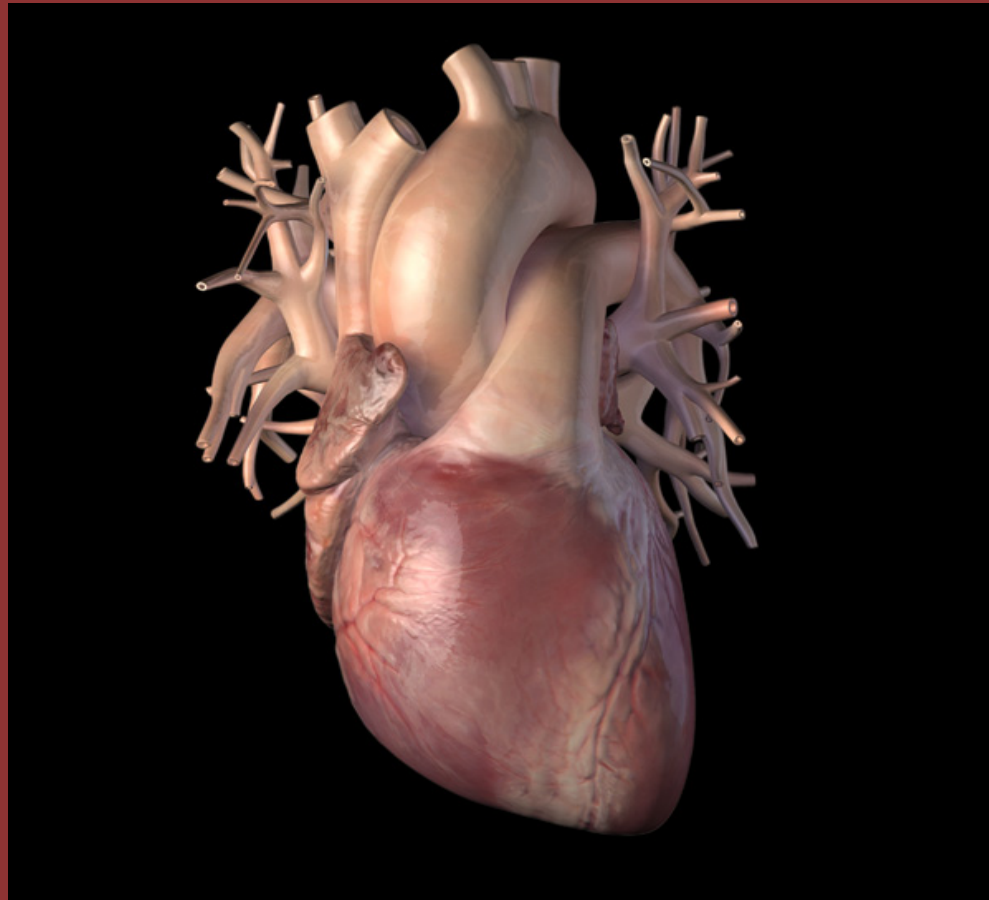
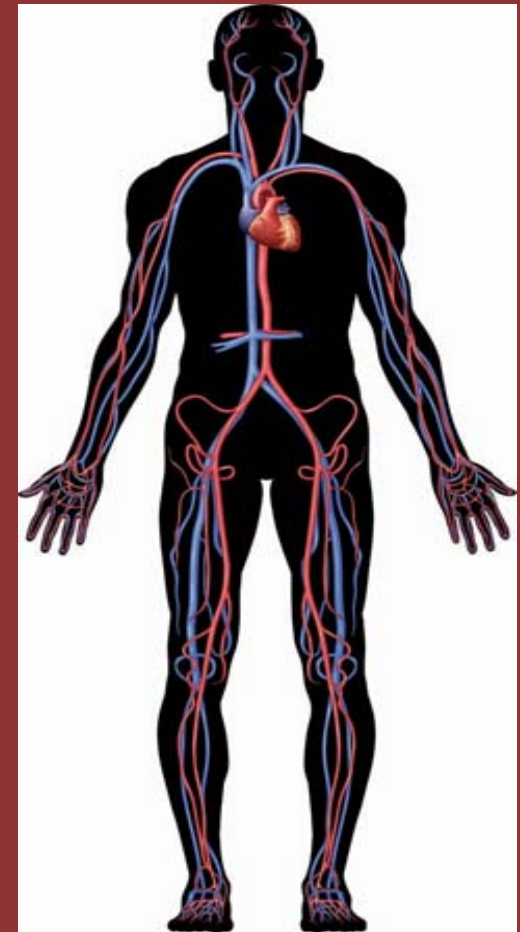


The Circulatory System



The Circulatory System

- Circulatory System is responsible for transporting substances throughout the body.
- This is the organ system made up of the heart, blood vessels, and blood.



Blood

Blood is a type of connective tissue made up of 4 parts:

1. Red blood cells
2. White blood cells
3. Platelets
4. Plasma

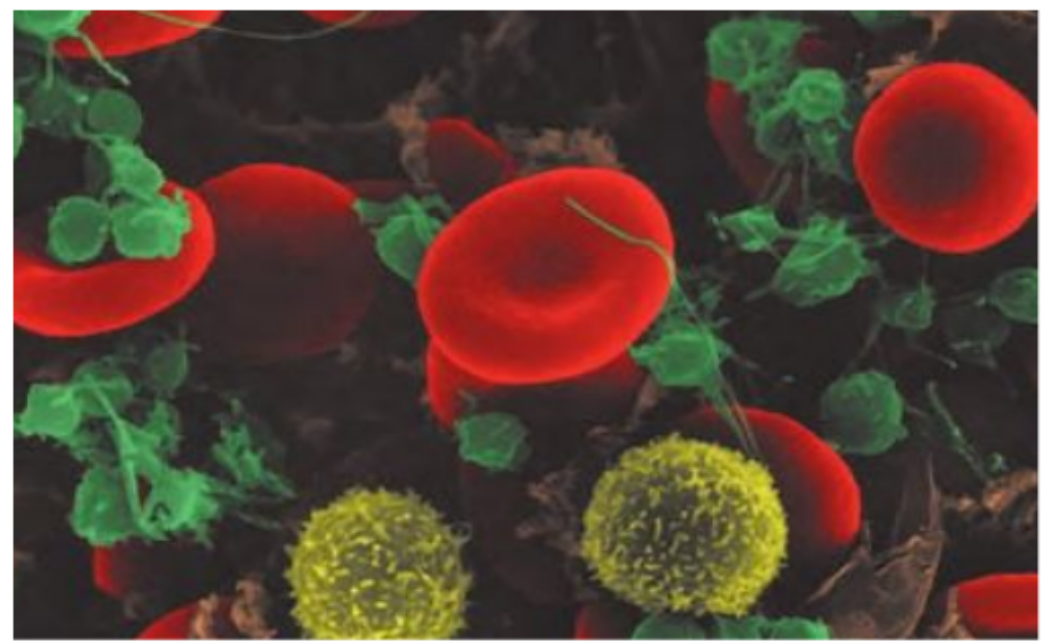

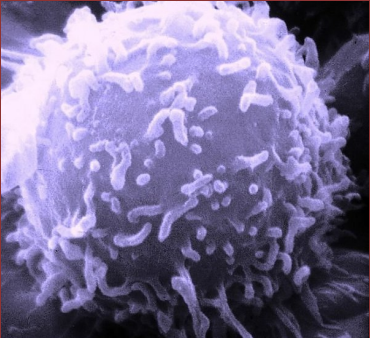


Figure 2 In this photo, red blood cells are coloured red, white blood cells are coloured yellow, and platelets are coloured green. The blood cells are suspended in plasma.

Red Blood Cells & White Blood Cells

What it looks like	Description	Function/Role
 A cluster of bright red, biconcave disc-shaped red blood cells resting on a green, textured surface.	<p>Red blood cells make up half of the blood by volume.</p> <p>They are bright red and lack a nuclei.</p>	<p>Contain hemoglobin, a protein that picks up oxygen and carbon dioxide.</p>
 A large, irregularly shaped white blood cell with a highly textured, bumpy surface, shown in a dark field.	<p>White blood cells make up half only 1% of blood by volume.</p>	<p>Fight and destroy disease causing bacteria and viruses.</p>

Platelets and Plasma

What it looks like



Description

Platelets make up less than 1% of blood by volume.

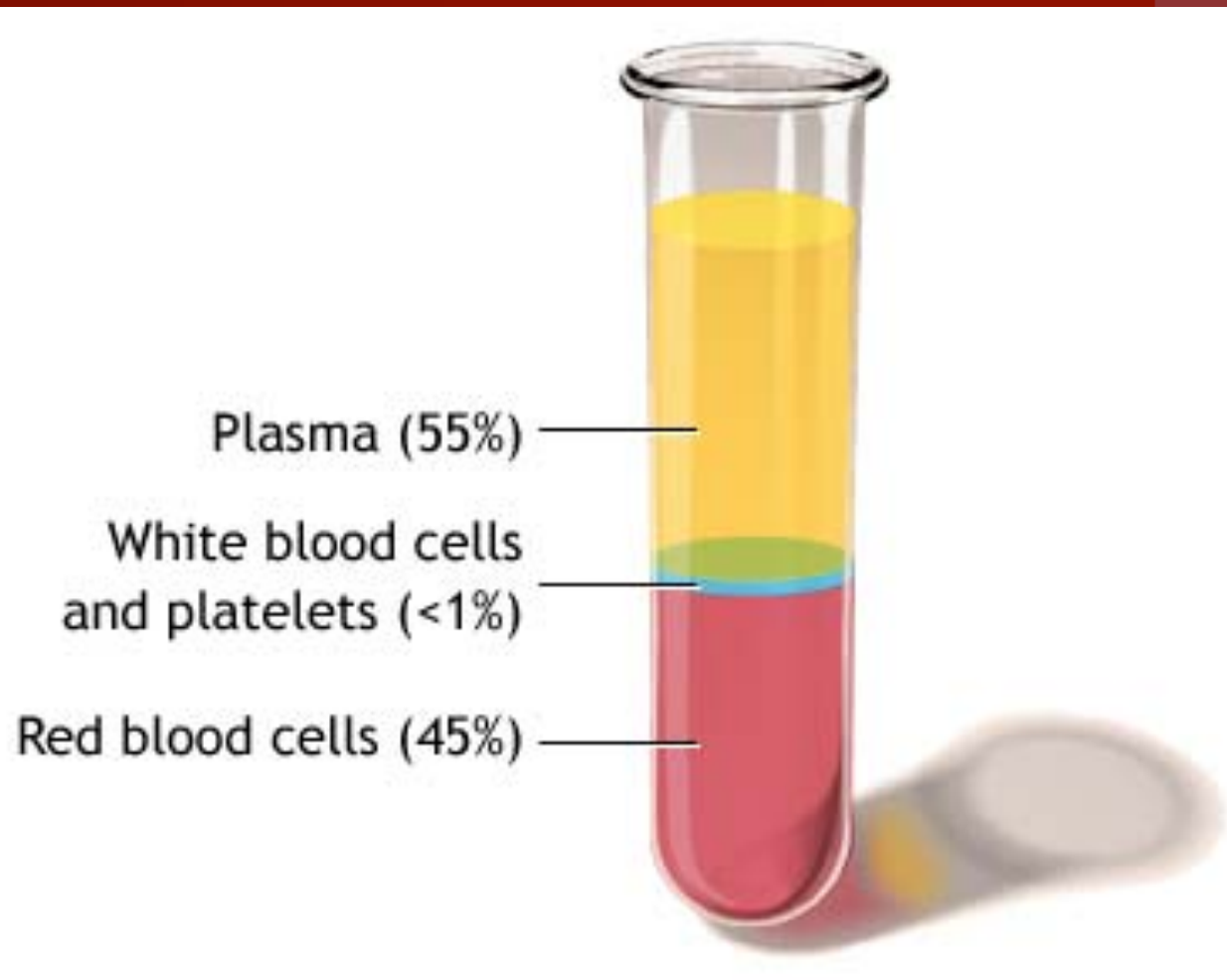
Function/Role

Small cells that help blood clot, seal wounds and stop bleeding.



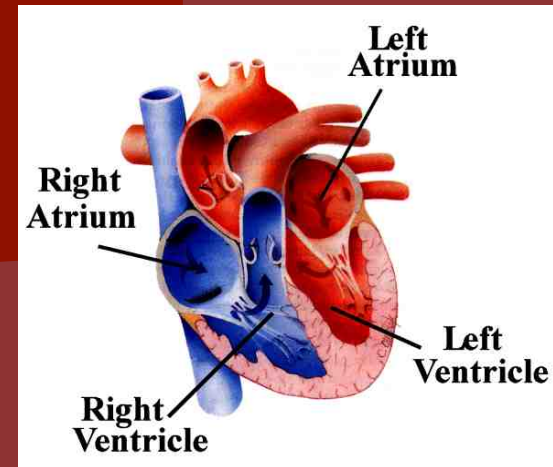
Plasma is the protein-rich liquid in which blood cells float. It makes up half of the blood by volume.

Carries blood cells, dissolved wastes, nutrients and hormones.

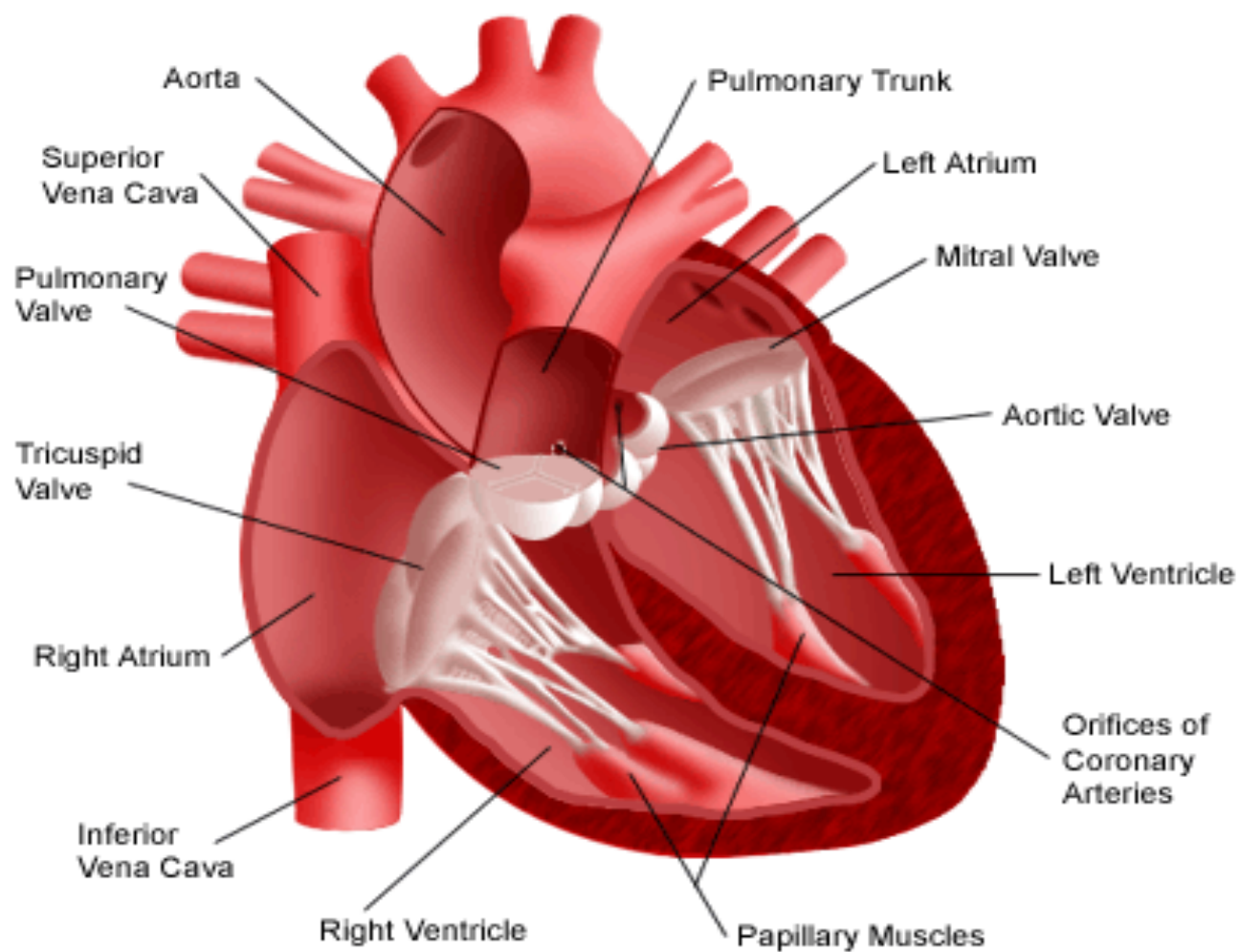


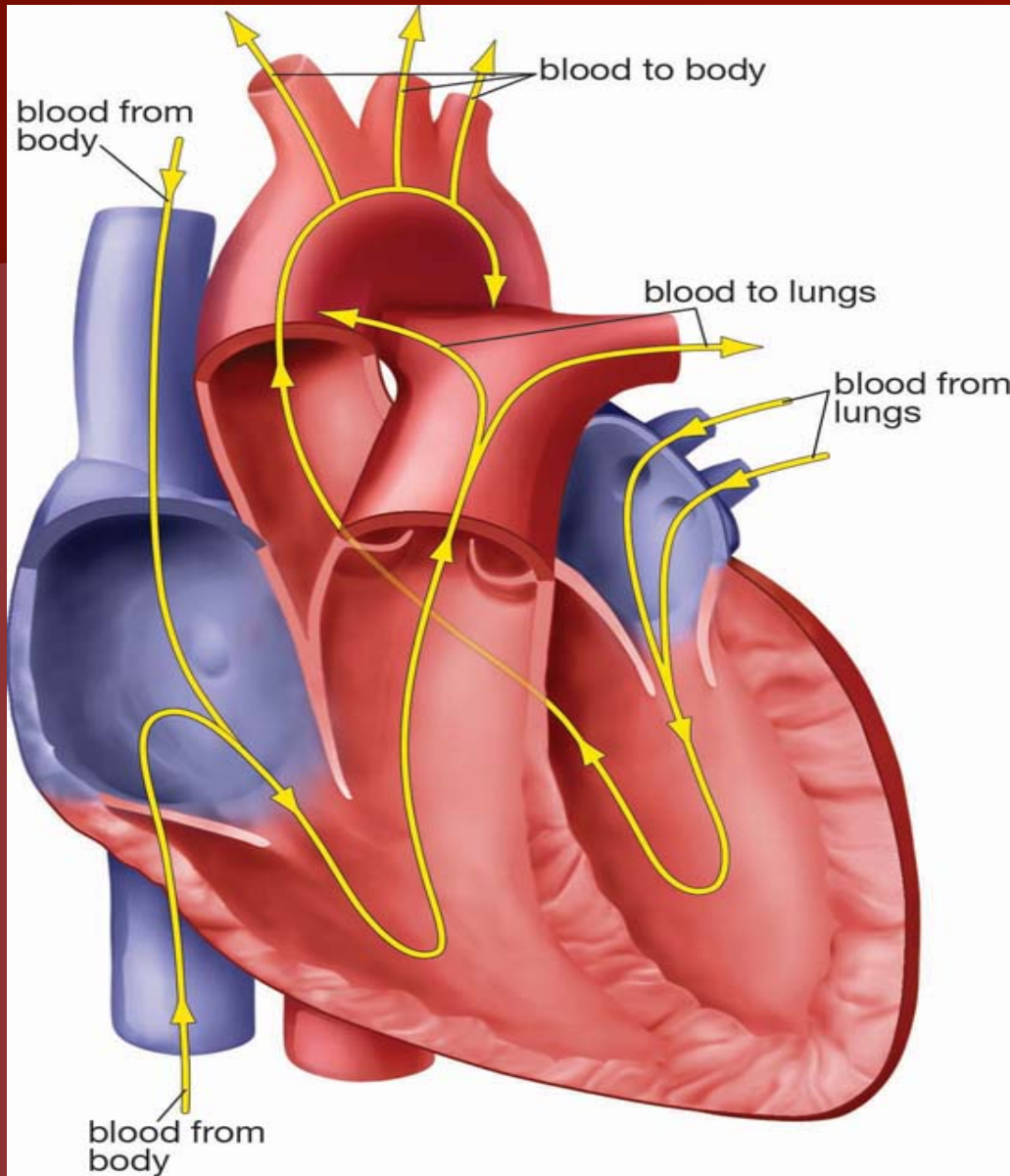
The Heart

- The heart is organized into 4 chambers: 2 upper chambers and 2 lower chambers
- The human heart takes blood in from the lungs (the upper chambers) and pumps it throughout the body (the lower chambers).
- Heart muscles are controlled by pacemaker cells which send out an electrical signals telling them when to contract.
- When resting, heart beats 50-100 times per minute.
- During physical activity, your body needs more oxygen and your heart beats faster.



Interior View of the Heart





The upper chambers of the heart take in blood from the body and the lungs.

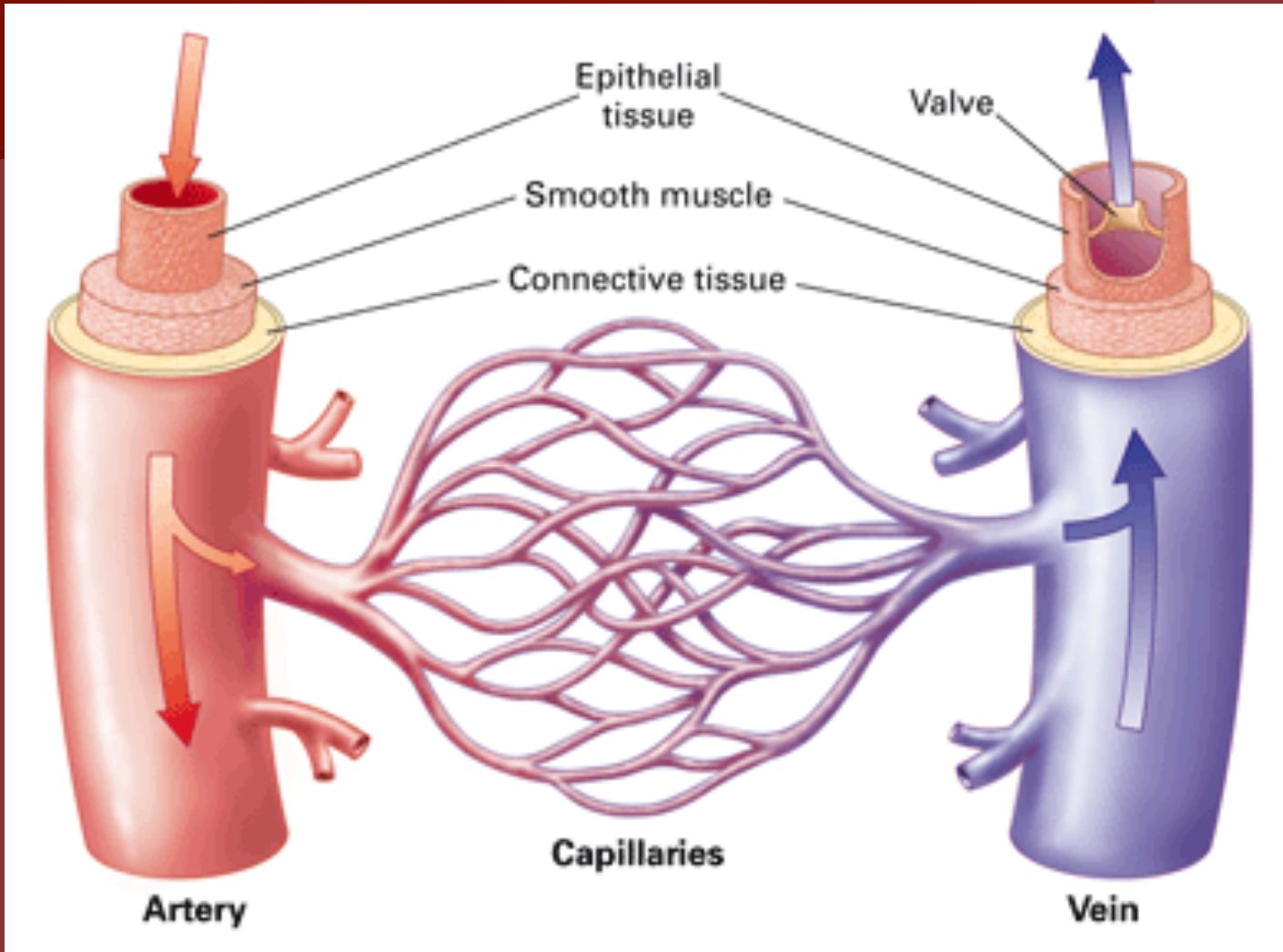
The lower chambers pump it into the lungs or to the rest of the body to supply oxygen to our cells.

Blood Vessels

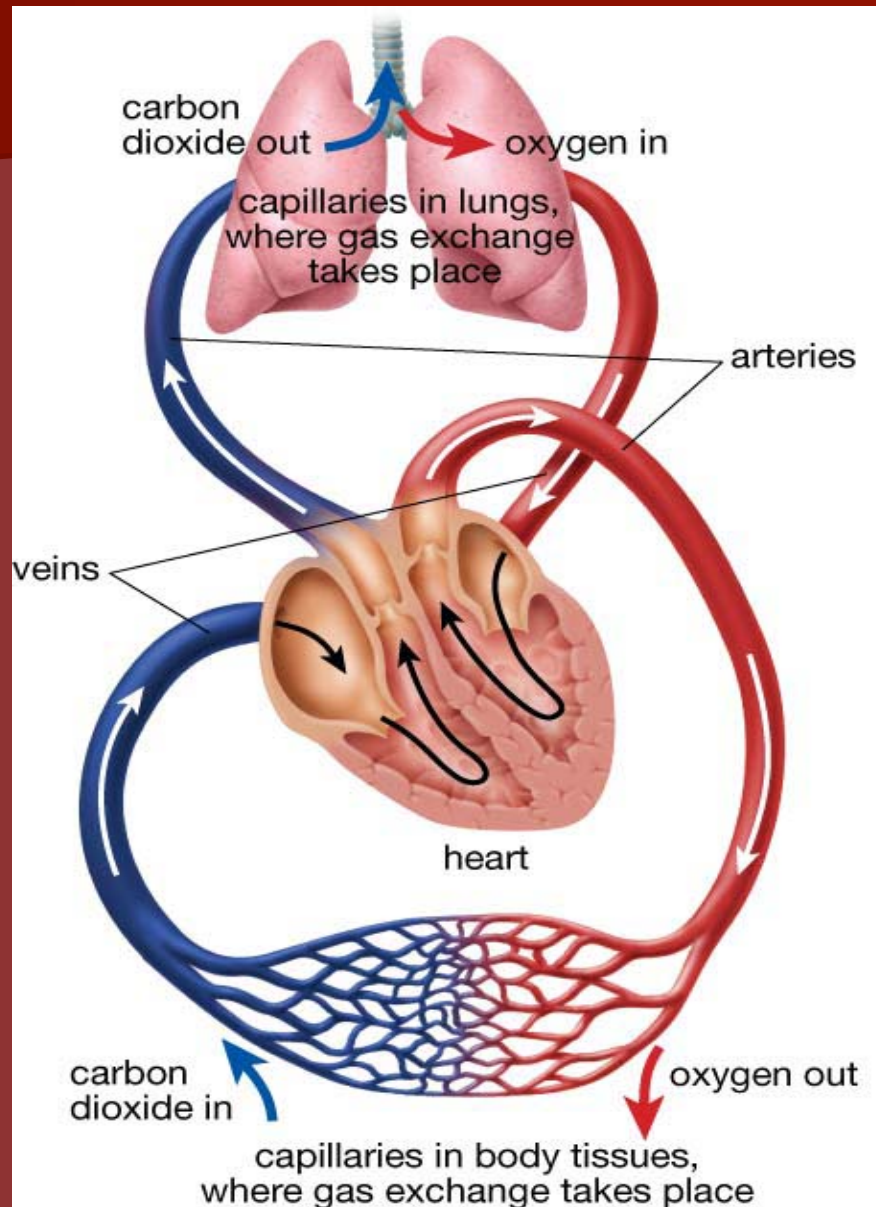
Blood vessels make up a network of tubes that carry blood through the body.

3 types of blood vessels:

- 1) Arteries – large muscular vessels that carry blood away from the heart under pressure. Thick muscular walls.
- 2) Veins – large vessel that carries blood toward the heart under low pressure.
- 3) Capillaries – tiny thin-walled vessel that allow the exchange of gases, nutrients, and wastes between the blood and body tissues.



The Circulation of Blood



Any blood vessels come in to the heart – vein – normally carry deoxygenated blood
 go out of the heart – artery – oxygenated blood

RA + RV – Pulmonary
 LA + LV – Systemic

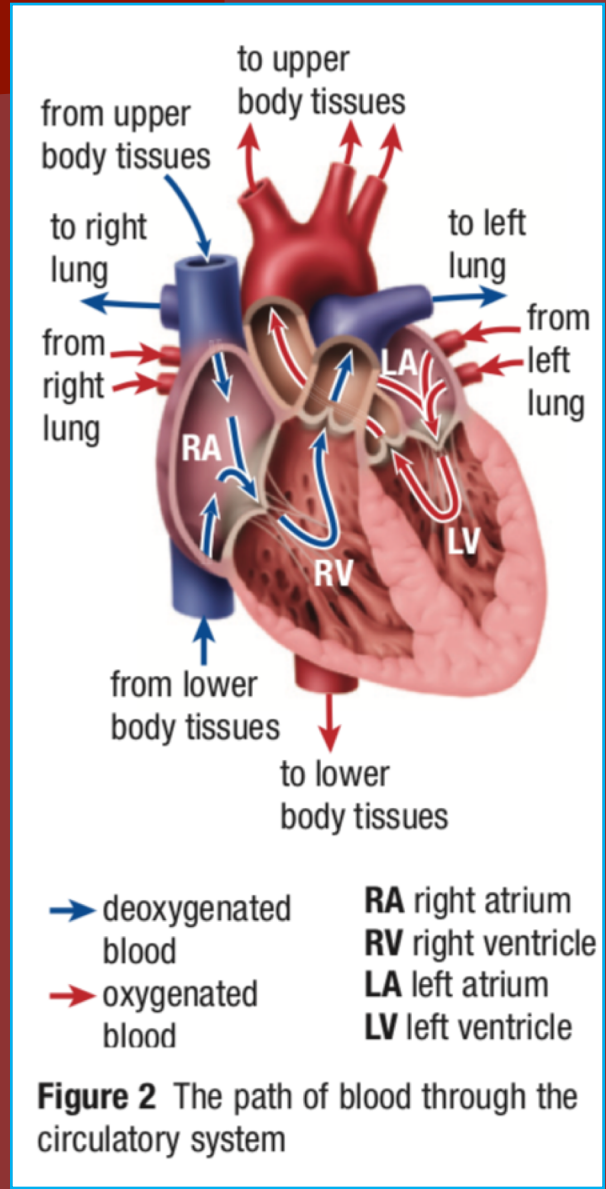
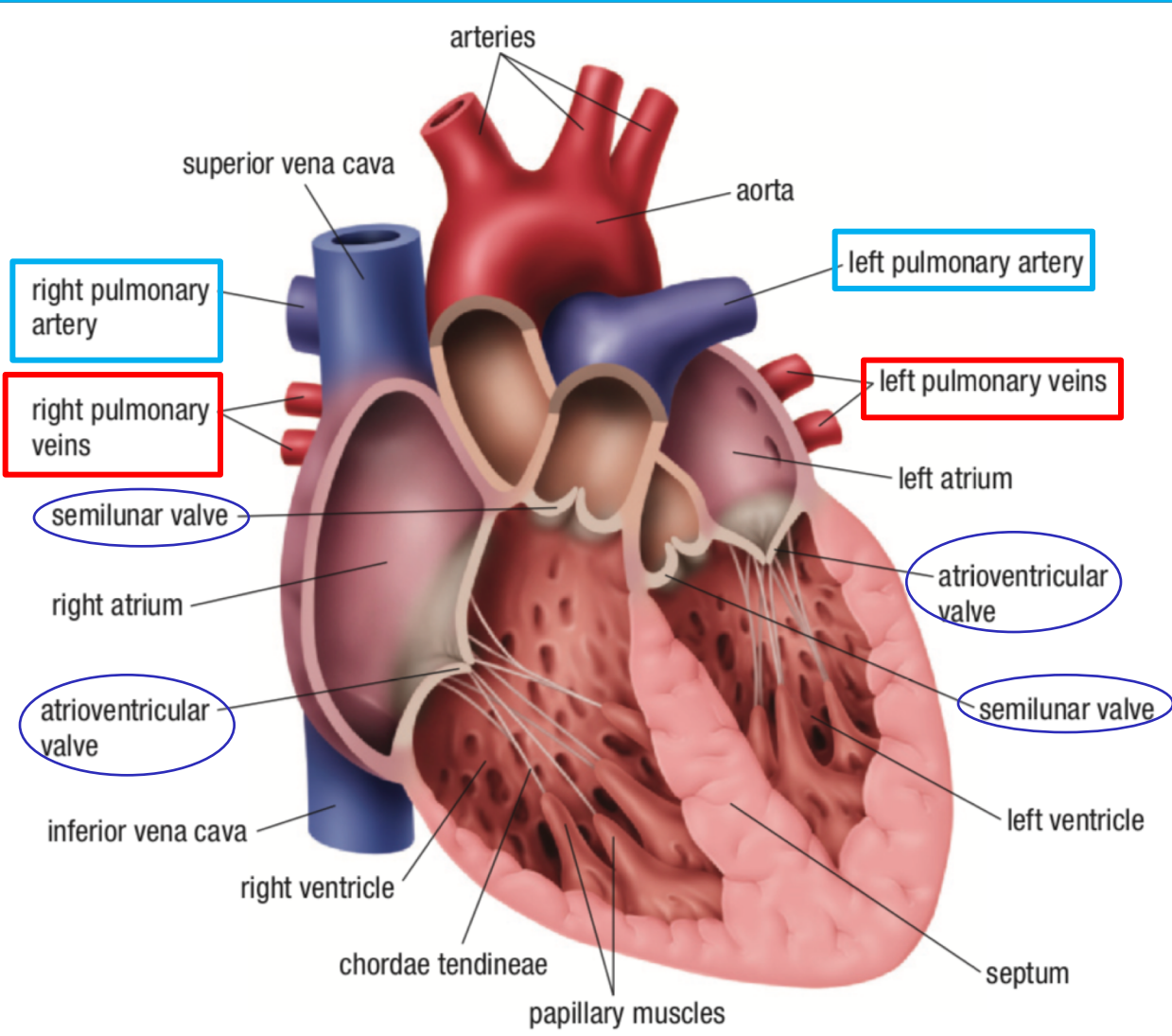


Figure 2 The path of blood through the circulatory system

Pathway of Blood

- Blood pumps to lungs and gas exchange takes place in the lungs: blood absorbs oxygen and gives off carbon dioxide.
- Oxygen-rich blood then travels back from the lungs into the left side of the heart.
- The heart then pumps the blood to the rest of the body through the arteries.
- The arteries then divide into smaller vessels and then even smaller capillaries.
- From the capillaries, oxygen and other substances diffuse out of the blood into surrounding tissues into the blood.
- The blood then flows from the capillaries into the veins.
- It completes the circuit returning to the right side of the heart.