

Cardiovascular and Lymphatic Systems

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The purpose of the cardiovascular system is to provide nourishment to the body by transporting nutrients and oxygen to the cells. This system also removes carbon dioxide and other waste products from the body. The expansion and contraction of the heart circulates the blood throughout the body.

Proceeding with the where, what, and why of the heart, the heart is a muscular organ that is located behind the sternum between the lungs. It is about the size of your closed fist. The heart is made up of four chambers. The upper two chambers are known as the right atrium and the left atrium. The lower two chambers are known as the right ventricle and left ventricle. The cardiac septum separates the right and left sides of the heart.

There are four major valves within your heart: the tricuspid, the mitral, the pulmonary and aortic valve. The pulmonary and aortic valves can also be referenced as the semilunar valves.

Analyze the term pericardium, peri means outer or surrounding and cardi/o means heart, so it is the outer layer of the heart. The pericardium is a two-layered sac that surrounds the heart. The sac is referred to as the pericardial sac. The sac allows for the heart to expand and contract. The outer layer is called the epicardium. The middle layer is the myocardium. You can remember this because my/o means muscle for the muscular middle layer. The last layer is the endocardium and endo means within, so it is the inner lining of the heart.

Moving onto blood vessels, these vessels provide the passageway that carry blood throughout the human body. We will define arteries you may want to remember “A for away” for arteries, so arteries carry blood away from the heart. The term arterioles reference the smallest arteries. The largest artery in the body is the aorta.

Veins are the opposite of arteries in that they carry blood back to the heart. The smallest veins are referred to as venules. The largest vein in the body is the venae cavae. The superior venae cava, which superior means above, returns the blood to the heart from the upper part of the body. Whereas the inferior vena cava, which we know that inferior means below, carries blood to the heart from body parts below the diaphragm. Finally, capillaries connect arterioles with venules.

Blood is made up of two components that being plasma and cells. Plasma is the liquid portion of blood in which cells float. Cells are divided into three categories: erythrocytes, leukocytes, and platelets. Thrombo is a prefix that means clot, so a thrombocyte is a cell that aids in the clotting process.

The lymphatic system consists of lymph, lymphatic vessels, lymph nodes, spleen, and the thymus gland. Lymph refers to a colorless tissue fluid that is formed from lymphocytes and monocytes. Lymph nodes are important in that they act as filters in our body. A major organ of the lymphatic system is the spleen. The spleen is in the upper left part of the abdomen under the ribcage. The spleen is important for the creation of blood cells and for the filtering of the blood to help and fight infection.

Terms that are not built from word parts application to this unit include

- Anemia which is a reduction in the amount of hemoglobin in the blood
- Aneurysm is the ballooning of a weakened portion of an arterial wall
- Angina pectoris refers to chest pain, which may radiate to left arm & jaw, caused by coronary ischemia
- Arrhythmia references any disturbance or abnormality in the heart's normal rhythm
- Myocardial infarction, also known as MI, or heart attack. This is the death of a portion of the heart muscle caused by interruption of the blood supply.
- Varicose veins are distended veins usually in the lower extremities.
- Phlebotomy is the incision into vein to remove blood or give IV fluids. It is also known as venipuncture
- Defibrillation is the application of an electrical shock to the myocardium through the chest wall to restore normal cardiac rhythm. Used commonly with CPR.
- Electrocardiogram (ECG or EKG) is the record of electrical activity of the heart
- Sphygmomanometer is the blood pressure cuff. The device is used for measuring blood pressure.
- Stethoscope is the instrument used to listen to body sounds, usually sounds from heart & lungs.