shaped.

Nucleus: Absence.

Number: 45 to 50 lakhs/cubic mm.

Formed: Bone-marrow.

Life span: 127 days.

Color: Red.

Disorder: Anemia (when less in amount).

Destroy: Liver and spleen.

Function: It carries oxygen from lungs to body tissues for respiration.

1. White blood corpuscles (WBCs)

Another Name: Leukocytes.

Shape: irregular.

Nucleus: Present (multi-lobed nuclei).

Number: 6-10 thousand/cubic mm.

Formed: Bone-marrow and lymph glands.

Life span: 15 days.

Color: colorless.

Disorder:

leukopenia (when less in amount).

leukemia (when more in amount).

Destroy: Liver.

Function:

Produces antibodies.

Increases immune power.

1. Blood Platelets

Another Name: Thrombocytes.

Shape: Rounded, oval, or spherical.

Nucleus: Absence.

Number: 2 to 4 lakhs/cubic mm.

Formed: Bone-marrow.

Life span: 2 to 3 days.

Color: colorless.

Destroy: spleen.

Function: Heeling of wounds.

Function of blood

1. Transportation

Blood carries hormones, oxygen, water and nutrients to the cells and collect the unnecessaries wastage from cells to excretory organs.

1. Regulation

Balance the body temperature and maintain body temperature.

1. Protection

Prepare antibodies and build up immune system and prevent from over bleeding by clotting.

Haemoglobin (Hb)

The iron containing pigment(protein) contain in the blood is called haemogloblin. Blood is red due to presence of haemogloblin.

Anaemia

The disease caused due to less number of RBCs is called anaemia.

leukemia

The disease caused due to more number of WBCs is called leukemia.

leukopenia

The disease caused due to less number of WBCs is called leukopenia.

**Heart**

Heart

Heart is the hollow conical muscular organ made up of cardiac muscle and pumps out blood is called heart.

// pic of heart

Internal structure of Heart

//pic of internal structure

Pericardium

The fibrous sac that surrounds the heart is called pericardium.

Pericardium cavity

The pericardial cavity is the potential space forms between the two layers of serous pericardium around heart.

Pericardial fluid

Pericardial fluid is the serious fluid secreted by the serious layer of the pericardium in to pericardial cavity.

Function of pericardial fluid

1. It allows frictionless movement of heart.
2. It protects the heart from mechanical and external injuries and socks.

Functions of Different parts of the heart

1. Functions of Four chambers of the heart
2. Right auricle

It receives deoxygenated blood from different parts of the body and pumps it into the right ventricle.

1. Right ventricle

It receives deoxygenated blood from right auricle and pumps it into the lungs for purification.

1. Left auricle

It receives oxygenated blood from the lungs and pumps it into the left ventricle.

1. Left ventricle

It receives oxygenated blood from left auricle and pumps it into different parts of the body.

1. Functions of four blood vessels of heart
2. Venacave

Venacavas transport deoxygenated blood from different parts of the body into the right auricle of the heart.

1. Pulmonary arteries

They carry deoxygenated blood from the right ventricle of the heart to the lungs for its purification.

1. Pulmonary veins

They carry oxygenated blood from the lungs to the left auricle of the heart.

1. Aorta

It carries pure blood from the left ventricle of the heart to different parts of the body.

1. Functions of four Valves of the heart
2. Tricuspid valve

It blocks the black flow of the blood from the right ventricle to the right auricle when ventricles are contracted.

1. Bicuspid valve

It blocks the black flow of blood from left ventricle to the left auricle when ventricle is contracted.

1. Pulmonary valve

It blocks the black flow of blood from the pulmonary arteries to the right ventricle when the ventricle is relaxed.

1. Aortic valve

It blocks the back flow of blood from aorta to the left ventricle when the ventricles are relaxed.

Heart beat

The rhythemic contraction and relaxation of the heart is called heart beat.

Systole

The sequence of contraction of heart is called systole.

Diastole

The sequence of relaxation of heart is called diastole.

//>> Working method of heart

Blood vessels

The hollow and tubular vessels through which blood flows is called blood vessels.

Types of Blood Vessels

1. Arteries

The blood vessels which carry the blood away from the heart is called arteries.

//pic of arteries

1. Veins

The blood vessels which bring the blood into the heart from different parts of the body are called veins.

1. Capillaries

The very fine network of blood vessels that connect the arteries to the veins is called capillaries.

//pic of capillaries.

Blood circulation

Types of blood circulation

1. Systemic circulation

The circulation of blood between the heart and different parts of the body except the lungs is called systematic circulation.

1. Pulmonary circulation

The circulation of blood between heart and the lungs is called pulmonary circulation.

Blood Pressure

The pressure exerted by flow of blood on the wall of arteries is called Blood pressure.

Systolic Pressure

The pressure of blood on the artery when the ventricle is contacted is called systolic pressure. In a healthy person, its value is 100-140mm of Hg.

Diastolic Pressure

The pressure of blood on the artery when the ventricle is relaxed is called diastolic pressure. In a healthy person, its value is 60-90mm of Hg.

Sphygmomanometer

The instrument used to measure the blood pressure is called sphygmomanometer.

Normal Blood Pressure of Healthy person

The Normal blood pressure of healthy person is 120/80 mm of Hg.

Some Disease related to blood circulatory system

1. High Blood Pressure

If the Blood pressure is more than the normal, it is called high blood pressure. It is also called hypertension.

Causes

* 1. It is caused by smoking.
  2. Lack of Physical activities.
  3. Overweight or obese
  4. More amount of salt in diet.
  5. Too much consumption of alcohol.
  6. More use of fatty, spicy and fried food.

Prevention

* 1. Eat a balanced diet with less amount of salt.
  2. Do physical activity regularly.
  3. Maintain weight,
  4. Be a positive thinker and manage stress.