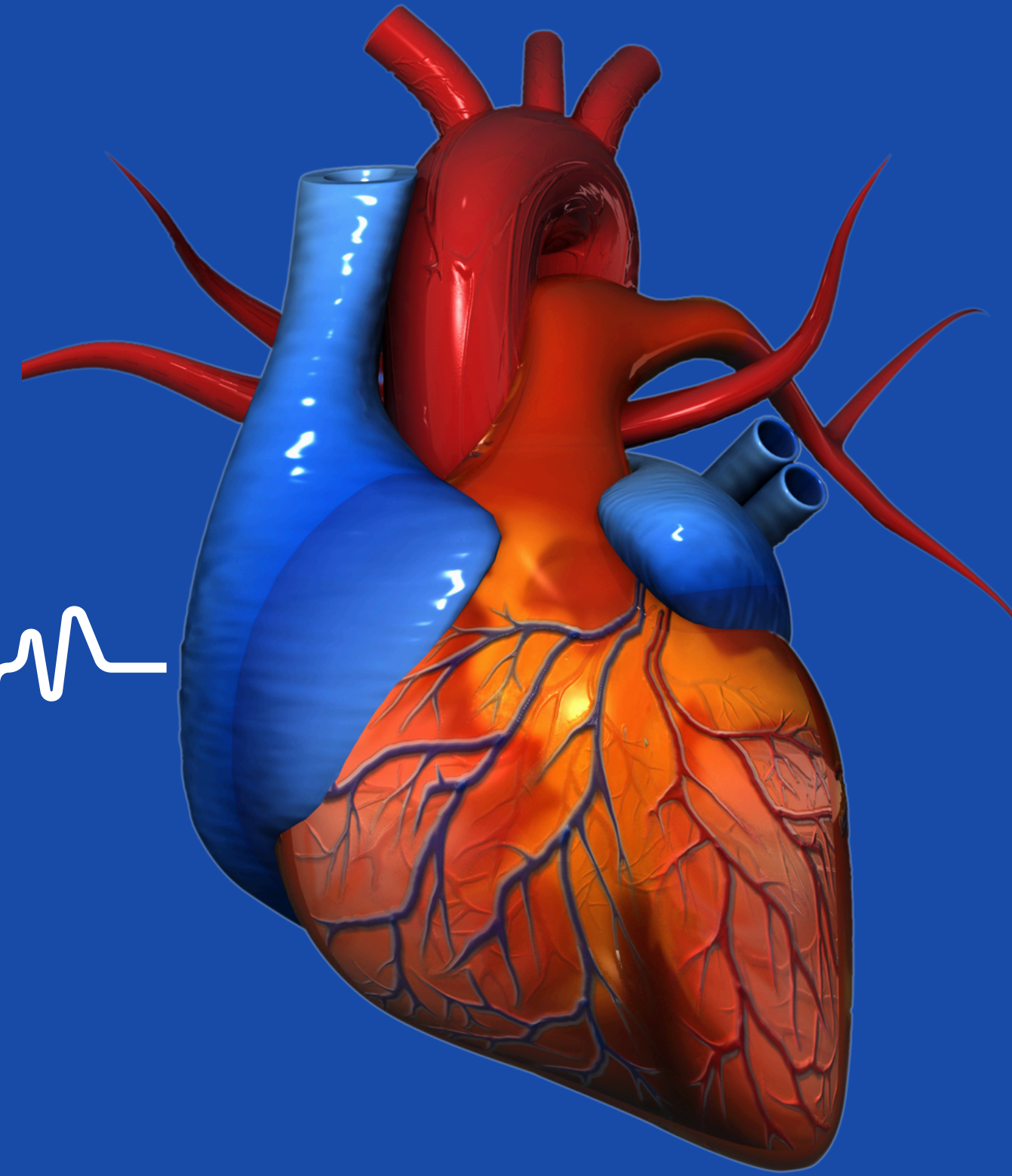


Don't miss a beat

THE HUMAN HEART

PARTS OF THE HEART

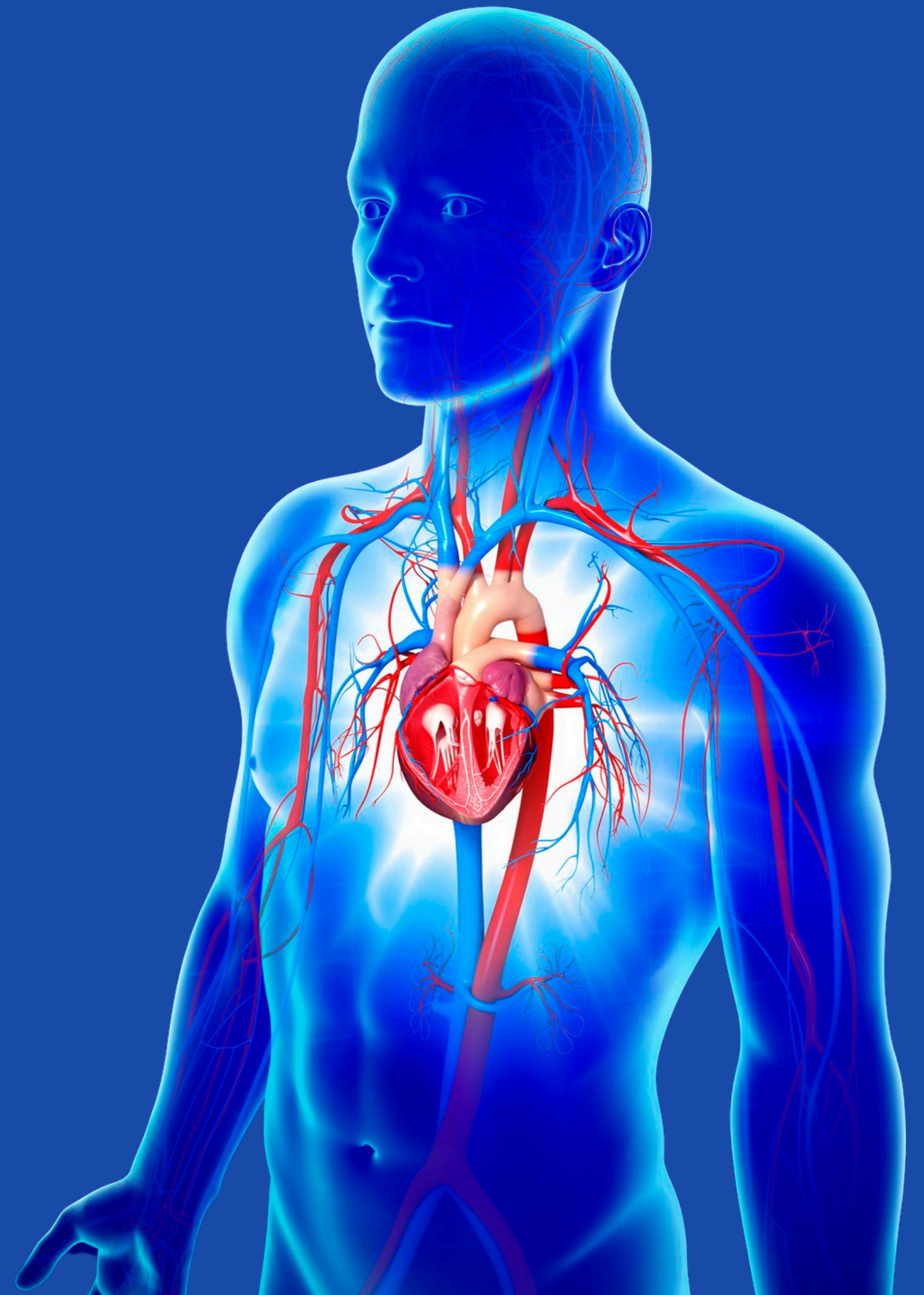
DOCTORS EXPLAIN



LEARNING OBJECTIVES

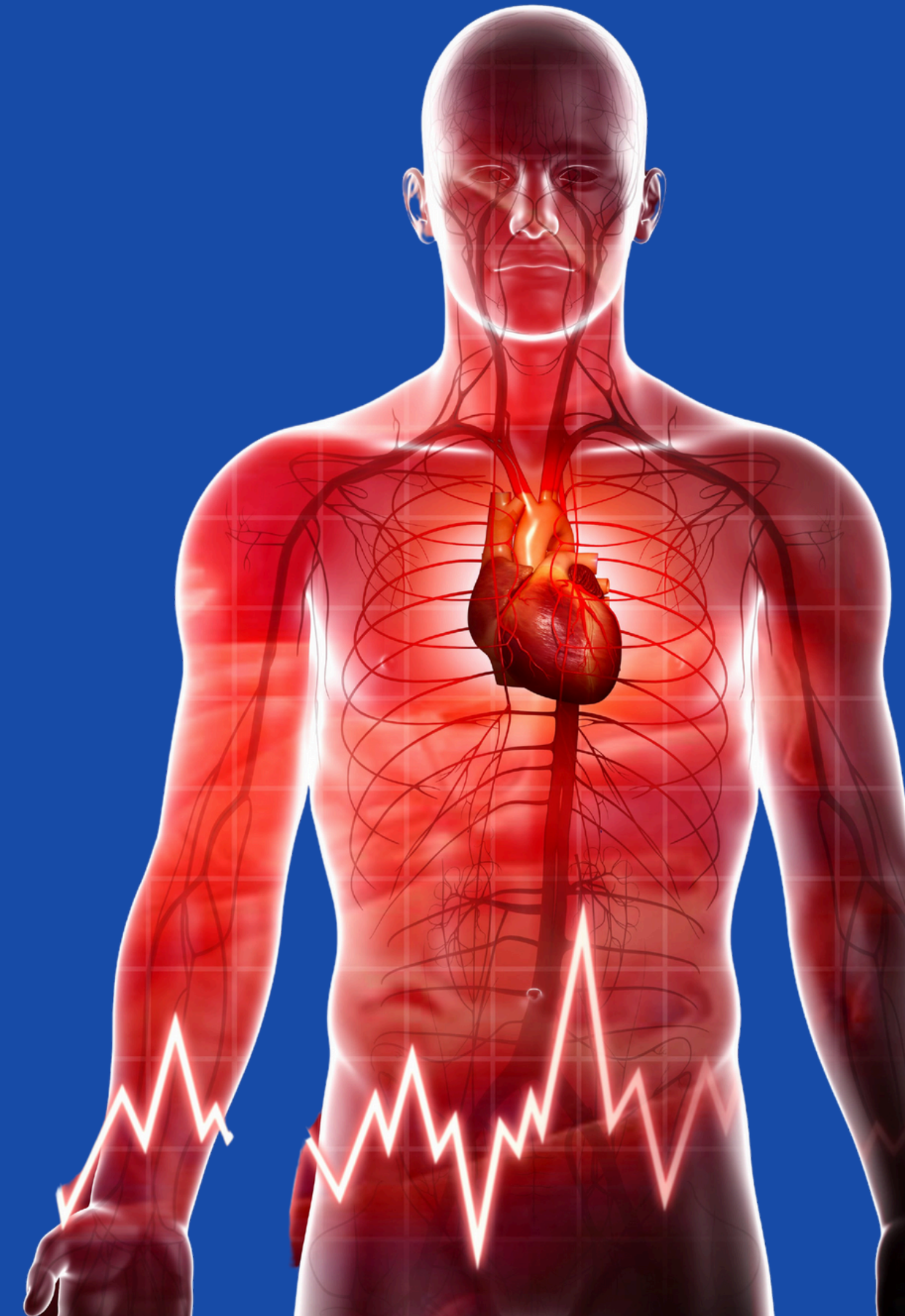
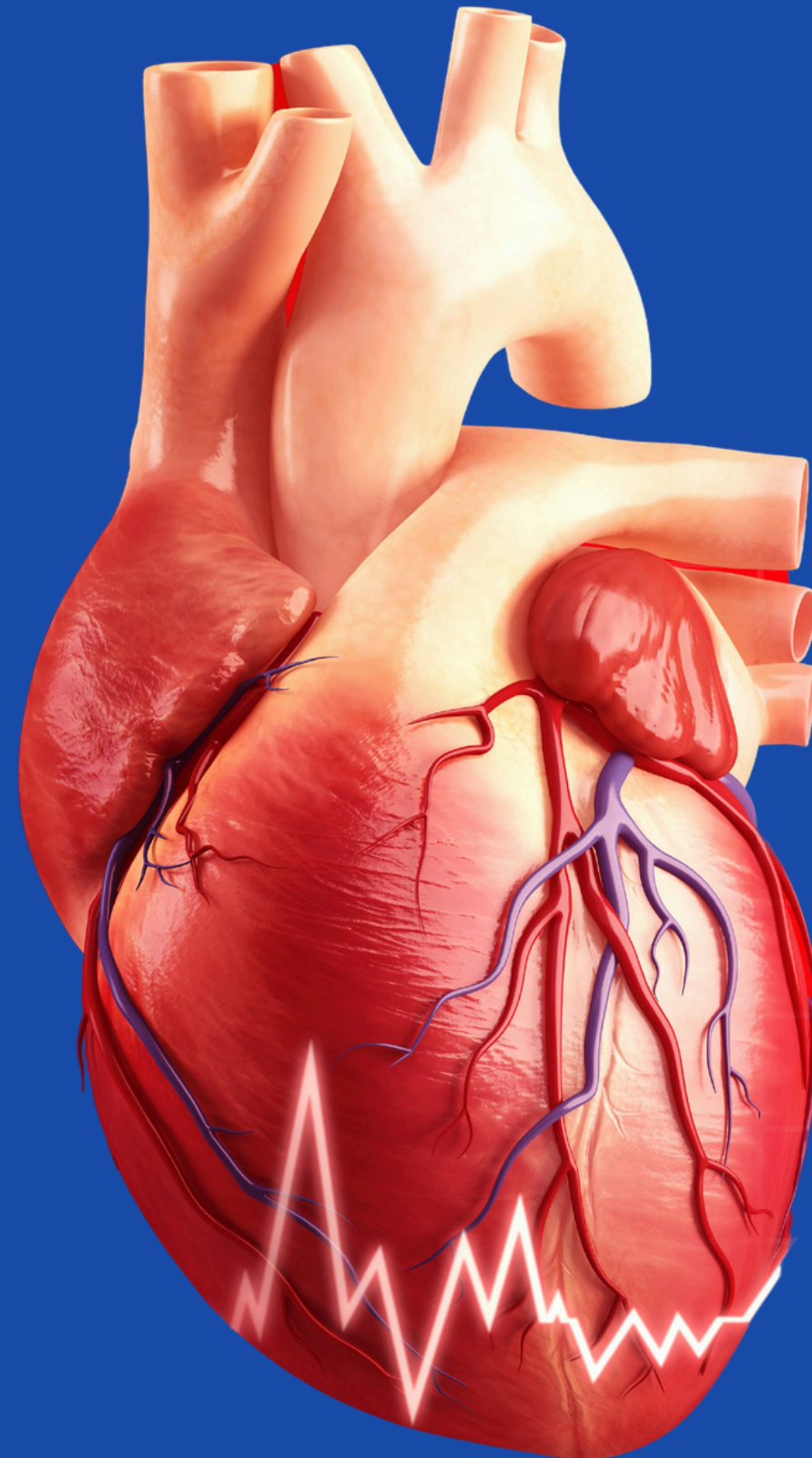
Understand the basic structure of the heart

Identify its parts and their functions



INTRODUCTION

THE HEART IS AN ESSENTIAL ORGAN IN THE HUMAN BODY RESPONSIBLE FOR PUMPING BLOOD AND MAINTAINING CIRCULATION. UNDERSTANDING ITS STRUCTURE AND FUNCTION IS CRITICAL FOR LEARNING HOW THE CIRCULATORY SYSTEM SUPPORTS LIFE.



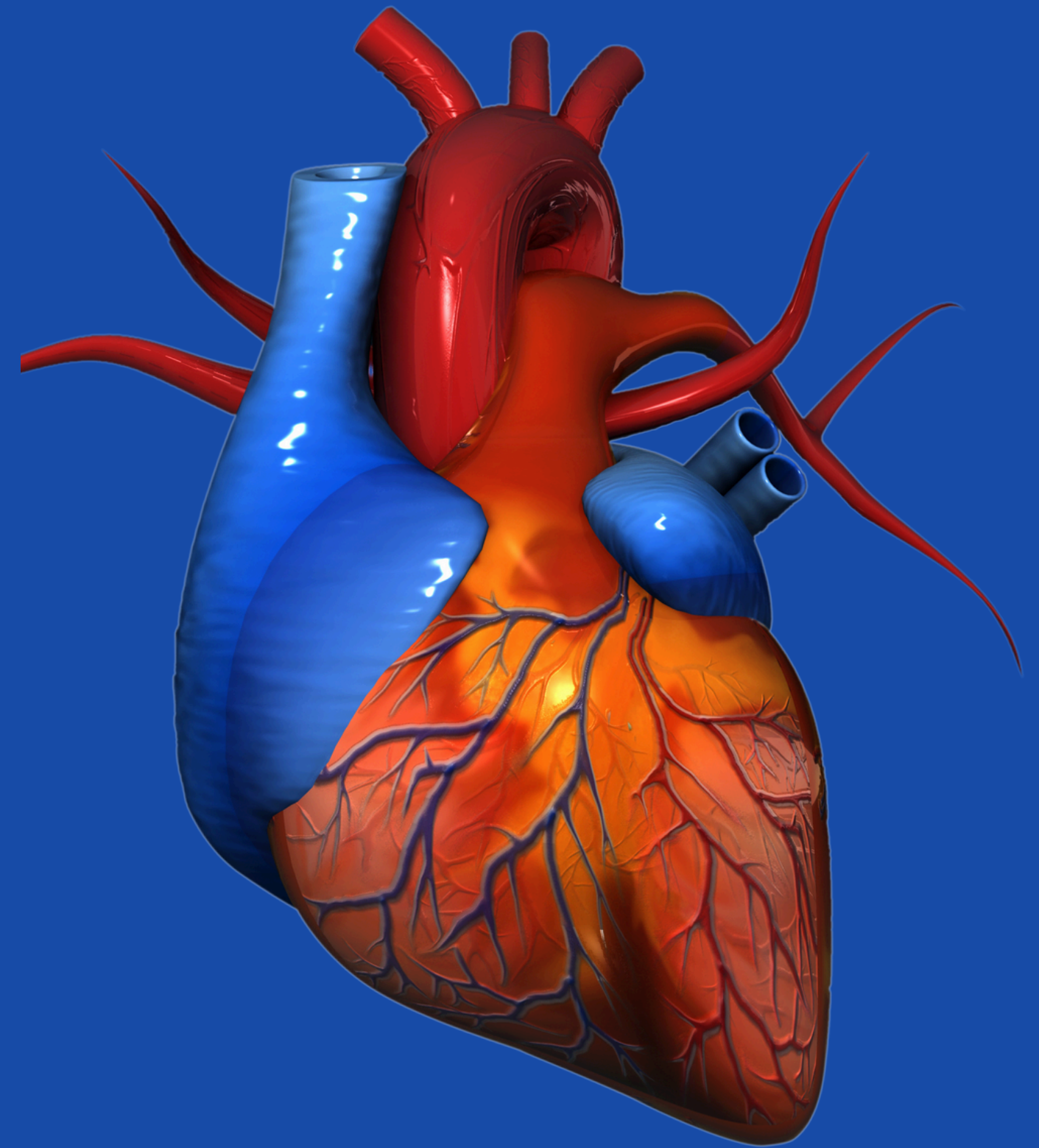
BASIC ANATOMY OF THE HEART

Size

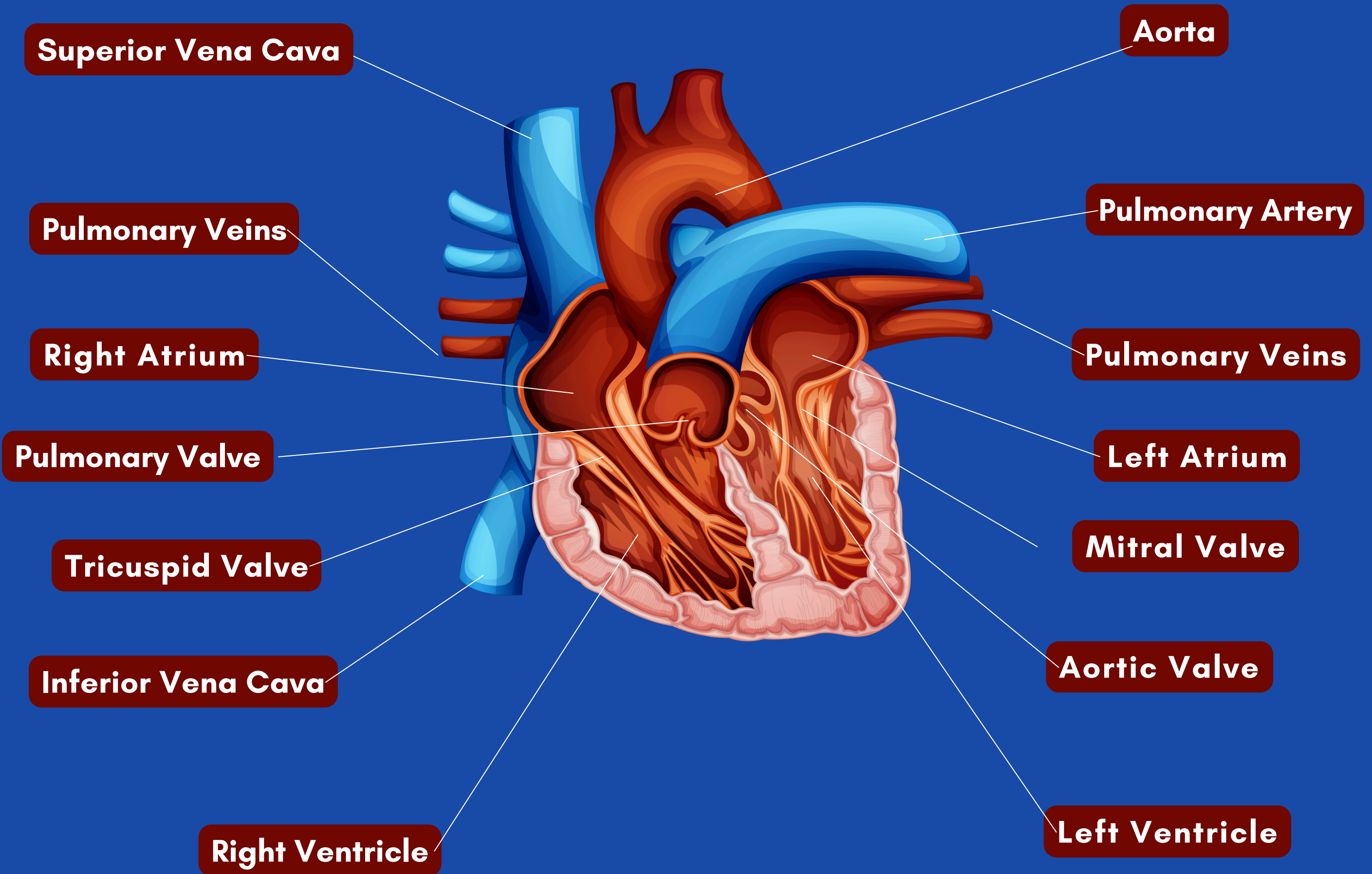
The heart is a muscular organ about the size of a fist, weighing between 250–350 grams.

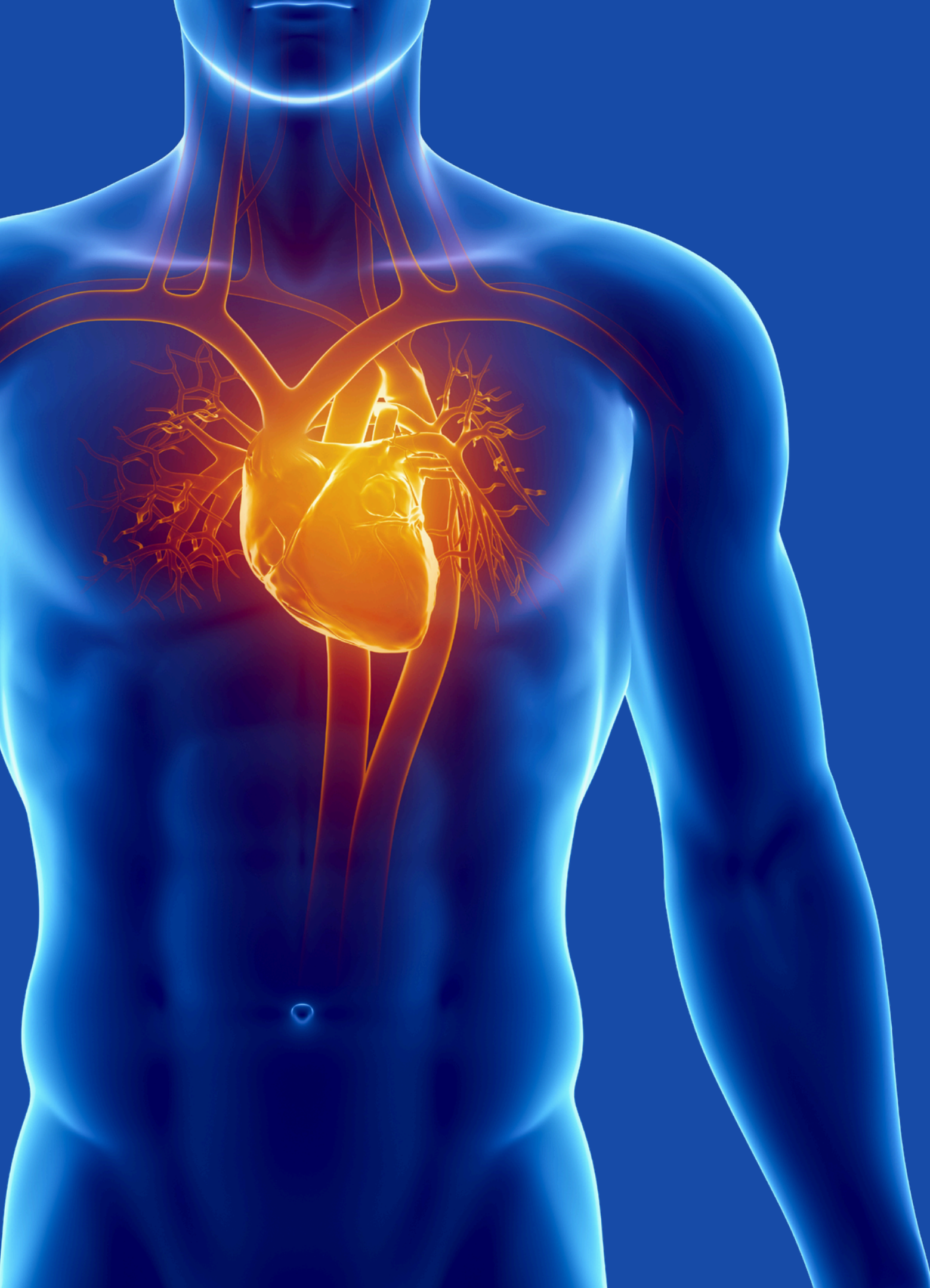
Location

It is located slightly to the left of the chest, in the thoracic cavity, between the lungs and behind the sternum. The rib cage protects the heart from injury.



PARTS OF THE HEART





WALLS OF THE HEART

The heart wall is composed of three layers:

Epicardium: The outer protective layer.

Myocardium: The muscular middle layer responsible for contraction.

Endocardium: The inner lining that contacts the blood.

The Septum: The septum is a muscular wall that divides the heart into left and right sides, preventing the mixing of oxygen-rich and oxygen-poor blood.

STRUCTURE OF THE HEART

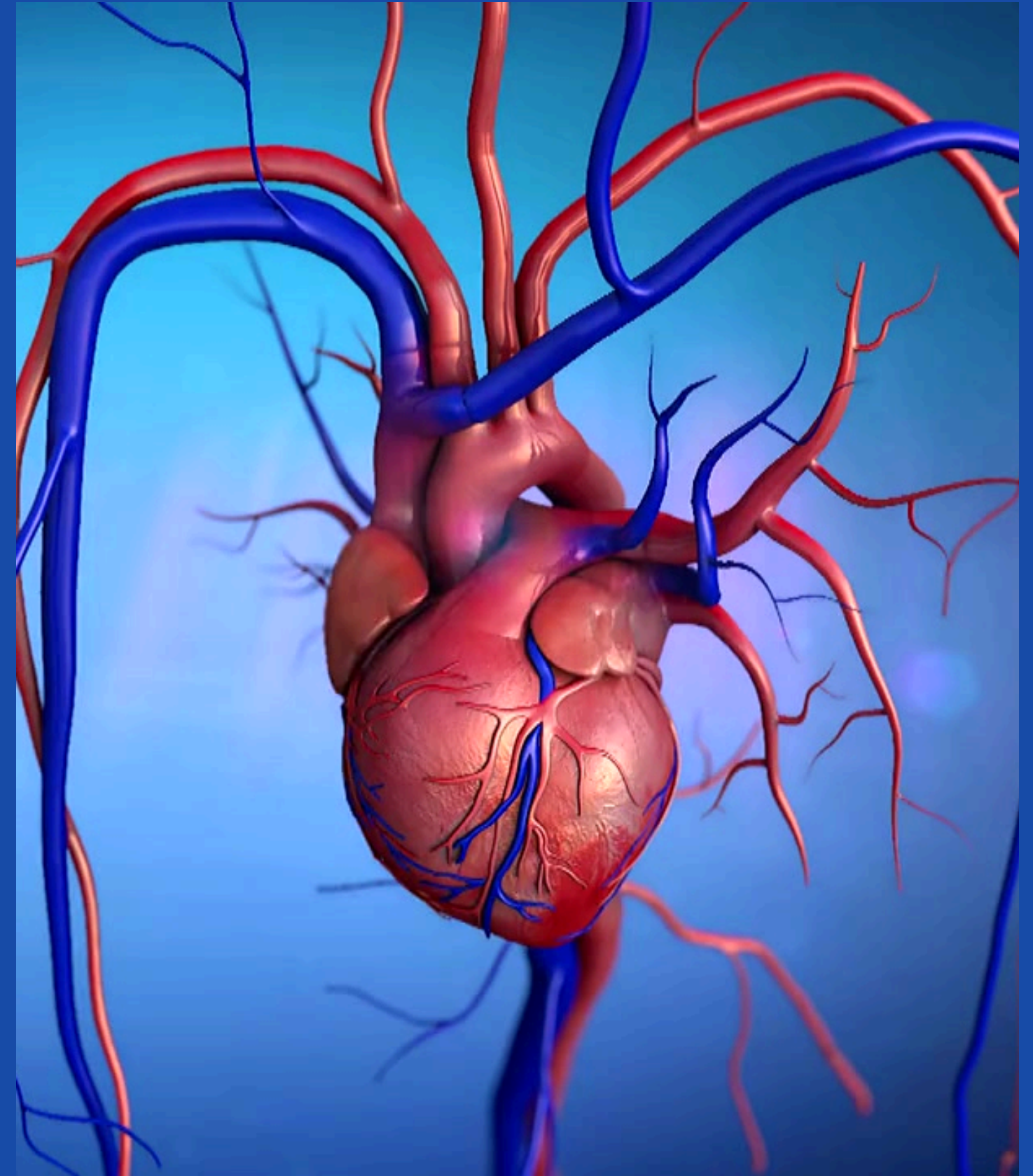
The heart is divided into **four** chambers:

Right Atrium: Receives oxygen-poor blood from the body.

Right Ventricle: Pumps oxygen-poor blood to the lungs.

Left Atrium: Receives oxygen-rich blood from the lungs.

Left Ventricle: Pumps oxygen-rich blood to the rest of the body.



LEFT

Left Atrium

Collects oxygen-rich blood from the lungs through the pulmonary veins. It transfers this blood to the left ventricle for systemic circulation and acts as a reservoir, preparing oxygenated blood for distribution throughout the body.

Left Ventricle

Pumps oxygen-rich blood to the body via the aorta. As the strongest chamber, it generates high pressure to counter systemic resistance. This ensures that tissues and organs receive the necessary oxygenated blood for optimal functioning.

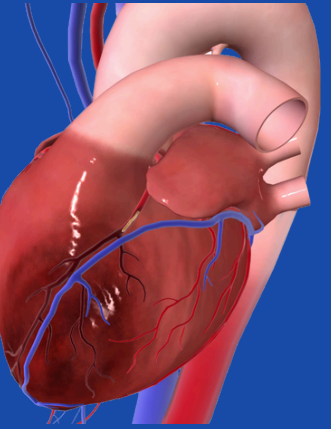
RIGHT

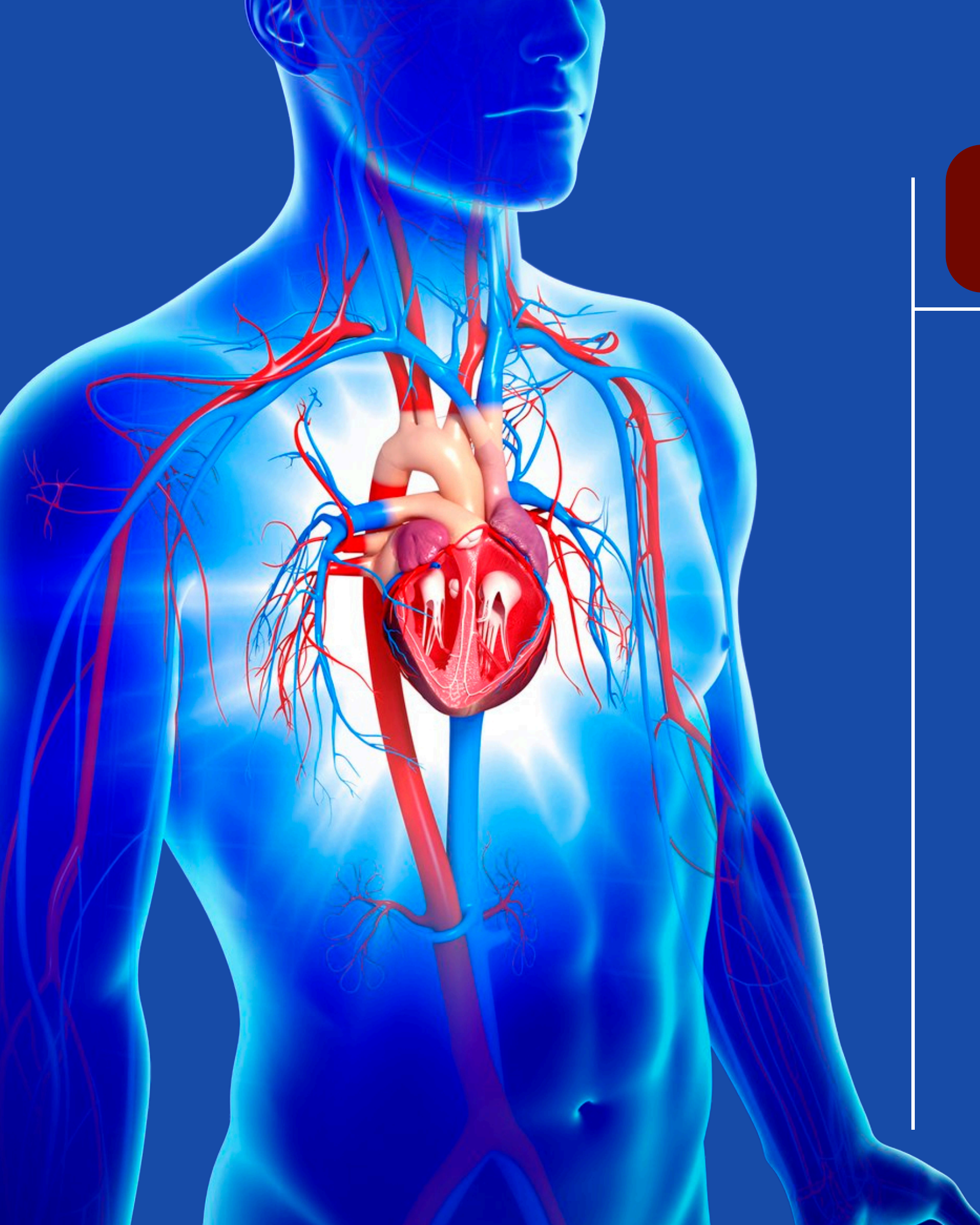
Right Atrium

Receives deoxygenated blood from the body through the superior and inferior vena cavae. It collects this blood from systemic circulation and transfers it to the right ventricle, playing a crucial role in the process of pulmonary circulation.

Right Ventricle

Pumps deoxygenated blood to the lungs through the pulmonary arteries. This chamber is responsible for delivering blood to the lungs for oxygenation, allowing carbon dioxide to be expelled and oxygen to be absorbed before the blood returns to the left side of the heart for systemic circulation.





VALVES OF THE HEART

Atrioventricular (AV) Valves

Tricuspid Valve: Between the right atrium and right ventricle.

Mitral Valve: Between the left atrium and left ventricle.

Semilunar Valves

Pulmonary Valve: Between the right ventricle and pulmonary artery.

Aortic Valve: Between the left ventricle and aorta.

Function: Valves ensure one-way blood flow, preventing back flow.

ATRIOVENTRICULAR (AV) VALVES

Tricuspid Valve

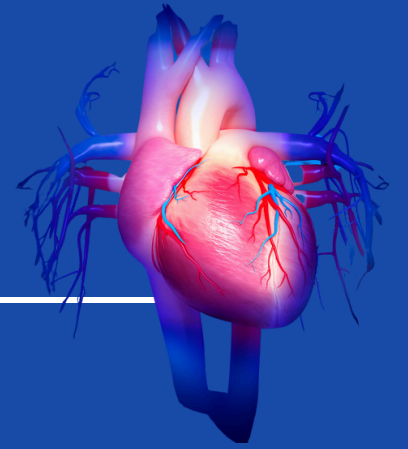
The tricuspid valve is located between the right atrium and right ventricle. It is comprised of three flaps (cusps) that open and close. During diastole (heart relaxation), the valve opens to allow blood to flow from the right atrium into the right ventricle. During systole (heart contraction), the valve closes to prevent blood from flowing backward into the right atrium, ensuring one-way blood flow.

Mitral Valve (Bicuspid Valve)

The mitral valve is located between the left atrium and left ventricle. It has two flaps (cusps) that are stronger and more robust than the tricuspid valve, as it handles higher pressure. During diastole, the valve opens to permit oxygen-rich blood to flow from the left atrium to the left ventricle.

It closes during systole to prevent blood from regurgitating back into the left atrium, maintaining efficient circulation.

SEMILUNAR VALVES



Pulmonary Valve

The pulmonary valve, located between the right ventricle and the pulmonary artery, is composed of three crescent-shaped cusps. It opens during systole to allow oxygen-poor blood to flow to the lungs for oxygenation and closes during diastole to prevent backflow into the right ventricle. This ensures efficient one-way blood flow toward the lungs, preventing regurgitation and maintaining proper oxygenation.

Aortic Valve

The aortic valve, positioned between the left ventricle and the aorta, also consists of three semilunar cusps designed to withstand high pressure. It opens during systole to allow oxygen-rich blood to flow into the aorta for distribution throughout the body and closes during diastole to prevent backflow into the left ventricle. This valve ensures efficient systemic circulation, supporting the body's metabolic needs.