

Difference Between Auricle and Ventricle

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Key Difference - Auricle vs Ventricle

Circulation is an important aspect of living organisms. The presence of a circulatory system in living organisms ensures the transportation of essential elements throughout the body. The human circulatory system possesses a heart as the pumping device. The heart is composed of four chambers, two upper chambers (left and right atria or auricles) and two lower chambers (left and right ventricles). The human heart involves in maintaining two types of circulatory mechanisms; pulmonary circulation and systemic circulation. The **key difference** between Auricle and Ventricle is that **Auricle is located in the upper part of the heart while Ventricle is located in the lower part of the heart.**

What is Auricle?

The upper chamber of the heart where blood is entered is referred to as auricle or atrium. The human heart possesses two atria, left atrium and right atrium. The two atria are separated into the left atrium and right atrium by a muscular wall at the medial edge of the right atrium. This is referred as an interatrial septum. This separation prevents the mixing of atrium blood between the two atria. The left atrium receives blood from the lungs whilst the right atrium receives blood from venous circulation. In other terms, the lungs provide oxygenated blood to the left and right pulmonary veins. This blood is pumped into the left ventricle through the mitral valve which is then pumped out through the aorta that ends up in the systemic circulation.

The right atriums receive deoxygenated blood from the superior vena cava and inferior vena cava and direct it down to the right ventricle through the tricuspid valve which afterward is sent out from the heart through the pulmonary artery for pulmonary circulation. The basic function of the atria is to receive oxygenated blood from the lungs and provide it for systemic circulation and to receive deoxygenated blood and direct it for oxygenation through the pulmonary circulation. The atria don't possess any inlet valves. They only possess bicuspid and tricuspid valves which connect the left and right ventricles respectively.

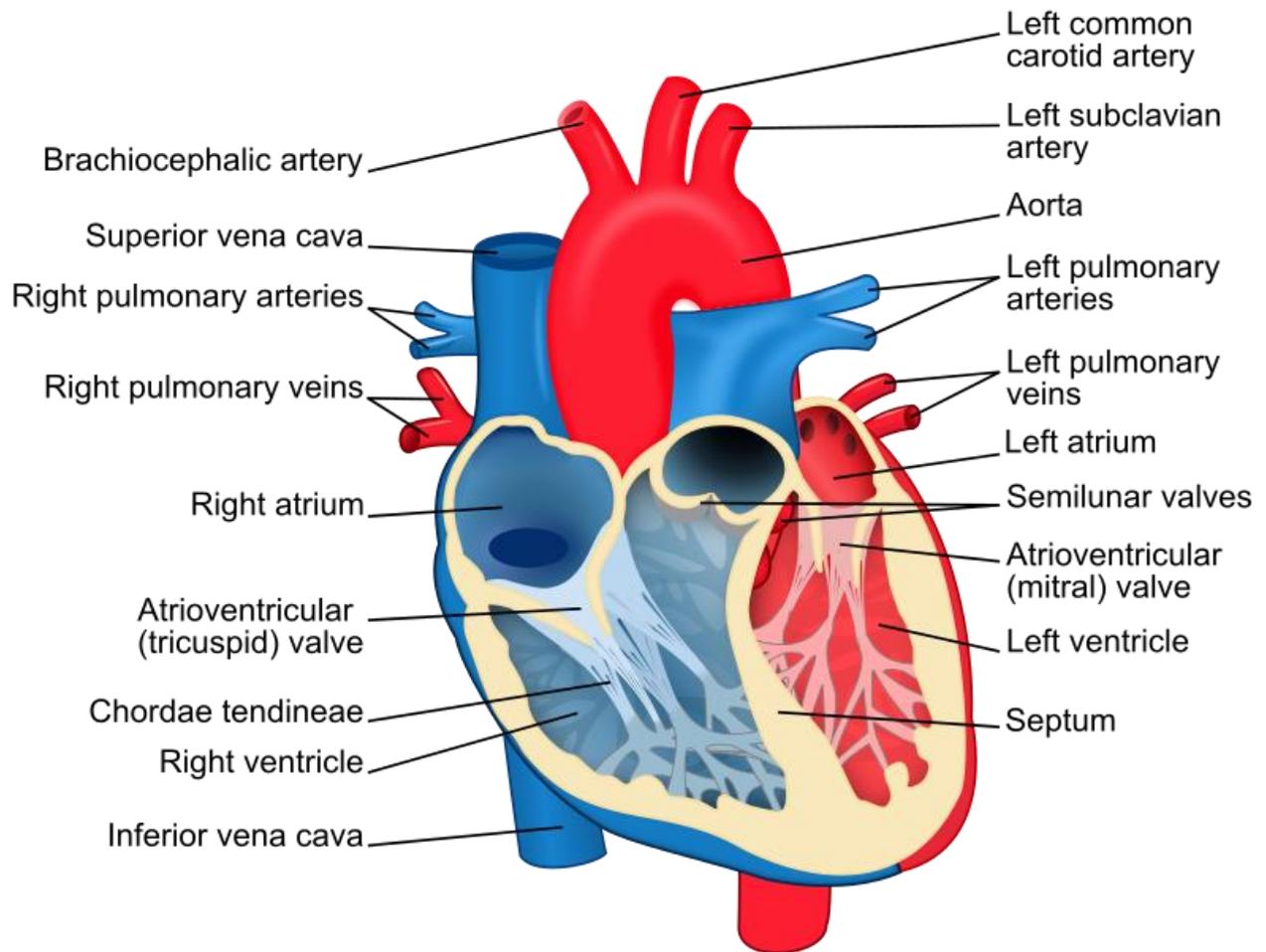


Figure 01: Auricle/Atrium

The atriums possess nodes. The Sinoatrial (SA) node is located in the posterior region of the atrium which is closer to the superior vena cava. The SA node consists of a group of cells known as pacemaker cells. These cells cause spontaneous depolarization which results in the generation of an action potential. The resulted cardiac action potential spreads across both left and right atria which stimulates the contraction. This contraction results in the pumping of blood into the ventricles through the valves. The autonomic nervous system connects the heart to the brain through the SA node and involves in the regulation of blood pressure with oxygen and carbon dioxide homeostasis. Another type of node called atrioventricular (AV) node is present between the atria and ventricles.

What is Ventricle?

The lower chambers of the heart are ventricles. Similar to auricles, ventricles are of two types, the left ventricle, and the right ventricle. Both left and right ventricles are equal in size. The left ventricle in comparison with the right ventricle is longer and provides a conical shape to the heart. The walls of the left ventricle are thicker than the walls of the right ventricle in order to withstand the pressure since it involves in pumping blood throughout the body. The right ventricles have more thinly walls towards the atrium but they are thicker towards the base of the ventricle since it pumps blood only to the lungs. Both ventricle walls are thicker than atrial walls.

The inner walls of the ventricles are composed of irregularly arranged muscle columns known as trabeculae carneae. These muscular columns consist of three types of different muscles. Out of the three muscles chordae tendinae is important since it attaches the cusps of the tricuspid valve and to the mitral valve. The interventricular septum divides the right ventricle from the left ventricle. During systole and diastole the ventricles contract, and they pump blood throughout the body and relaxes to refill blood respectively.

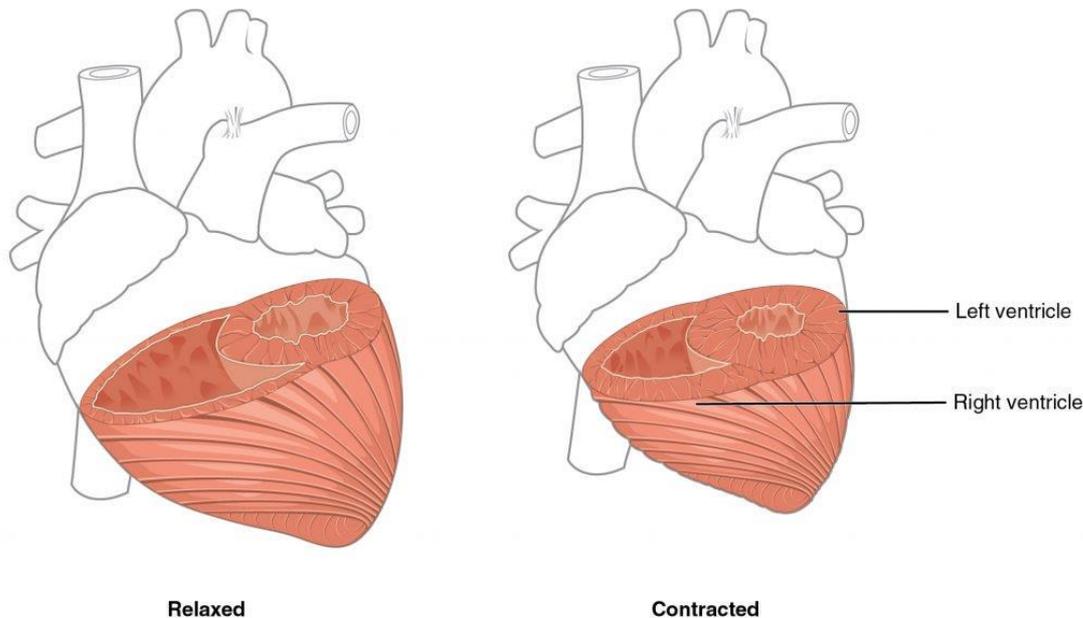


Figure 02: Ventricles

The left atrium provides oxygenated blood into the left ventricle through the mitral valve. Once received, the left ventricle pumps blood into the systemic circulation through the aorta with the help of the aortic valve. During this process, the left ventricular muscles contract and relax rapidly. This is controlled by the nervous system. The right atrium provides deoxygenated blood into the right ventricle through the tricuspid valve. The received blood is directed for pulmonary circulation through the pulmonary artery via the pulmonary valve.

What is the Similarity Between Auricle and Ventricle?

- Both are involved in pulmonary and systemic blood circulation.

What is the Difference Between Auricle and Ventricle?

Auricle vs Ventricle	
The auricles or atria are the upper chambers of the heart which is classified into left and right atria.	The lower chambers the heart are ventricles which consist of left and right ventricles.

Function	
Auricles receive deoxygenated blood from the systemic circulation through superior vena cava and inferior vena cava and directed down to the right ventricle through the tricuspid valve which is then sent out from the heart through the pulmonary artery for pulmonary circulation.	Ventricles receive oxygenated blood through the mitral valve from the left atrium which then is pumped out through the aorta into systemic circulation.
Chamber Walls	
Auricles have thinner walls.	Ventricles have comparatively thicker walls to withstand the pressure.

Summary - Auricle vs Ventricle

The human heart is composed of four chambers, two upper chambers, and two lower chambers. The upper chambers are atria and lower chambers are ventricles. The human heart involves in maintaining two types of circulatory mechanisms; pulmonary circulation and systemic circulation. The right atrium receives deoxygenated blood from the systemic circulation and provides it to the right ventricle for pulmonary circulation whilst the left atrium receives oxygenated blood from the lungs and direct to left ventricle for systemic circulation. The ventricles have thicker walls than atria. This is the difference between atrium and ventricle.

Reference:

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- 2.Anatomy of the Human Heart. [Available here](#)

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