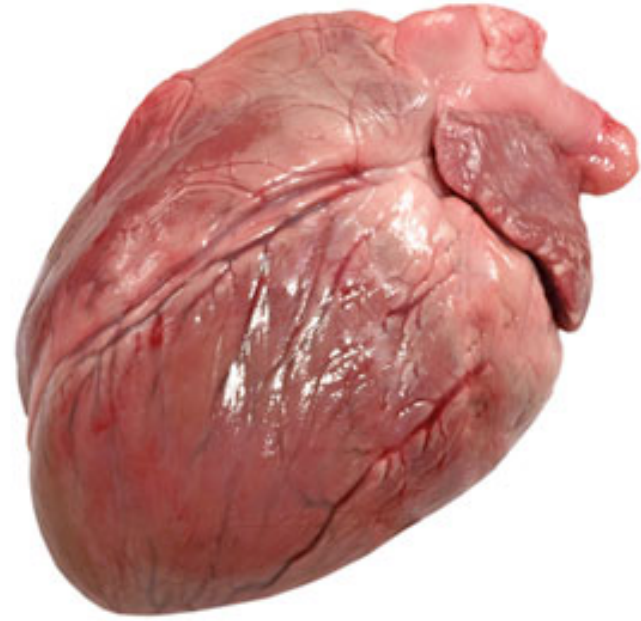


Circulatory System

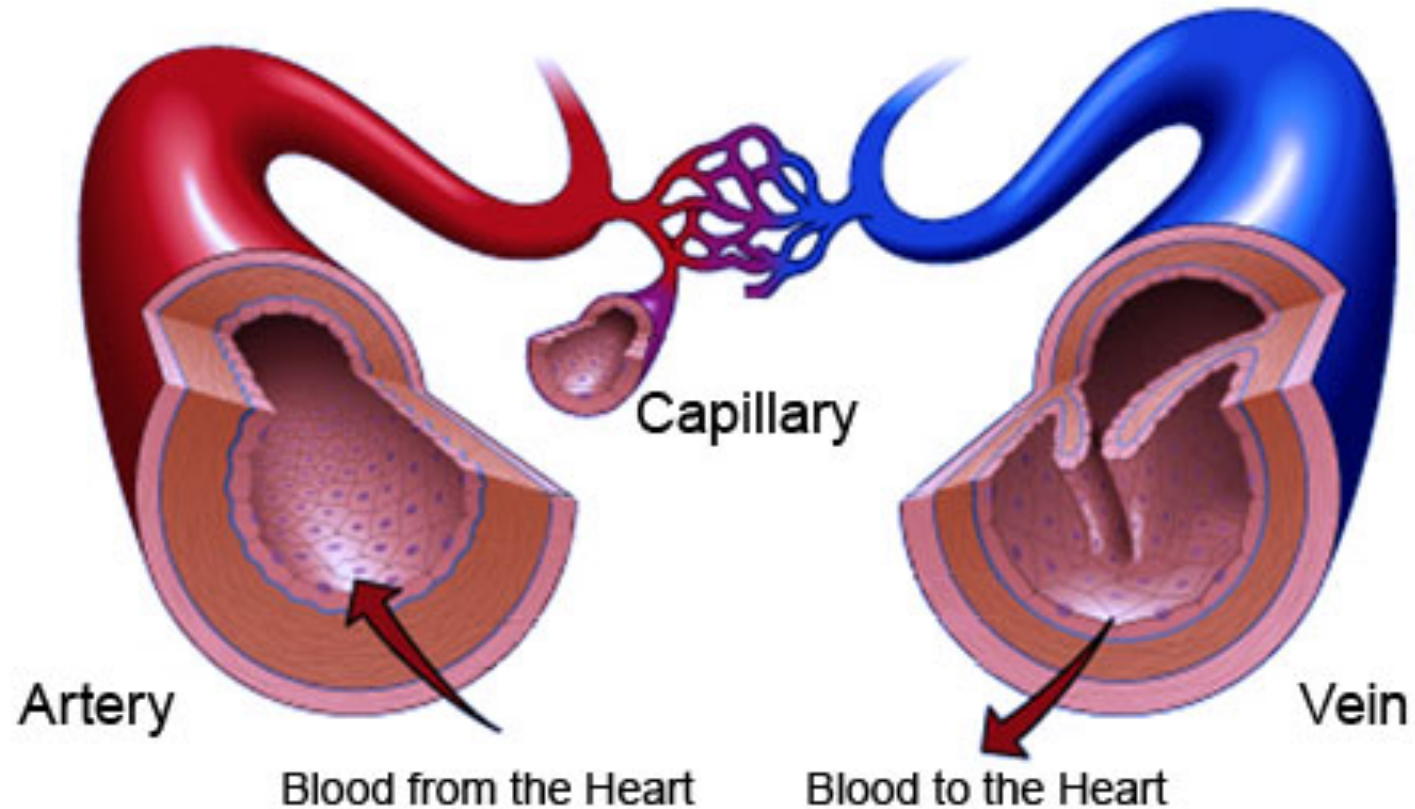
Based on the lab what do you know about heart?

How about blood?



Circulatory System

What do you know about blood vessels?

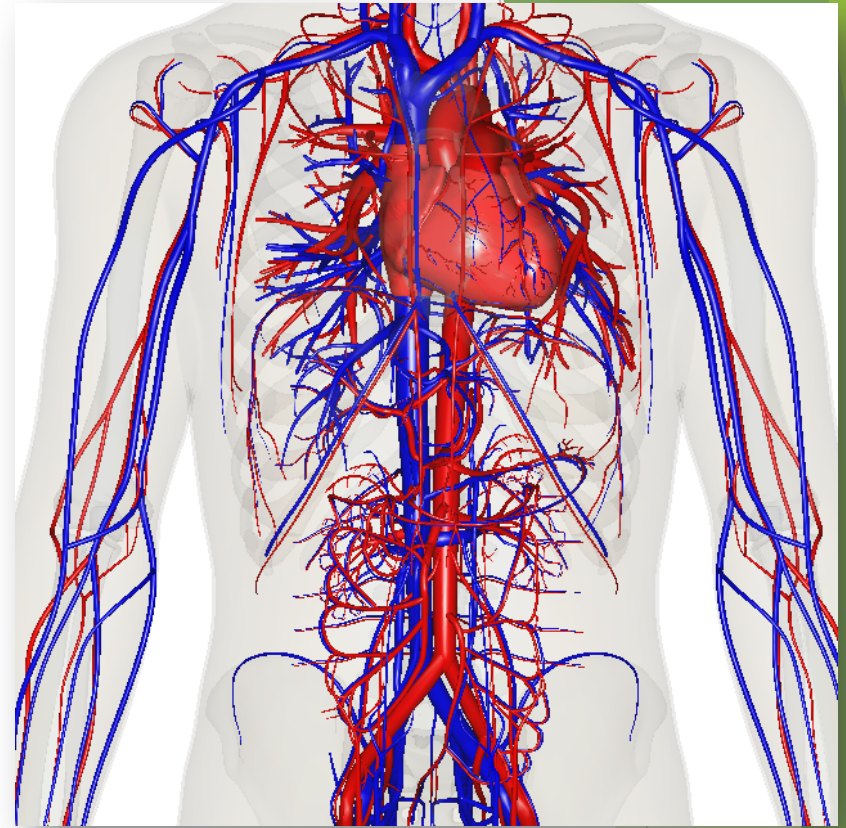


Circulatory System

The purpose of the circulatory system

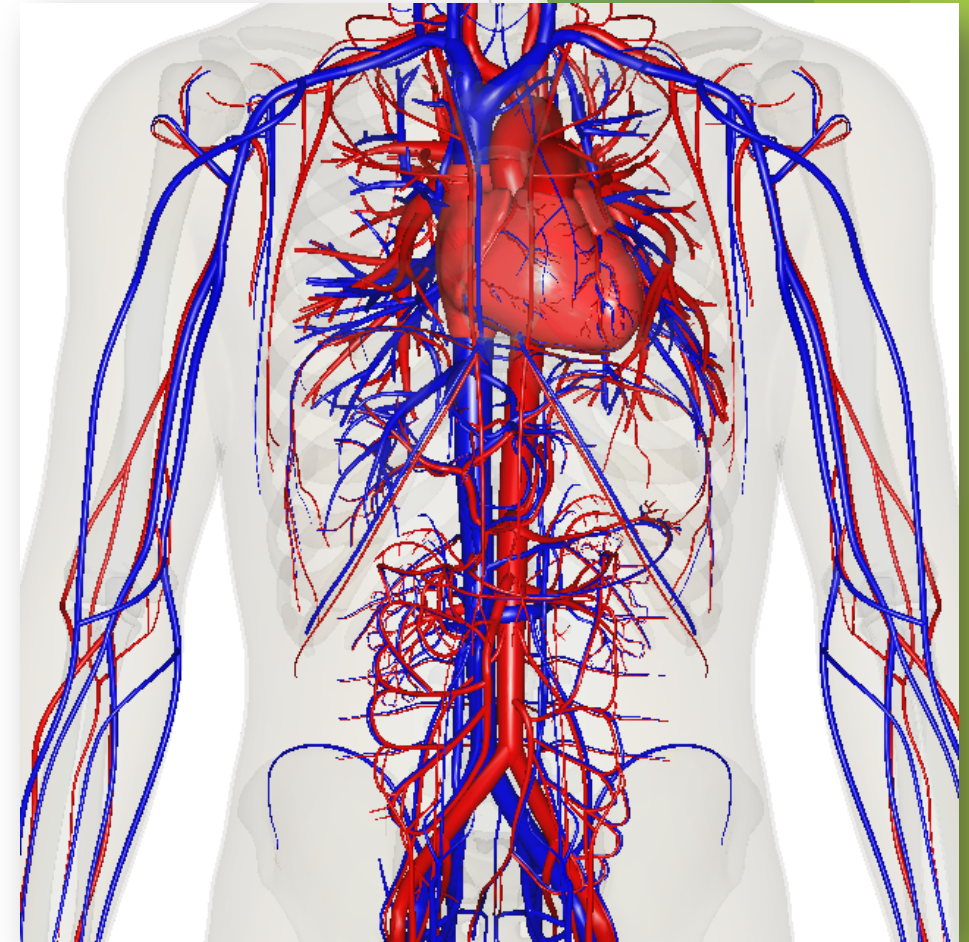
The transportation of materials throughout the body.

So... what does it transport then?



Circulatory System

Let's talk about “structures” of the circulatory system.
What is it made of?

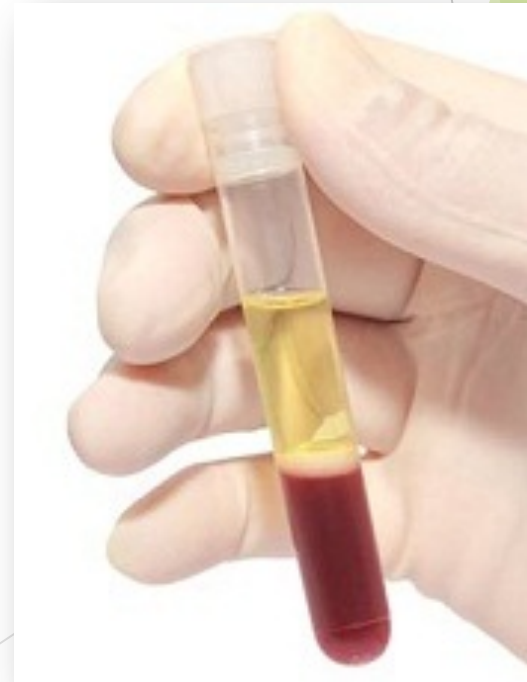


Blood

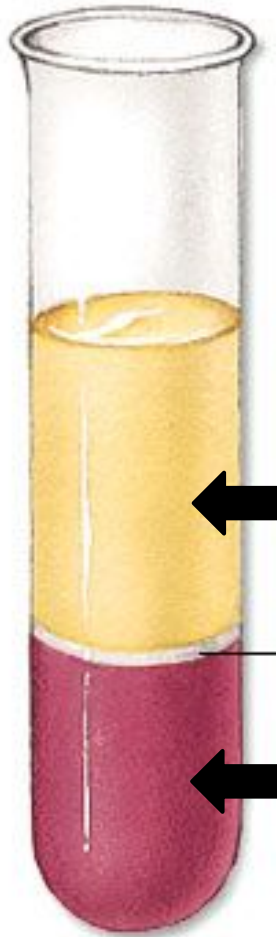
Human body has about 5.5L of blood inside

What is blood made of?

When we “spin it down” this is what happens.



Blood



Plasma (55%)

Blood cells (45%)

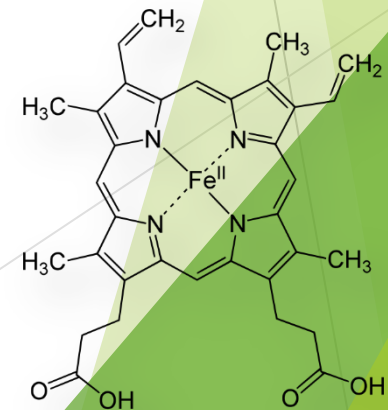
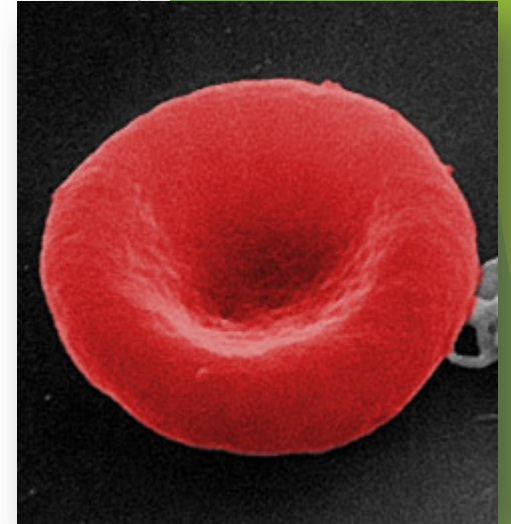
Plasma is made of water, proteins, minerals, and salts

Blood cells

Red blood cells are made at the bone marrow and contains hemoglobin which is a protein that can carry oxygen.

Red blood cell is in disc-shape to help increase the surface area better transport oxygen.

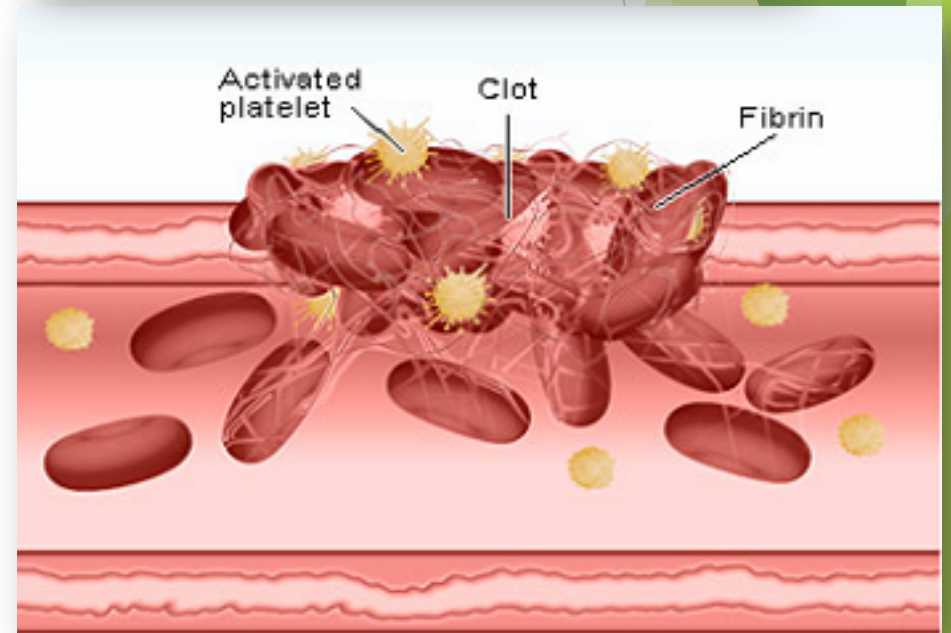
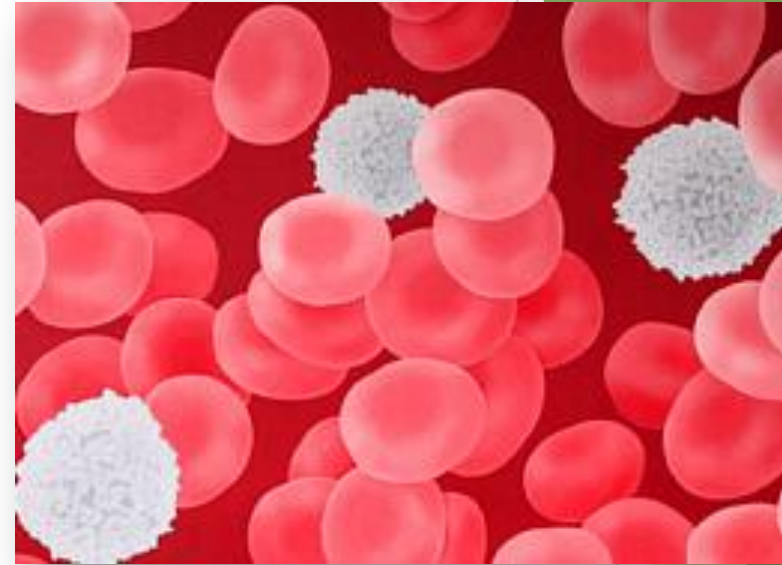
Hemoglobin has iron in the center which will bind to oxygen.



Blood cells

White blood cells fight against pathogens and play a key role in the body's immune system.

Platelets are blood cells that is important in blood clotting. They seal wounds by thickening blood.



Heart

The heart is the pump for the blood in our body. It has four chambers.

*Right Atrium	Left Atrium
Right Ventricle	Left Ventricle

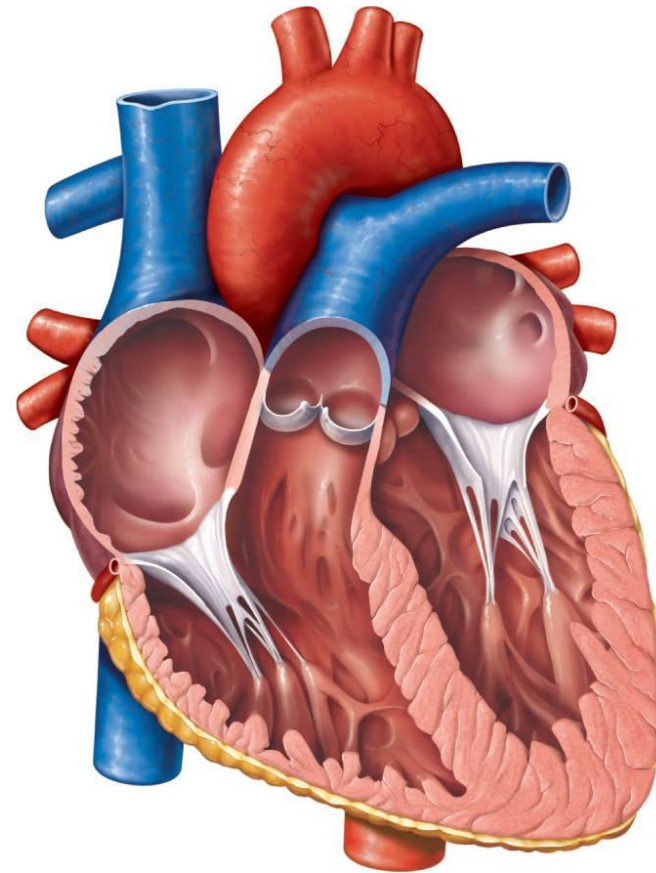


What do you notice is odd with this diagram?

Heart

Now, let's compare with an actual diagram

*Right Atrium	Left Atrium
Right Ventricle	Left Ventricle

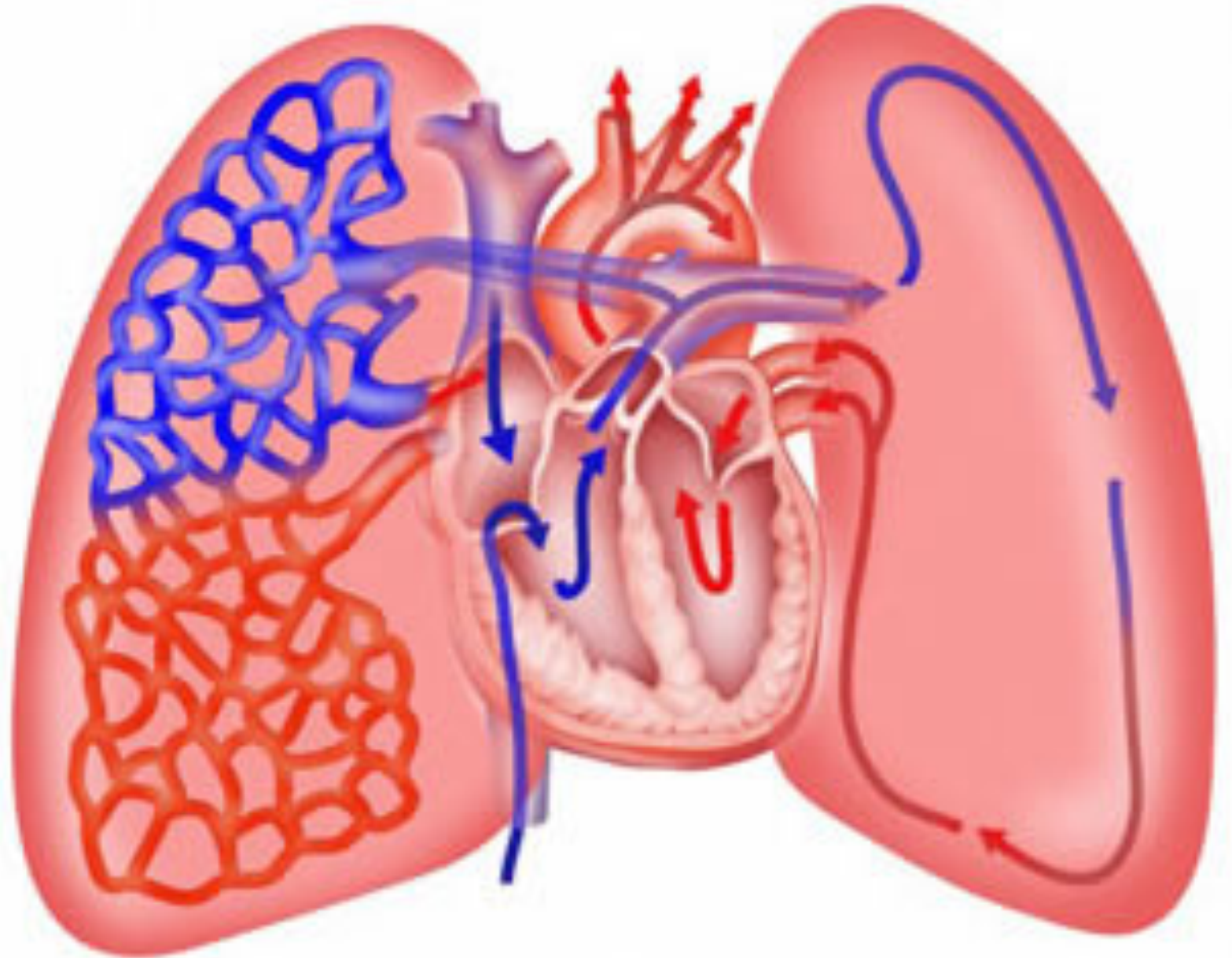


Heart

*Right Atrium	Left Atrium
Right Ventricle	Left Ventricle

Look very carefully at the diagram.

Can you guess what each chamber of the heart does?

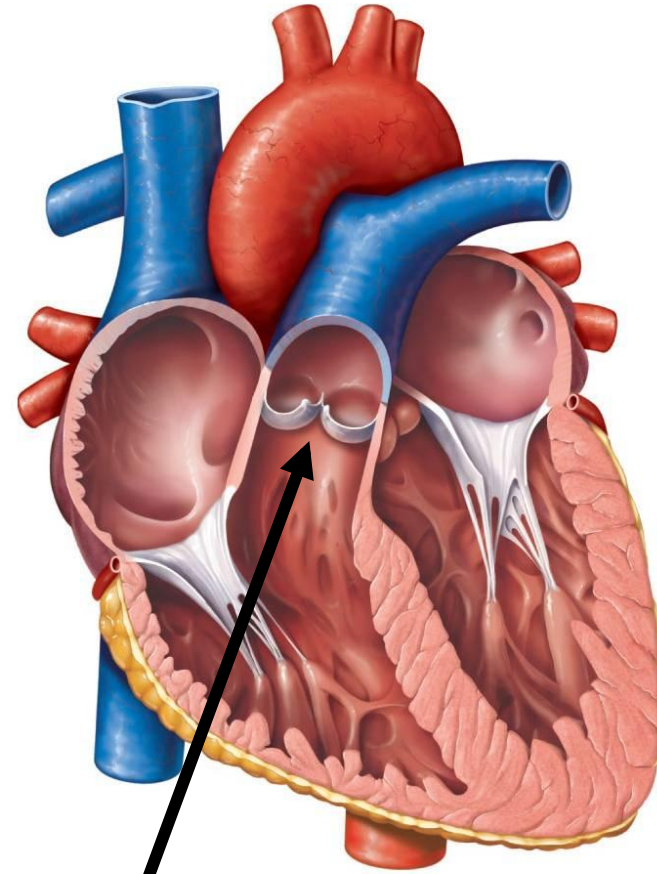


Heart

*Right Atrium	Left Atrium
Right Ventricle	Left Ventricle

Two atria are upper chambers that receives incoming blood.

Two ventricles are lower chambers that pumps blood out of the heart.



What are these valves for?

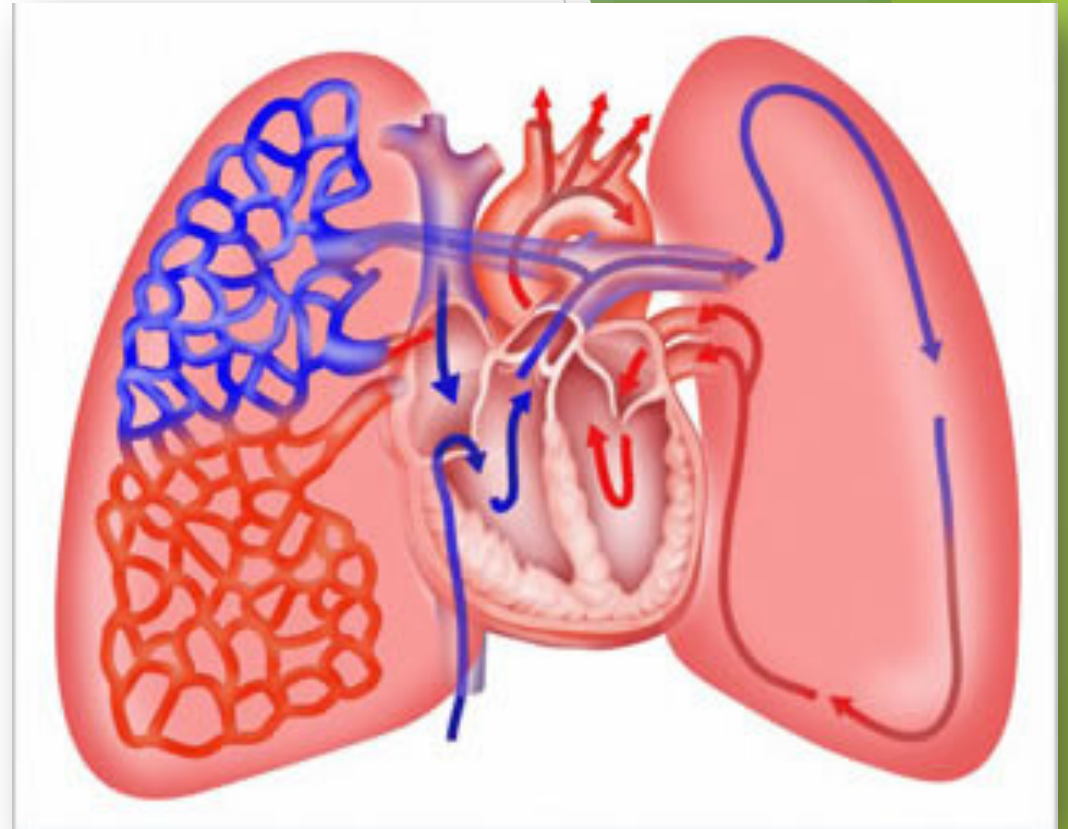
Heart

Right atrium receives blood from the _____ and sends it to _____.

Right ventricle receives blood from the _____ and sends it to _____.

Left atrium receives blood from the _____ and sends it to _____.

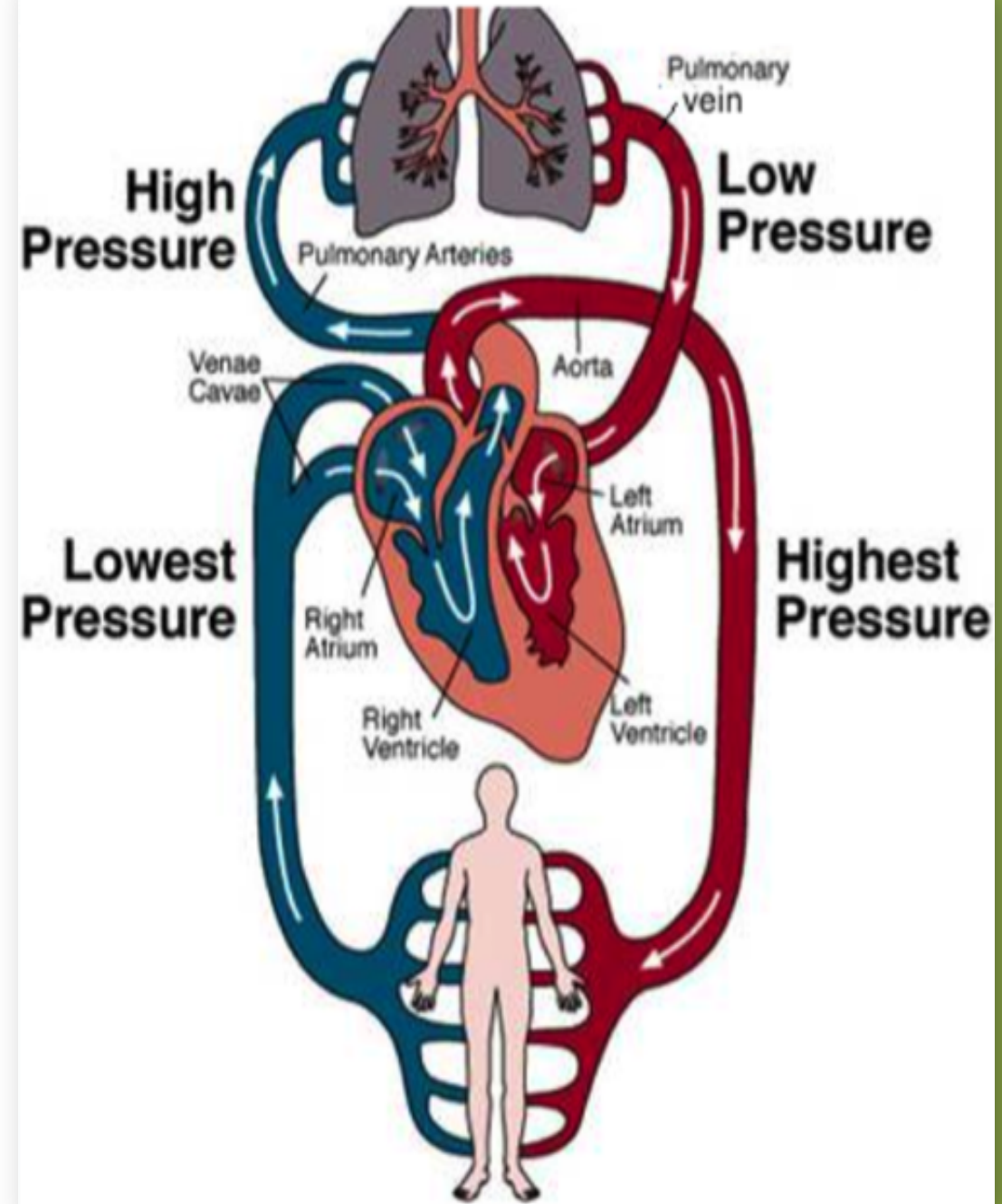
Left ventricle receives blood from the _____ and sends it to _____.



Blood Vessels

Major blood vessels

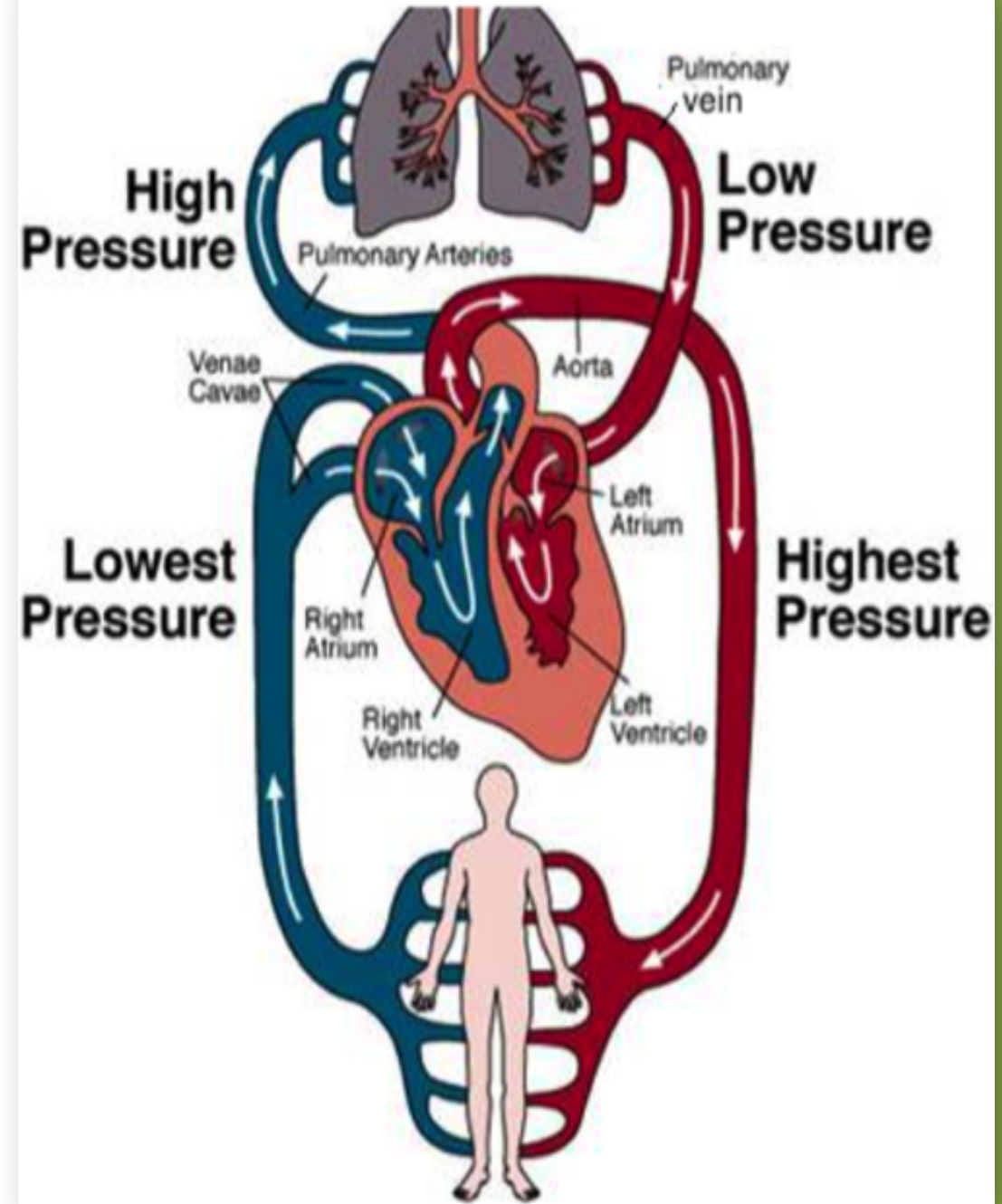
1. Superior Vena Cava: transports deoxygenated blood from the upper parts of the body to the right atrium.
2. Inferior Vena Cava: transports deoxygenated blood from the lower parts of the body to the right atrium.



Blood Vessels

Major blood vessels

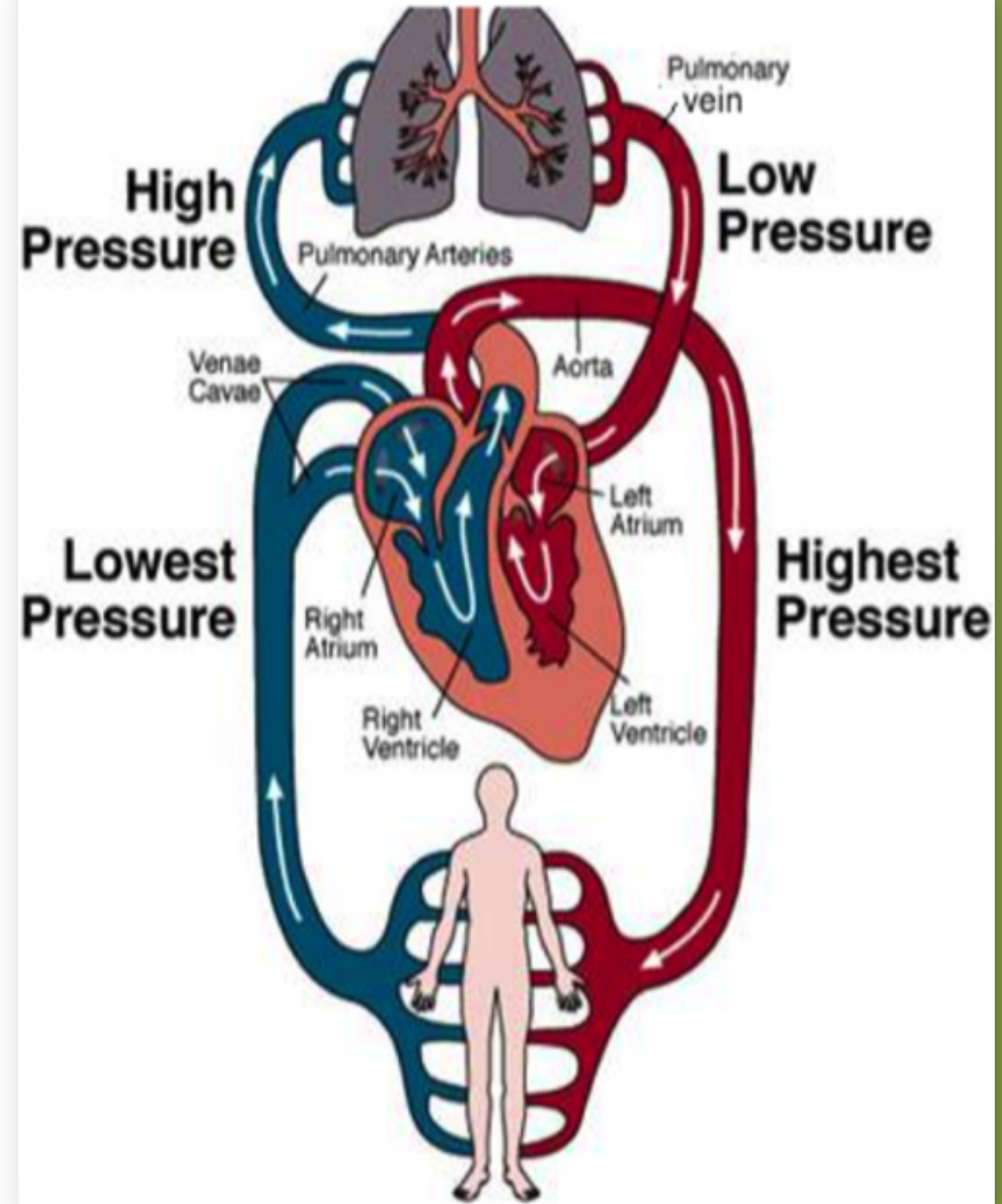
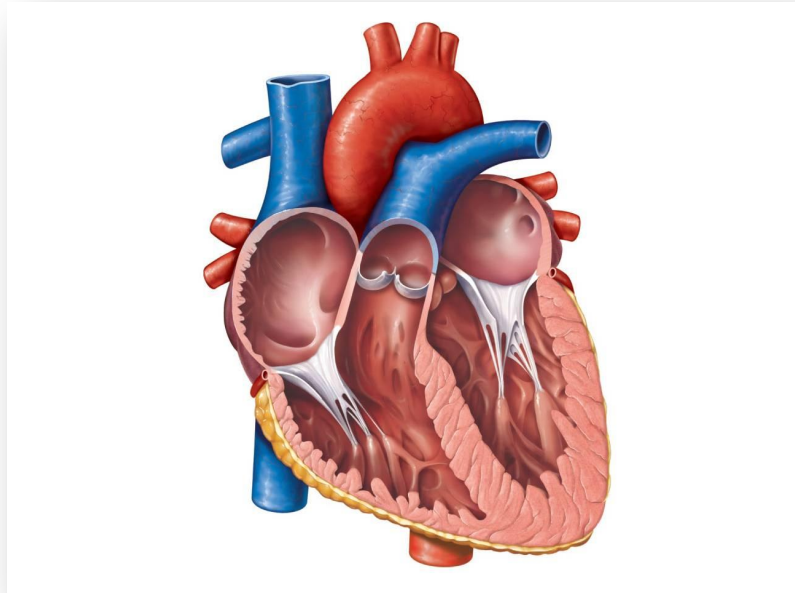
1. Pulmonary artery: transports deoxygenated blood from the right ventricle to the lungs
2. Pulmonary vein: transports oxygenated blood from the lungs to the left atrium



Blood Vessels

Major blood vessels

1. Aorta: transports oxygenated blood from the left ventricle to the body tissues.

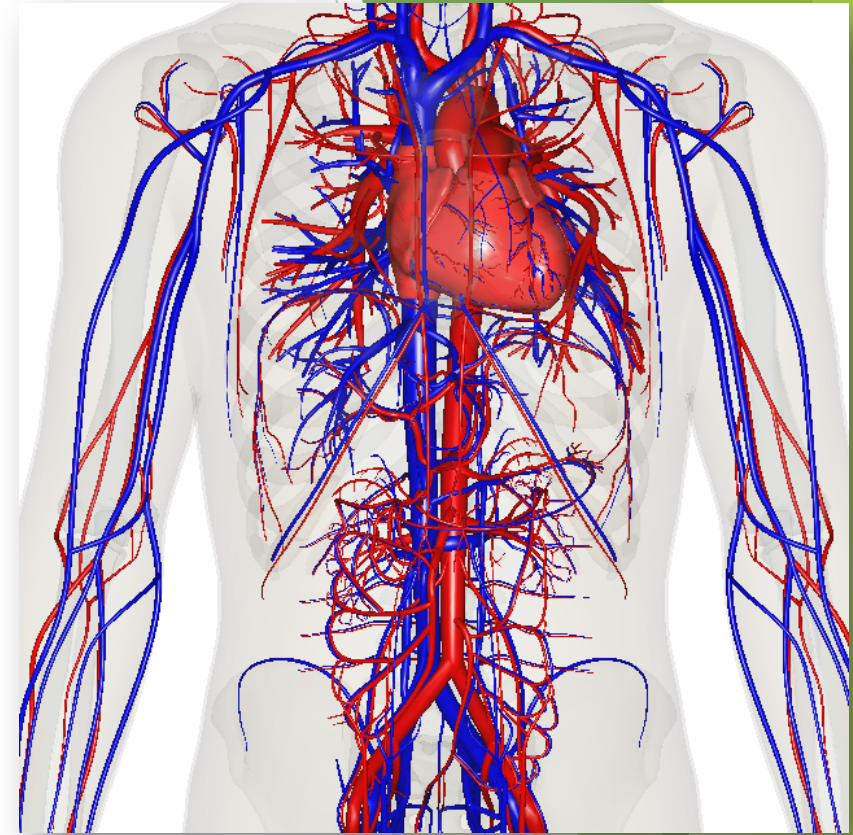


Blood Vessels

Smaller blood vessels

Arteries

1. Carry blood away from the heart.
Thick-walled (why?) and usually carries oxygenated blood (who was the exception?)

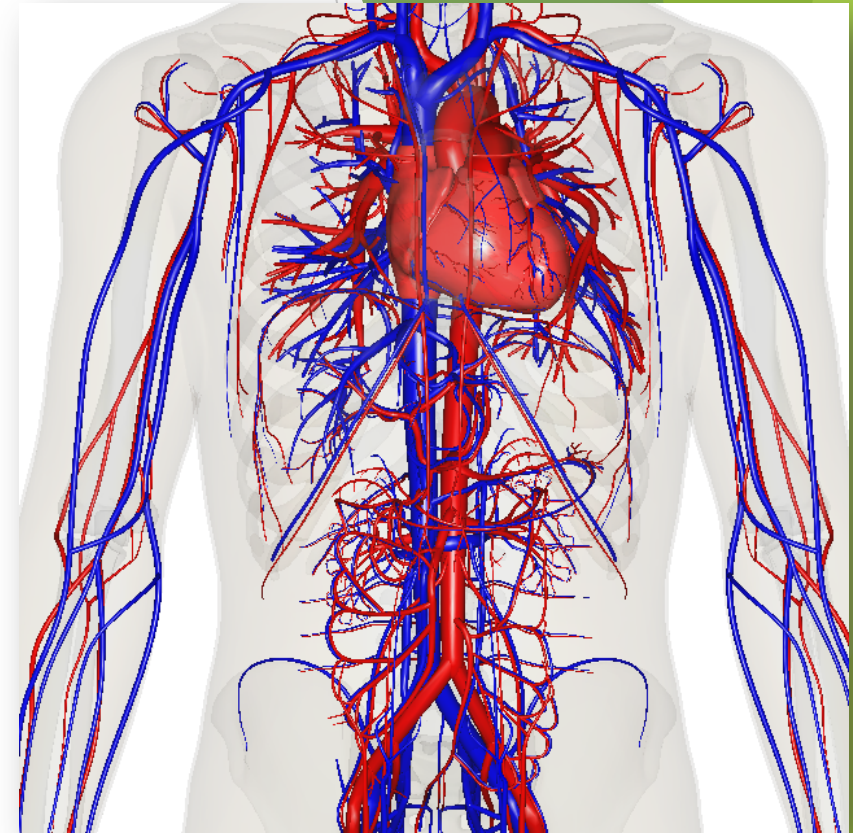


Blood Vessels

Smaller blood vessels

Veins

1. Carry blood to the heart. Thin walls and have valves (why?). Usually carries deoxygenated blood (exception?).



Blood Vessels

Smaller blood vessels

Capillaries

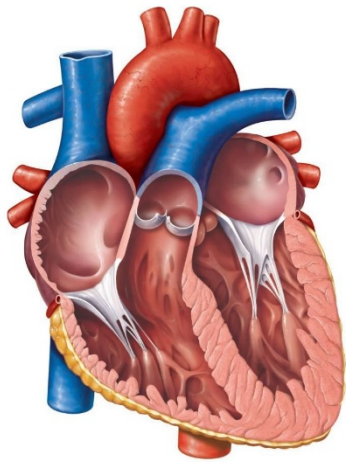
Network of tiny blood vessels that travel to each of the cells.

So small that red blood cells travel in single file!



Heart dissection lab

*Right Atrium	Left Atrium
Right Ventricle	Left Ventricle



Imagine trying to find RA, RV, LA, LV on this thing.

It won't be easy!

