Human Circulatory System

By Ruby Robertson

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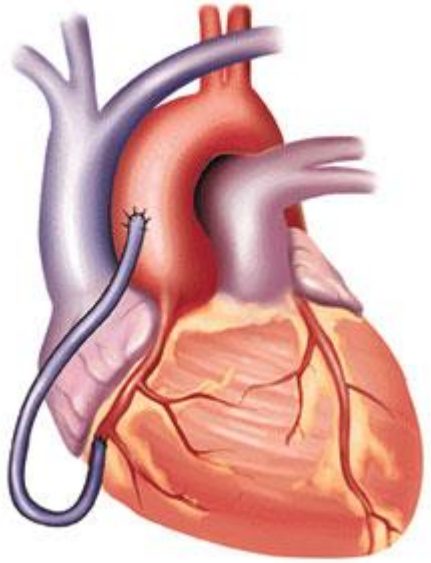
The Heart



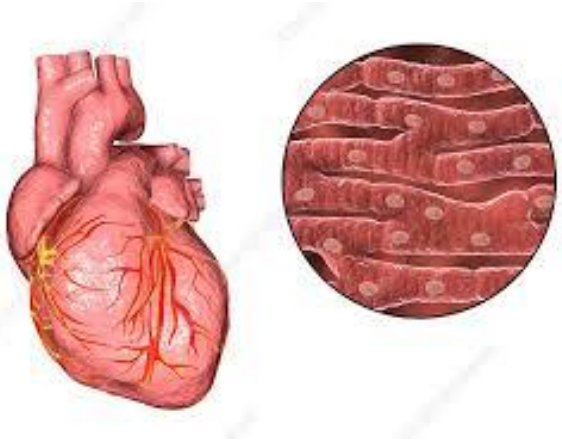
The four main functions of the heart

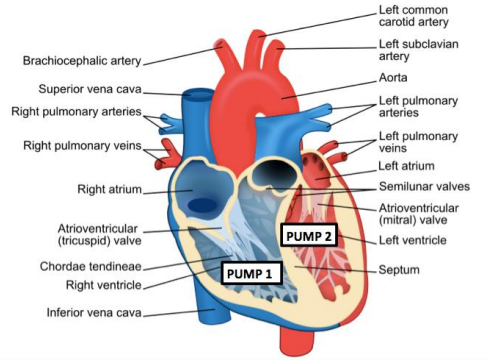
The right atrium receives blood from the veins and pumps it to the right ventricle.
The right ventricle receives blood from the right atrium and pumps it to the lungs, where it is loaded with oxygen.
The left atrium receives oxygenated blood from the lungs and pumps it to the left ventricle.

What does the heart do?

the main job of the heart is to pump blood to every part of the body. The blood carries oxygen and all the food, vitamins and minerals that your body needs to move, think, grow and repair itself.

Muscle/pump





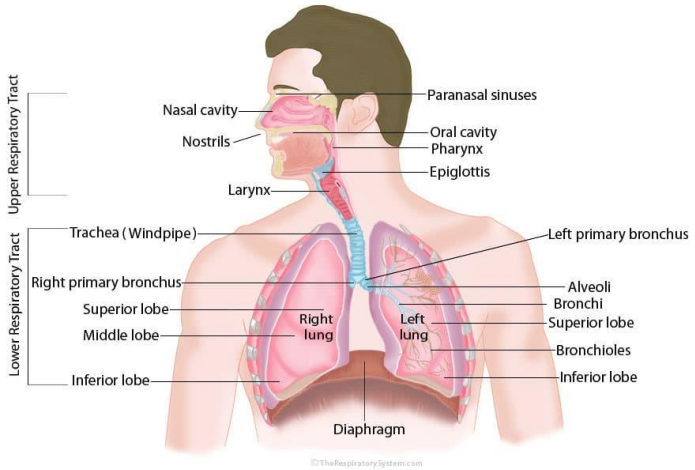
The hearts muscle

Cardiac muscle (also called heart muscle or myocardium) is one of three types of vertebrate muscles, with the other two being skeletal and smooth muscles. It is an involuntary, striated muscle that constitutes the main tissue of the walls of the heart

How does the heart pump?

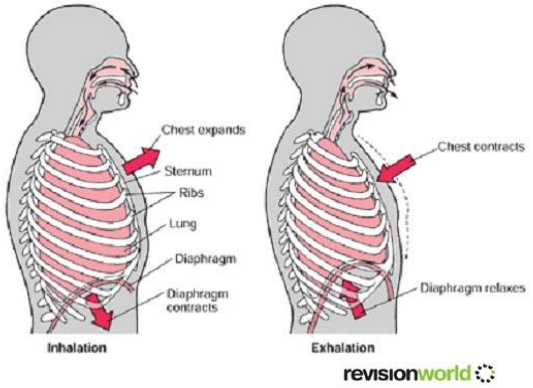
The right side of your heart gets blood from your body and pumps it into your lungs. Oxygen-poor blood flows in through the large veins to the right atrium. Then the blood moves into the right ventricle, which contracts and sends blood out of your heart to pick up oxygen from your lungs

Lungs/breathing



How do your lungs breath?

Your lungs bring fresh oxygen into your body. They remove the carbon dioxide and other waste gases that your body's doesn't need. ... Your diaphragm tightens and flattens, allowing you to suck air into your lungs. To breathe out (exhale), your diaphragm and rib cage muscles relax.



What triggers breathing?

What triggers breathing?
The main trigger to our breathing is not that we are low in oxygen - instead, it is that we are high in carbon dioxide. ... (By the way, low oxygen levels are also a reason to breathe - but a much weaker trigger than the high carbon dioxide levels in your blood.)

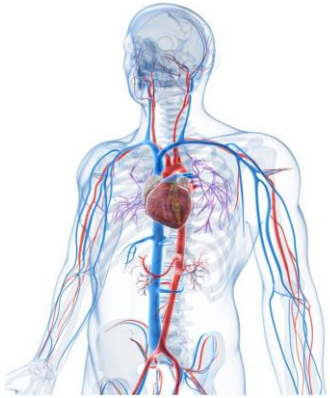
Blood Vessels/Arteries/veins

The four types of veins

• Deep veins are located within muscle tissue. ...
• Superficial veins are closer to the skin's surface. ...
• Pulmonary veins transport blood that's been filled with oxygen by the lungs to the heart.

The five main blood vessels

There are five main types of blood vessels: arteries, arterioles, capillaries, venules and veins. Arteries carry blood away from the heart to other organs. They can vary in size. The largest arteries have special elastic fibres in their walls.



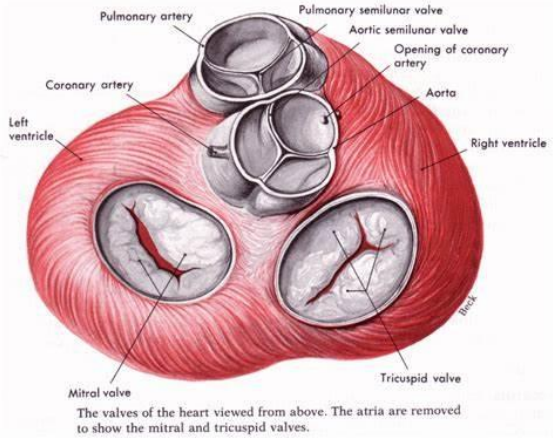
Arteries

Arteries carry blood away from the heart; the main artery is the aorta. ... Capillaries carry blood away from the body and exchange nutrients, waste, and oxygen with tissues at the cellular level. Veins are blood vessels that bring blood back to the heart and drain blood from organs and limbs.

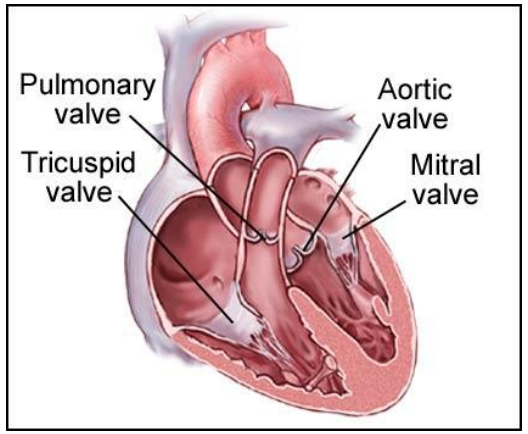
Valves

Cardiac valves

- tricuspid valve: located between the right atrium and the right ventricle.
- pulmonary valve: located between the right ventricle and the pulmonary artery.
- mitral valve: located between the left atrium and the left ventricle.
- aortic valve: located between the left ventricle and the aorta.



The valves of the heart viewed from above. The atria are removed to show the mitral and tricuspid valves.

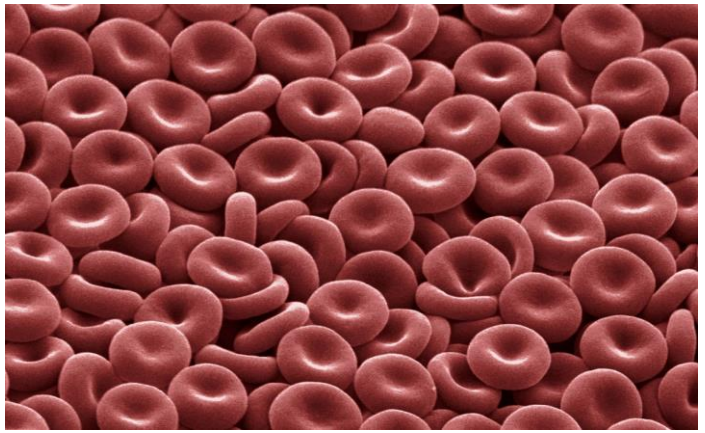


The four heart valves

The tricuspid valve, pulmonary valve, mitral valve and the aortic valve are the four valves of the heart.

Red blood cells

What causes low red blood cells



A low red blood cell count can be a sign of anemia, a condition in which the body does not have enough normal red blood cells and the blood is unable to carry enough oxygen to the tissues that need it.

What causes high red blood cells

Lifestyle factors that can cause a high red blood cell count include: Smoking cigarettes. Living at a high altitude. Taking performance-enhancing drugs such as anabolic steroids (for example, synthetic testosterone) or erythropoietin.

Oxygen/carbon dioxide

What is the percent by mass of oxygen in carbon dioxide (CO2)?

Here's a breakdown of its composition, according to a NASA fact sheet: Carbon dioxide: 95.32 percent Nitrogen: 2.7 percent Argon: 1.6 percent Oxygen: 0.13 percent Carbon monoxide: 0.08 percent Also, minor amounts of: water, nitrogen oxide, neon, hydrogen-deuterium-oxygen, krypton and xenon