Cardiovascular system

Blood circulates through a network of vessels throughout the body to provide cells with oxygen and nutrients and helps dispose of metabolic wastes. The heart pumps the blood around the blood vessels.

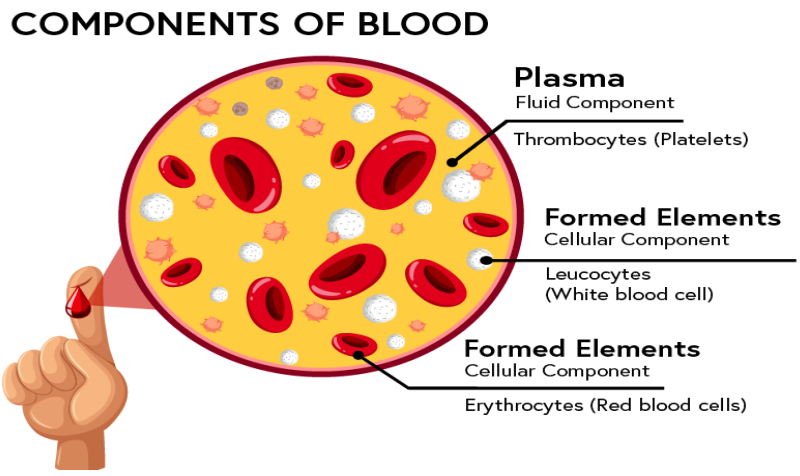
Functions of the cardiovascular system

1-Circulates OXYGEN and removes Carbon Dioxide. Provides cells with nutrients.

2-Removes the waste products of metabolism to the excretory organs for disposal.

3-Protects the body against disease and infection. Clotting stops bleeding after injury.

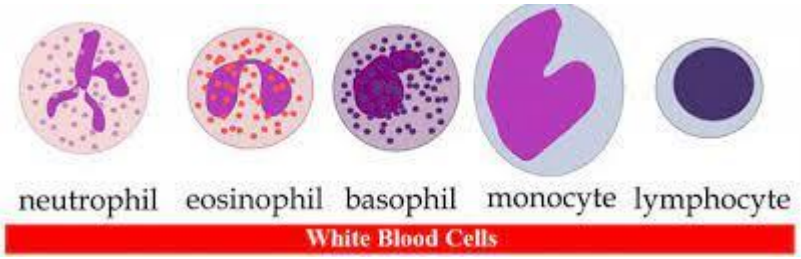
4-Transports HORMONES to target cells and organs. Helps regulate body temperature



Blood is made up of (cells) and fluids (plasma) The plasma is largely water, containing proteins, nutrients, hormones, antibodies, and dissolved waste products

Erythrocytes: (red cells) are small red disk shaped cells. They contain hemoglobin, which combines with oxygen in the lungs and is then transported to the body's cells. The hemoglobin then returns carbon dioxide waste to the lungs. Erythrocytes are formed in the bone marrow

Leukocytes: (whitecells) help the body fight bacteria and infection.

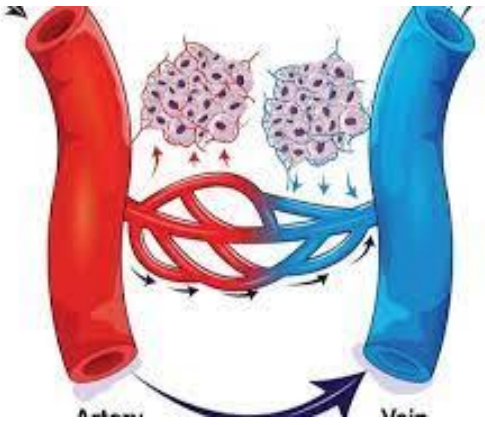


tissue is damaged or has an infection the number of leukocytes increases. Leukocytes can be leukocytes classed as s granular or non- granular. There are three types of granular eosinophils neutrophils and basophils and two types of non granular (monocytes and lymphocyte)

Thrombocytes: (platelets) aid the formation of blood clots by releasing various protein substances. When the body is injured thrombocytes disintegrate and cause a chemical reaction with the proteins found in plasma, which eventually create a thread like substance called fibrin

General types of blood cells:

Functions of blood and circulation:



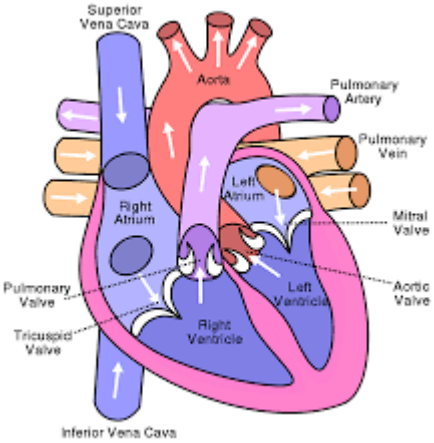
Arteries: carry oxygenated blood away from the heart. They are thick hollow tubes which are highly ELASTIC which allows them to dilate (widen) and constrict (narrow) as blood is forced down them by the heart. Arteries branch and re-branch, becoming smaller until they become small arterioles which are even more elastic. Arterioles feed oxygenated blood to the capillaries. The AORTA is the largest artery in the body.

Capillaries : distribute the nutrients and oxygen to the body's tissues

and remove deoxygenated blood and waste.

Venules : very small veins merge into VEINS which carry blood back to the heart. Veins carry deoxygenated blood towards the lungs where oxygen is received via the pulmonary capillaries The pulmonary Veins then carries this oxygenated blood back to the heart.

The **heart** is a hollow muscular organ. The right side of the heart receives blood and sends it to the lungs to be oxygenated, while the left side receives oxygenated blood from the lungs and sends it out to the tissues of the body. The Heart has three layers; the ENDOCARDIUM inner layer EPICARDIUMmiddle layer and MYOCARDIUM outer layer. The heart is protected by the PERICARDIUM which is the protective membrane surrounding it.



The heart has FOUR CHAMBERS, in the lower heart the right and left ventricles and in the upper heart the right and left Atria

Summary: (Cardiovascular System)

The cardiovascular system is composed of the heart and blood vessels.

vein :carry blood throughout the body.

Arteries: carry blood from the heart to all cells of the body.

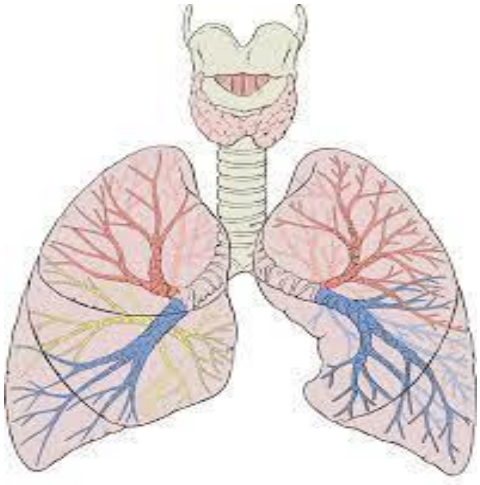
Capillaries are microscopic vessels that join the arterial system with the venous system.

Veins: return blood to the heart. The valves are small structures within veins that prevent the backflow of blood.

The **heart**: is a muscular pump that propels blood to entire body through a closed vascular system. The heart is divided into four chambers two upper chambers - right atrium and left atrium lower chambers - right ventricle and left

Respiratory system

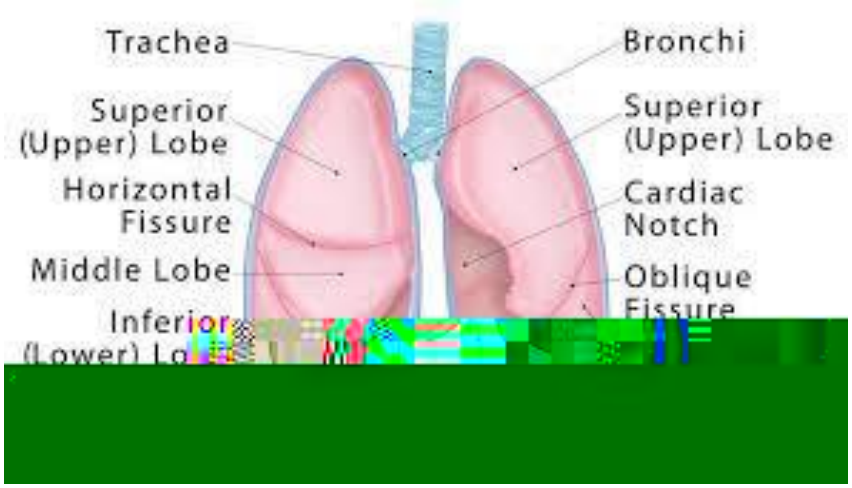
The respiratory tract is divided into the upper airways and lower airways. The upper airways or upper respiratory tract includes nasal cavity pharynx, and the the larynx... The lower airways or lower respiratory tract includes trachea, bronchi and the lungs..



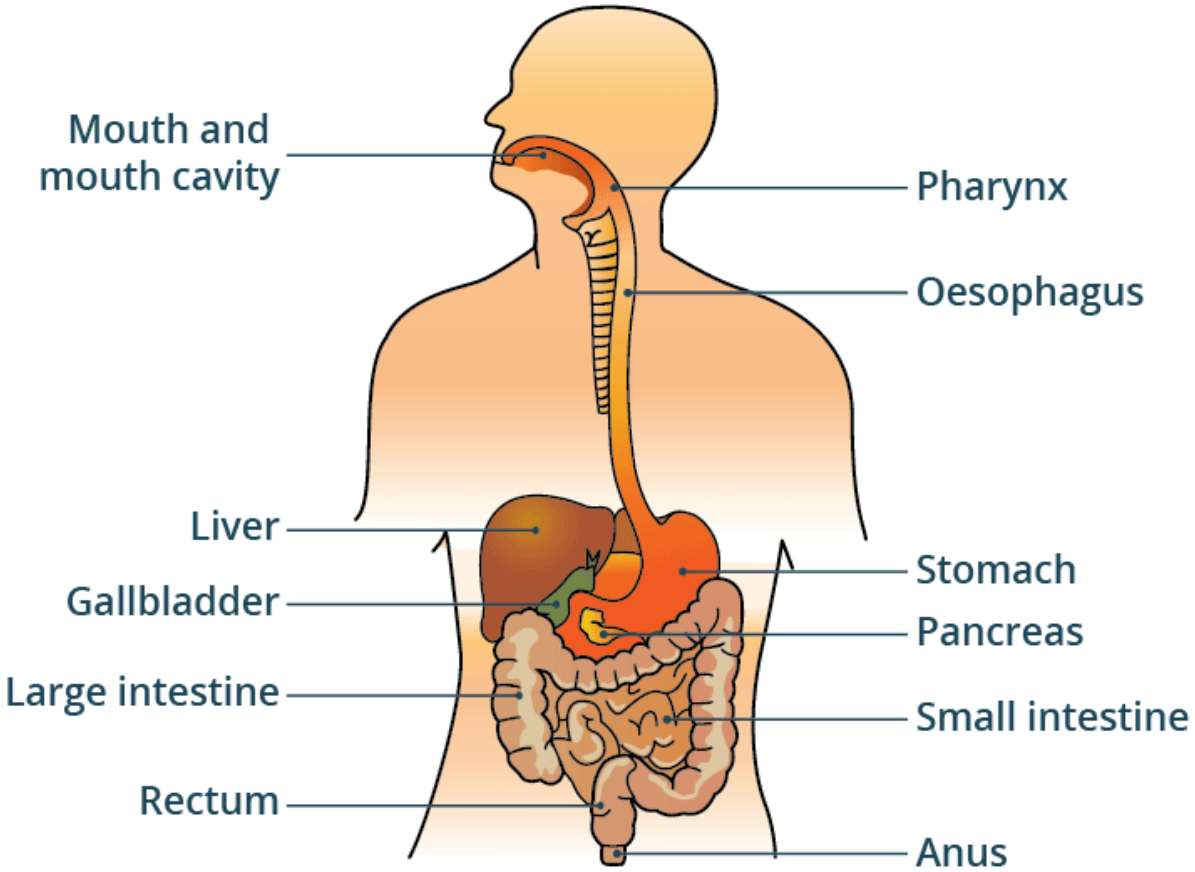
The trachea divides into two branches called bronchi, One branch leads to the right lung and the other to the left lung. Each bronchus divides into

The lungs are divided into lobes: three lobes in the right lung and two lobes in the left lung. The space between the right and left lungs is called the mediastinum. The lungs are located in the chest. (thoracic cavity) on either side of the heart in the rib cage.

A serous membrane, the pleura, covers the lobes of the lungs and folds over to line the walls of the thoracic cavity



The digestive system



also called the gastrointestinal (GI) system, consists of a digestive tube and several accessory organs whose primary function is to break down food, prepare it for absorption, and eliminate waste. The GI tract, extending from the mouth to

regions:

- mouth

-pharynx

- stomach

- small intestine

the duodenum, jejunum, and ileum

- esophagus

large intestine

cecum, colon, and rectum

- anus.

Glands:

1−**Salivary Glands** are exocrine glands that produce saliva through a system of ducts. There are three pairs of salivary glands, which secrete saliva. Located around the oral cavity the parotid, the submandibular, and the sublingual glands.

2-**liver**: The liver is the largest internal organ of the body it is located below the diaphragm.

3− **The gallbladder** is a saclike structure on the inferior surface of the liver, serves as a storage area for bile, which is produced by the liver.

4− **Pancreas**: is an elongated organ that lies posterior and slightly inferior to the stomach.

the anus, varies in size and structure in several distinct