

# Difference Between Mitral Valve and Aortic Valve

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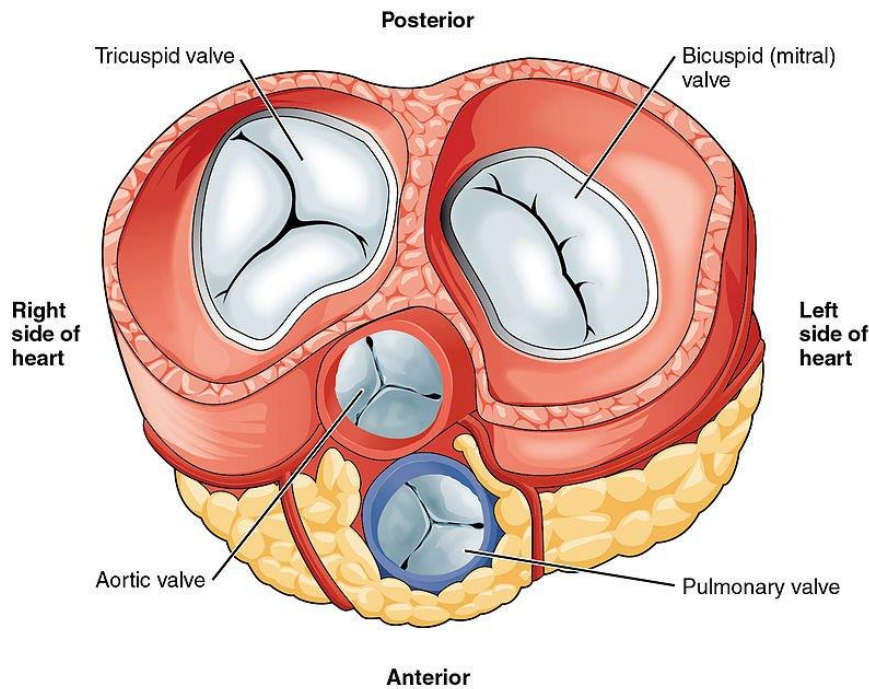
## Key Difference - Mitral Valve vs Aortic Valve

Human heart possesses four important valves. They are mitral valve (bicuspid valve), tricuspid valve, aortic valve and pulmonary valve. All valves play a key role in the normal functioning of the heart which regulates the blood flow and prevents backflow. Mitral valve and aortic valve control the systemic circulation. **The mitral valve is located in between the left atrium and the left ventricle whilst the aortic valve is located in between the left ventricle and aorta.** This is the **key difference** between mitral valve and aortic valve.

## What is Mitral Valve?

The mitral valve is also referred to as the bicuspid valve or left atrioventricular valve. It is located in between the left atrium and left ventricle of the heart. The term bicuspid refers to two cusps. Therefore, the mitral valve consists of two cusps. They are anteromedial cusp and posterolateral cusp. The area of a typical mitral valve lies between 4 cm<sup>2</sup> to 6 cm<sup>2</sup>. A fibrous ring is present at the opening of the valve which is known as the mitral annulus.

During pulmonary blood circulation, the left atrium receives oxygenated blood from the lungs which are passed into the left ventricle for systemic circulation via the mitral valve. The main function of the mitral valve is to prevent the backflow of blood. This prevents the mixing of ventricular blood with the atrial blood. To achieve this, the mitral valve closes during systole and opens during diastole. The pressure that is built up in the left atrium and left ventricle causes the opening and closing of the mitral valve. The valve opens when the built up pressure within the left atrium is greater than the pressure within the left ventricle. The valve closes due to high pressure built up in the left ventricle than in the left atrium.



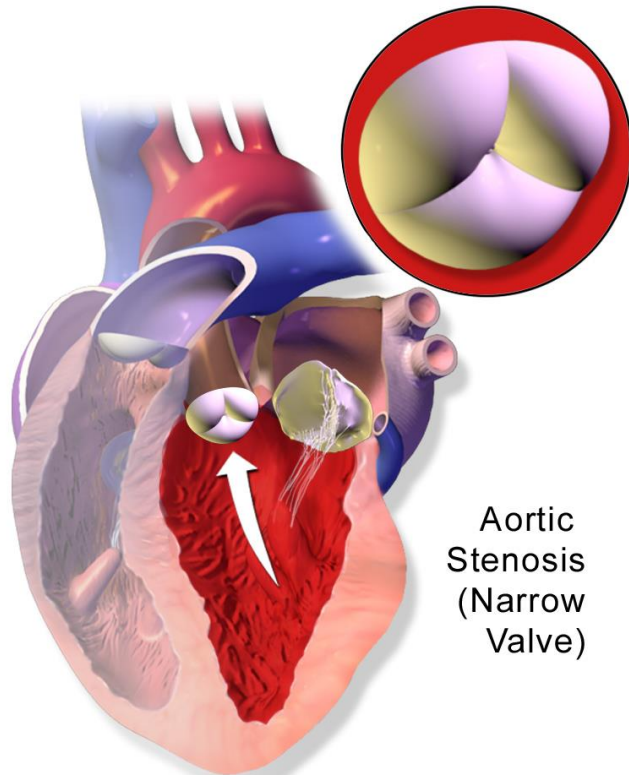
**Figure 01: Mitral Valve**

The malfunctioning of the mitral valve results in severe heart failure. Different disease conditions affect the normal functioning of the valve. When the mitral valve is disrupted, it results in the backflow of ventricular blood to the atrium. This condition is known as mitral regurgitation. Mitral stenosis is a disease condition that causes the narrowing of the mitral valve. This affects the blood flow through the valve and results in severe heart complications. Endocarditis and rheumatic heart disease affect the normal functioning of the mitral valve. The defects of mitral valve could be rectified through surgery of valve replacement.

## What is Aortic Valve?

Human heart possesses two semilunar valves named, aortic valve and pulmonary valve. The aortic valve is present in between the left ventricle and the aorta. The blood flow from the left ventricle to the aorta is controlled by the aortic valve. It consists of three cusps such as left, right and posterior cusps. The main function of the mitral valve is to prevent the backflow of blood from the aorta to the left ventricle. Backflow of blood is known as aortic regurgitation.

Similar to the mitral valve, the opening, and closing of the aortic valve depend on the pressure difference between the left ventricle and the aorta. During systole, the left ventricle contracts, and it causes an increment in pressure built up within the ventricle. The aortic valve opens when the built-up pressure exceeds the pressure within the aorta. This causes the flowing of blood from the left ventricle into the aorta. Once ventricular systole completes, the pressure within the ventricle rapidly drops. Due to high aortic pressure, the aorta forces the aortic valve to close.



Aortic Stenosis (Narrow Valve)

## Aortic Stenosis

Figure 02: Aortic Stenosis

Many abnormalities of the aortic valve occur through different disease conditions. Aortic stenosis is termed as the condition which narrows the aortic valve. This affects the blood flow from the ventricle to the aorta and it completely affects the systemic circulation. Infective endocarditis, rheumatic fever causes the disruption of the aortic valve. Some individuals experience congenital aortic valve defects. During this condition, the aortic valve possesses only two cusps instead of three. This greatly affects the opening and closing of the valve. Surgery and complete valve replacement are options to rectify the defects.

## What are the Similarities Between Mitral Valve and Aortic Valve?

- Both valves are involved in the regulation of blood flow
- Both valves prevent backflow of blood.

## What is the Difference Between Mitral Valve and Aortic Valve?

Mitral Valve vs Aortic Valve	
Mitral valve is an important heart valve that lets blood flow from left atrium to left ventricle.	Aortic valve is a valve in the human heart between the left ventricle and the aorta.

Location	
Mitral valve is located in between the left atrium and the left ventricle.	Aortic valve is located in between the left ventricle and the aorta.
Function	
Mitral valve regulates the blood flow from left atrium to the left ventricle and prevents backflow of blood from the ventricle to the atrium.	Aortic valve controls the flow of blood from left ventricle to the aorta and prevents backflow of blood.
Structure	
Mitral valve possesses two cusps.	Aortic valve possesses three cusps.

## Summary - Mitral Valve vs Aortic Valve

Valves are important structures present in the human heart. Both mitral and aortic valves play a key role in the functioning of the heart. Mitral valve is present in between the left atrium and the left ventricle. It possesses two cusps. The aortic valve possesses three cusps and lies between the left ventricle and the aorta. Both valves prevent the backflow of blood. The opening and closing of valves depending on the pressure difference. Surgery and valve replacement are two options to rectify malfunctioning valves.

### Reference:

- 1.The Editors of Encyclopædia Britannica. "Valve." Encyclopædia Britannica, Encyclopædia Britannica, inc., 6 Nov. 2016. [Available here](#)
- 2."Heart." InnerBody. [Available here](#)

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