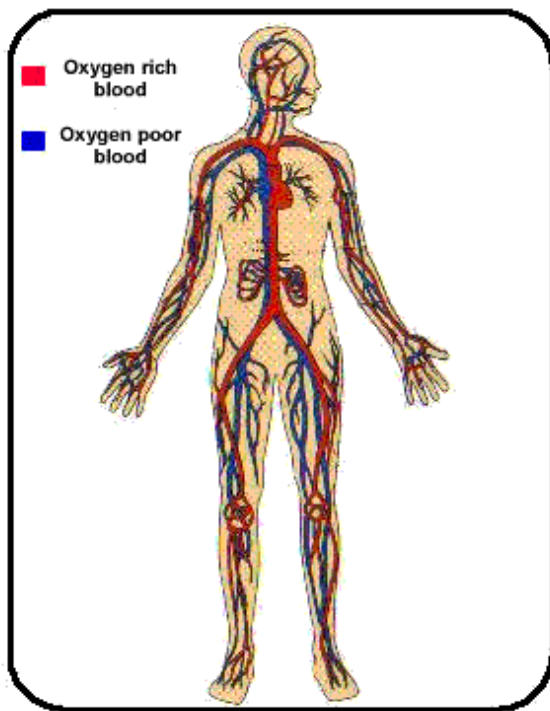


Circulatory System

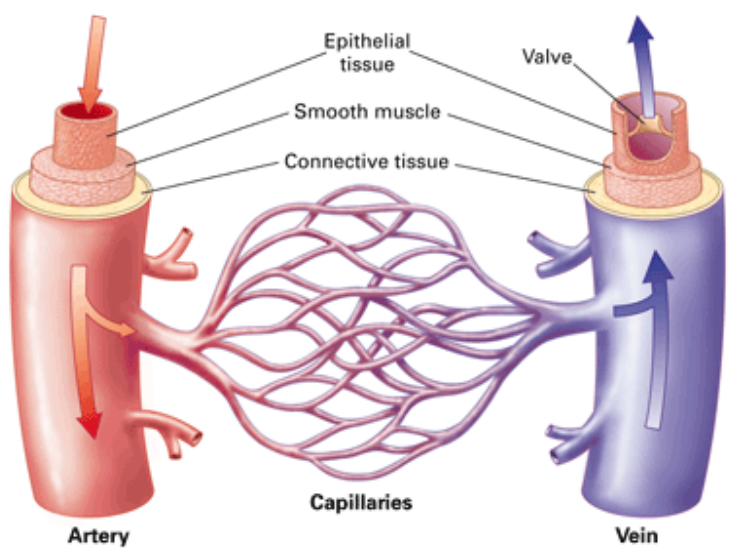


The circulatory system's main role or function is *the transportation and exchange of gases, nutrients and waste*. The transportation route used by the blood is called the cardiovascular system.

The heart, the lungs, and the blood vessels work together to form the circle part of the circulatory system. The pumping of the heart forces the blood on its journey.

Blood vessels are divided into three categories:

- arteries
- capillaries
- veins



Arteries

Arteries are the largest blood vessels in the body. They carry blood from the heart to other parts of the body. Their walls are very thick, which enables them to withstand the high pressure of the blood they carry.

Capillaries

Arteries branch and narrow into smaller arteries called the arterioles which branch and narrow into capillaries, the smallest blood vessels. Capillaries are so narrow that red blood cells travel through them in single file.

It is in the capillaries that nutrients, oxygen and other substances pass to the cells and that blood picks up carbon dioxide and other cell waste.

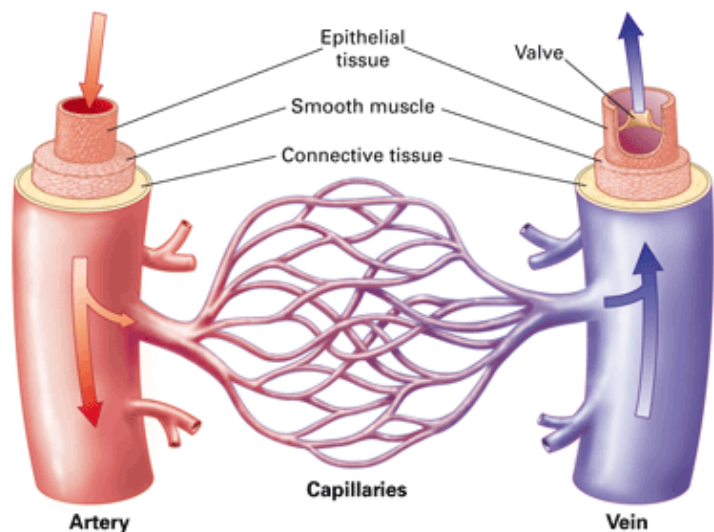
Veins

Once the capillaries have irrigated the organs, they unite to form venules which join to form larger veins. Blood travels to the heart through the veins.

So blood vessels are divided into three parts.

Arteries carry **blood** from the heart to other parts of the body

Arteries branch off into capillaries



The capillaries is where nutrients, oxygen, and other substances pass to the cells and the blood picks up carbon dioxide and other cell waste.

Capillaries then unite to form veins.

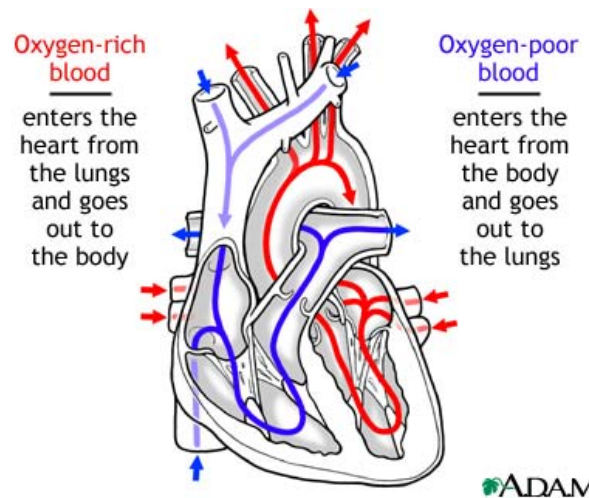
Veins carry **blood** back to heart.

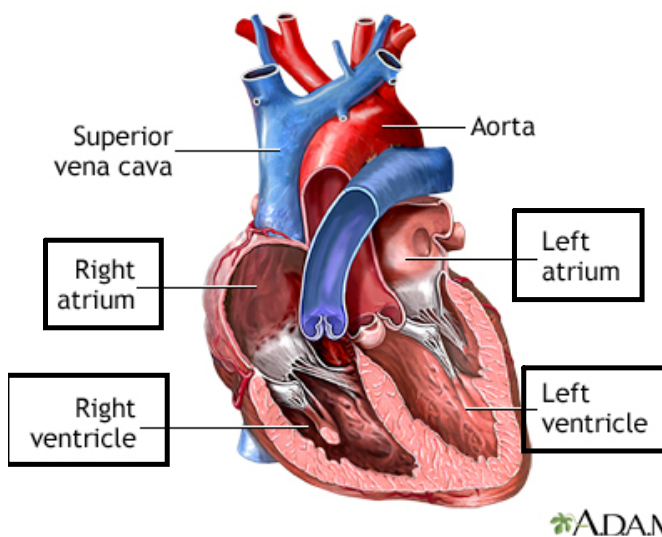
The Heart

Your heart is really a muscle. It's located a little to the left of the middle of your chest, and it's about the size of your fist.

But the heart muscle is special because of what it does. The heart sends blood around your body. The [blood](#) provides your body with the oxygen and nutrients it needs. It also carries away waste.

Your heart is sort of like a pump, or two pumps in one. The right side of your heart receives blood from the body and pumps it to the lungs. The left side of the heart does the exact opposite: It receives blood from the lungs and pumps it out to the body.





Two sides of the heart

The right atrium is linked to the right ventricle and the left atrium is linked to the left ventricle. The right and left sides do not communicate with each other, but are separated by a partition.

From both the right and left sides, the blood flows through valves to move from the atrium to the ventricle.

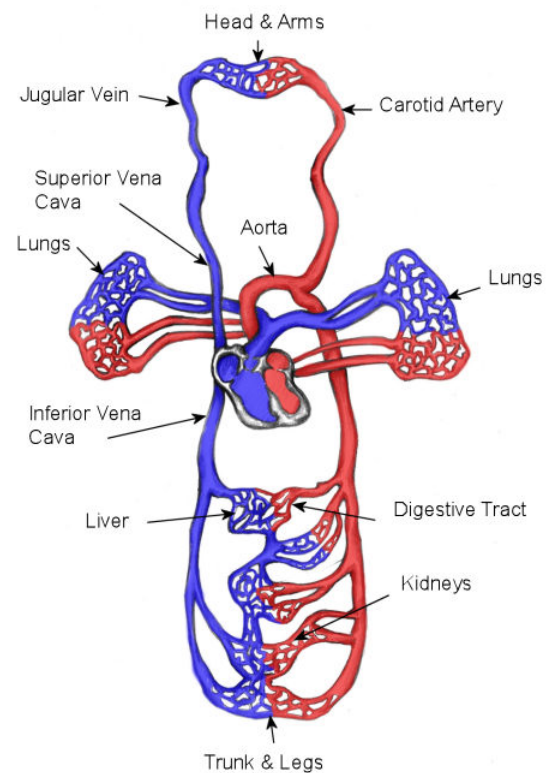
Veins are attached to both atria so blood can enter the heart.

Arteries(ex: the aorta) are attached to the ventricles so blood can exit the heart.

Blood is pumped out of each side of the heart and goes along two different routes.

On the right side, blood is rich in oxygen (and low in carbon dioxide) this is called pulmonary circulation.

On the left side, blood is low in oxygen (and rich in carbon dioxide) this is called systematic circulation.



Notes on the Circulatory System

The circulatory system's main role or function is *the transportation and exchange of gases, nutrients and waste* .

Blood vessels are divided into three categories:

1) Arteries

- carry **blood** from the heart to other parts of the body.
- branch off into capillaries.

2) Capillaries

- where nutrients, oxygen, and other substances pass to the cells and the blood picks up carbon dioxide and other cell waste.
- they then unite to form veins.

3) Veins

- carry **blood** back to heart.