**The Human Heart**

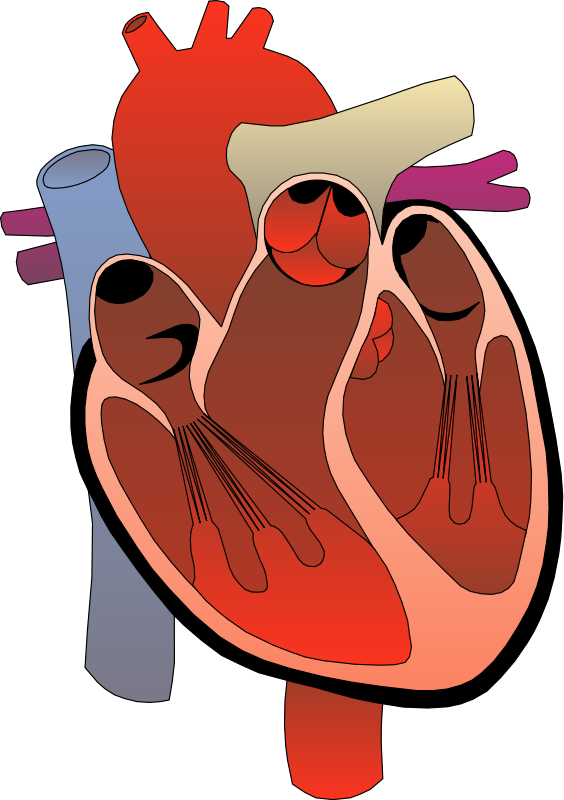


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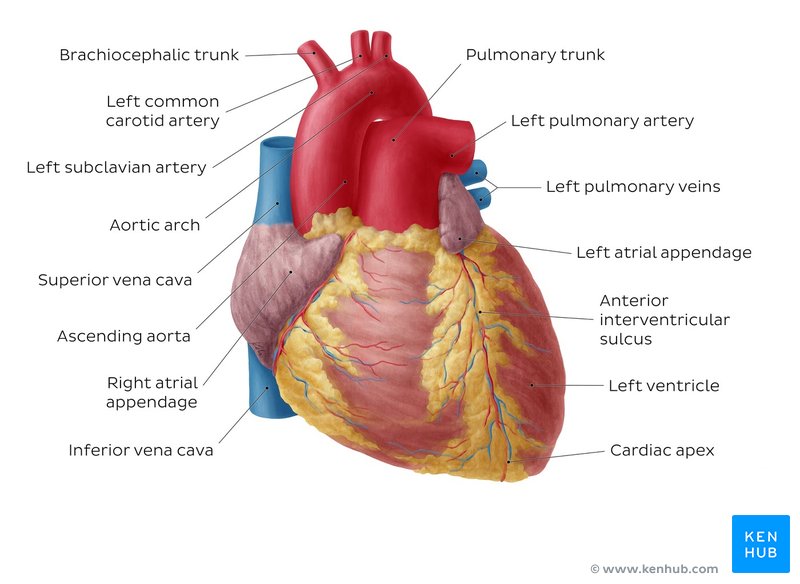
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# **About:-**

The human heart is an organ that pumps blood throughout the body via the circulatory system, supplying oxygen and nutrients to the tissues and removing carbon dioxide and other wastes.

* The four main functions of the heart are:-
* Pumping oxygenated blood to the other body parts.
* Pumping hormones and other vital substances into different parts of the body.
* Receiving deoxygenated blood and carrying metabolic waste products from the body and pumping it to the lungs for oxygenation.
* Maintaining blood pressure.

# **Exterior parts of the heart:-**



## **Aorta:-**

The aorta is the largest artery in the body. The aorta begins at the top of the [left ventricle](https://www.medicinenet.com/image-collection/heart_detail_picture/picture.htm), the heart's muscular pumping chamber. The heart pumps blood from the left ventricle into the aorta through the [aortic valve](https://www.medicinenet.com/heart_disease_pictures_slideshow_visual_guide/article.htm). Three leaflets on the [aortic](https://www.medicinenet.com/heart_disease_pictures_slideshow_visual_guide/article.htm) valve open and close with each heartbeat to allow one-way flow of blood.

The aorta is a tube about a foot long and just over an inch in diameter. The aorta is divided into four sections:

* The [ascending aorta](https://www.medicinenet.com/heart_disease_pictures_slideshow_visual_guide/article.htm) arises
* The aortic arch curves over the heart
* The descending thoracic aorta
* The abdominal aorta

## **II. Superior vena cava:-**

The superior vena cava is very important for the function of the cardiovascular system since it largely contributes to the input of blood to the right atrium. Any hypertensive process in the right half of the heart or the pulmonary circulation retrogradely affects both superior and inferior venae cavae. This is important since the veins are not adjusted to high pressures, which can result in forming an aneurysm or even rupture of the wall of the SVC.

## **III. Left Pulmonary veins:-**

There are four pulmonary veins in the human body, all of which bind to the left atrium of the heart. The pulmonary arteries carry oxygen-depleted blood from the heart to the lungs. The blood returns to the heart through the pulmonary veins until it has been oxygenated. The heart then pumps freshly oxygenated blood throughout the body. Pulmonary veins differ from other veins in the body in that they transport deoxygenated blood back to the heart from the rest of the body. The left pulmonary veins bind to the left lung, and the lungs are made up of hollow air sacs known as alveoli. This is the process of removing oxygen from inhaled air. This also serves as a gas exchange system.

## **IV. Inferior vena cava :-**

At the level of the fifth lumbar vertebra, just below the small of the back, the two main veins from the legs, the common iliac veins, come together to form it. It has a large number of tributaries between its point of origin and its heart terminus, unlike the superior vena cava veins that absorb blood from the loins' muscles and coverings, as well as the walls of the belly, the sexual organs, the kidneys, and the liver, are among them. The inferior vena cava ascends close to the backbone on its way to the heart. It passes through the liver, forming a groove on the dorsal side, reaches the chest through a diaphragm opening, and empties into the right atrium of the heart through a non-valve opening below the point of entry for the superior vena cava.

## **V. Left Pulmonary artery:-**

The primary pulmonary artery transports oxygen-depleted blood away from the heart and back to the lungs. The main artery divides into the left and right pulmonary arteries, each of which delivers blood to the corresponding lung. These are the only arteries in the body that transport oxygen-depleted blood, along with the umbilical arteries. The uterus contains the umbilical arteries. The pulmonary artery, also known as the pulmonary trunk, originates at the bottom of the heart's right ventricle. The artery is 1.2 inches broad and 2 inches long, making it a wide and small artery.

## **VI. Pulmonary trunk:-**

The pulmonary trunk is a small artery that runs from the heart to the lungs, carrying deoxygenated blood. The primary pulmonary artery, or simply the pulmonary artery, is a term used by some writers to describe this vessel.

The pulmonary trunk emerges from the base of the heart's right ventricle. After passing behind the ascending aorta, it divides into the left and right pulmonary arteries, which provide blood to the lungs for oxygenation.

## **VII. Aortic Arch:-**

The segment of the aorta between the ascending and descending aorta is known as the aortic arch. The arch runs slightly backward and to the left of the trachea as it emerges from the ascending aorta. At the fourth thoracic vertebra, the aortic arch's distal portion traverses inward. From here on out, it's known as the descending aorta. Three main divisions make up the aortic arch. The brachiocephalic trunk is the aortic arch's first branch, supplying blood to the right arm, head, and neck. The second branch of the aortic arch, the left popular carotid artery, supplies blood to the left side of the head and neck. The left subclavian artery is the last branch of the aortic arch, and it supplies blood to the left arm.

## **VII. Brachiocephalic trunk:-**

The brachiocephalic trunk, also known as the brachiocephalic or innominate artery, is the aorta's second branch. From the aortic arch, it ascends through the superior mediastinum until it meets the right sternoclavicular joint, where it splits into its final branches. The right subclavian artery, which supplies the right upper limb, and the right common carotid artery, which supplies the right side of the brain, head, and neck, emerge from the brachiocephalic trunk.

## **VII. Left Common Carotid Artery:-**

The Common Carotid artery is a large elastic artery that provides the main blood supply to the head and neck. The carotid arteries are the primary vessels supplying blood to the brain and face.

The right common carotid artery (RCCA) originates in the neck from the brachiocephalic artery

The left common carotid artery (LCCA) arises in the thorax from the arch of the aorta.

Both right and left common carotid arteries bifurcate in the neck at the level of the carotid sinus into the internal carotid artery (ICA), which supplies the brain, and the external carotid artery (ECA), which supplies the neck and face.

## **VII. Left Subclavian Artery:-**

The left and right subclavian arteries are two major arteries in the thorax that lie beneath the clavicles. They receive blood flowing from the aortic arch, and once they pass the lateral border of the first rib, they become known as the axillary arteries.

The subclavian artery is the source for supplying the upper limb with arterial blood. Its terminal branch, the axillary artery supplies the axillary region. It continues as the brachial and then ulnar and radial arteries, that supply the arm and forearm respectively. This article will describe the parts and branches of the subclavian arteries, together with their course and development.