

# Circulatory system

## 1. Heart:

- **Location:** In the chest, slightly left of the centre.
- **Function:** Acts as a muscular pump to circulate blood throughout the body.

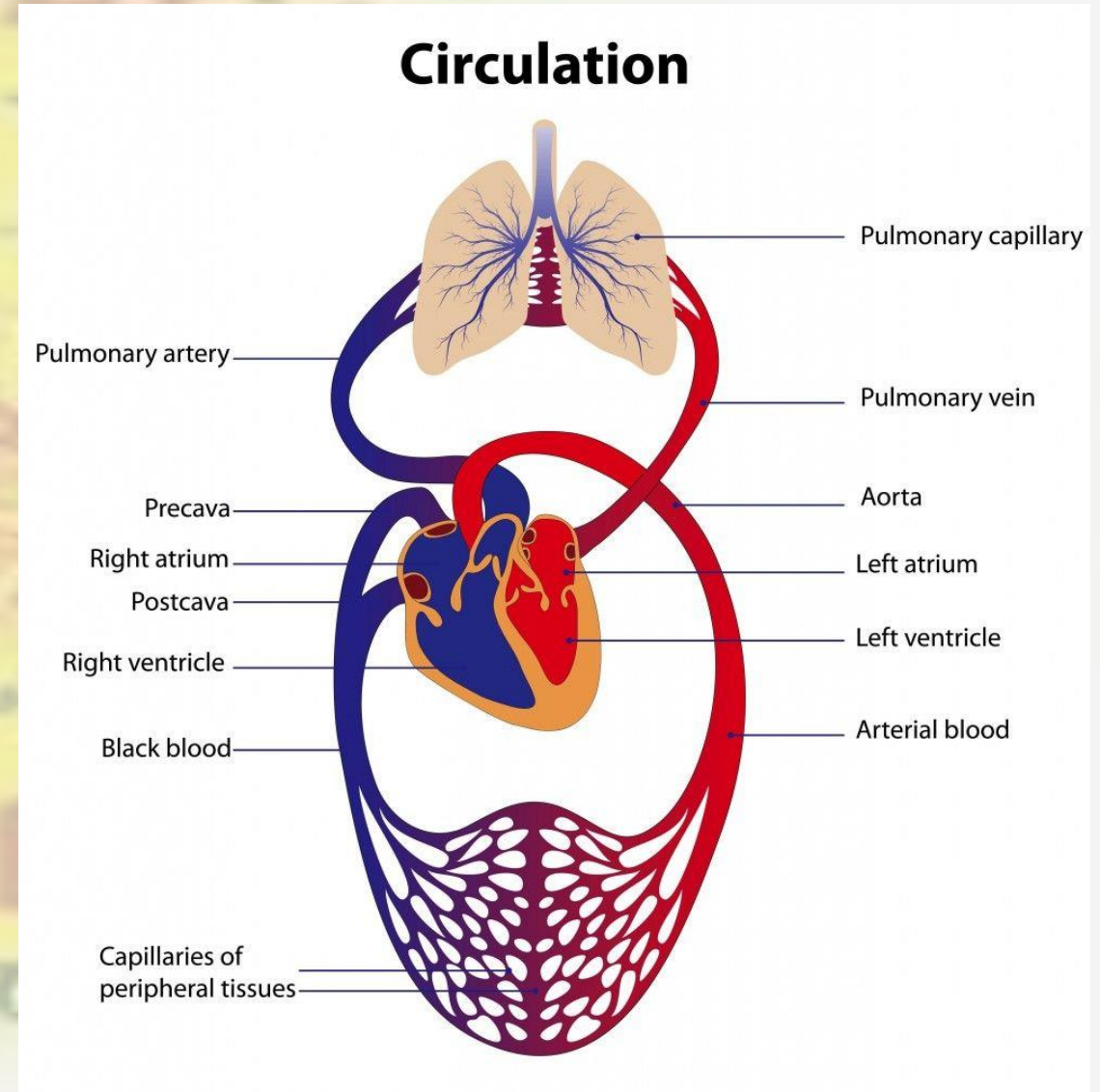
## 2. Blood Vessels:

### ● Arteries:

- Carry oxygenated blood (except for the pulmonary artery).
- Thick, muscular walls to withstand high pressure.

### ● Veins:

- Carry deoxygenated blood (except for the pulmonary vein).
- Have valves to prevent backflow.



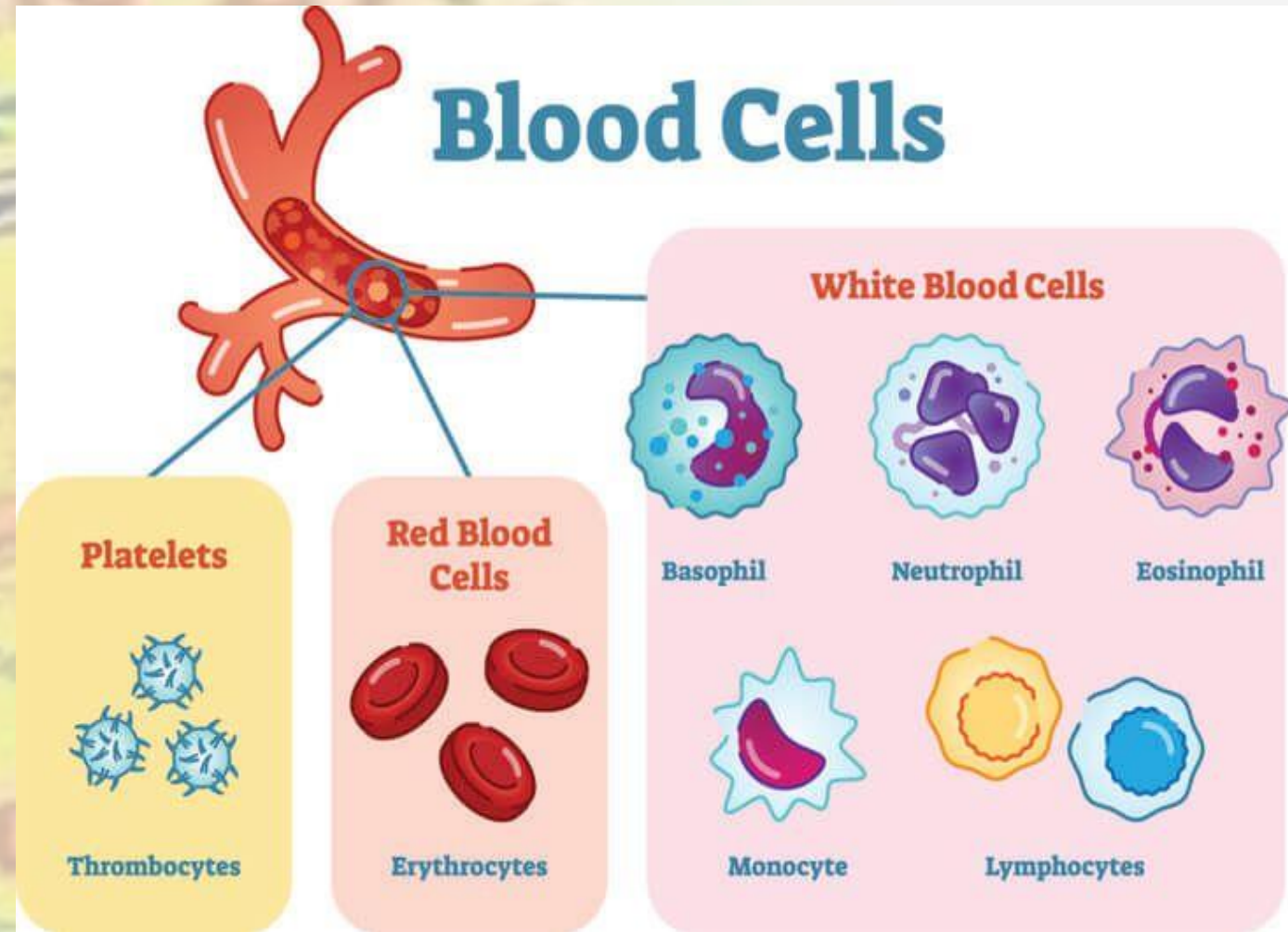
### 3. Capillaries:

- Microscopic vessels where gas exchange and nutrient exchange occur.

### 4. Blood:

- **Components:**

- Red Blood Cells (RBCs): Carry oxygen.
- White Blood Cells (WBCs): Contribute to the immune system.
- Platelets: Aid in blood clotting.
- Plasma: Liquid component containing water, nutrients, hormones, and waste products.





- The heart's bottom right pumping chamber (right ventricle) sends blood that's low in oxygen (oxygen-poor blood) to the lungs. Blood travels through the pulmonary trunk (the main pulmonary artery).
- Blood cells pick up oxygen in the lungs.
- Pulmonary veins carry the oxygenated blood from the lungs to the heart's left atrium (upper heart chamber).
- The left atrium sends the oxygenated blood into the left ventricle (lower chamber). This muscular part of the heart pumps blood out to the body through the arteries.
- As it moves through your body and organs, blood collects and drops off nutrients, hormones and waste products.
- The veins carry deoxygenated blood and carbon dioxide back to the heart, which sends the blood to the lungs.
- Your lungs get rid of the carbon dioxide when you exhale.

- **Arteries:** Arteries are thin, muscular tubes that carry oxygenated blood away from the heart and to every part of your body. The aorta is the body's largest artery. It starts at the heart and travels up the chest (ascending aorta) and then down into the stomach (descending aorta). The coronary arteries branch off the aorta, which then branch into smaller arteries (arterioles) as they get farther from your heart.
- **Veins:** These blood vessels return oxygen-depleted blood to the heart. Veins start small (venules) and get larger as they approach your heart. Two central veins deliver blood to your heart. The superior vena cava carries blood from the upper body (head and arms) to the heart. The inferior vena cava brings blood up from the lower body (stomach, pelvis and legs) to the heart. Veins in the legs have valves to keep blood from flowing backward.
- **Capillaries:** These blood vessels connect very small arteries (arterioles) and veins (venules). Capillaries have thin walls that allow oxygen, carbon dioxide, nutrients and waste products to pass into and out of cells.