

# Heart

## What does this tissue do?

The heart pumps blood through our body making sure that all the organs and tissues get enough oxygen and can work properly. It works throughout our whole life.

## Main parts:

**Left atrium** receives oxygenated blood from the lungs and passes it on into the **left ventricle**, from where it travels to the **aorta** and then the rest of the body. The left ventricle is incredibly strong with the wall being up to 1.5cm thick.

**Right atrium** collects deoxygenated blood from the whole body and passes it into the **right ventricle**, from where it travels to the lungs to bind oxygen again.

The atria and ventricles are connected by **valves**, which make sure that the blood flows in the right direction.

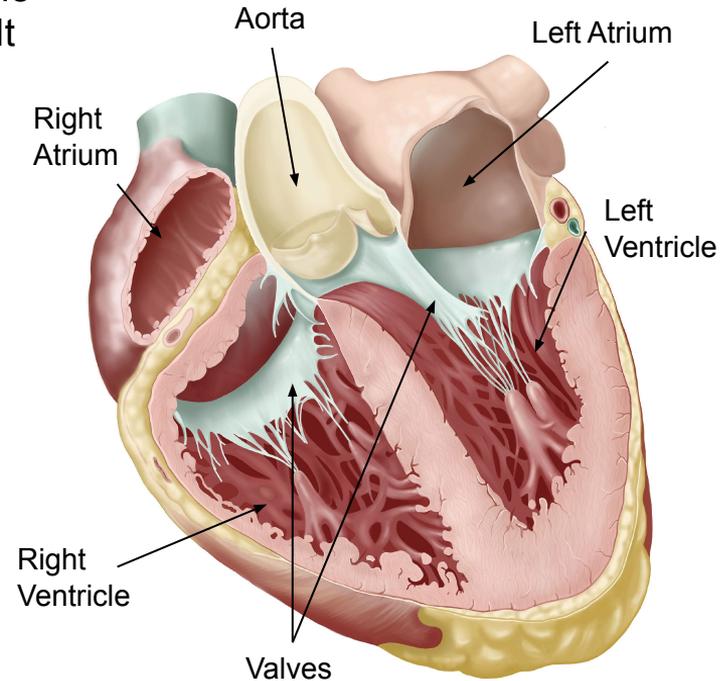


Illustration	Key cell types	Abundance	Function	Special features	Super powers
	Cardiomyocytes	very common	By contracting and relaxing they help the heart to beat	Those cells are unusually large rectangles, up to 120 $\mu\text{m}$ in length	They never stop beating
	Pacemaker Cells	rare	Set the rhythm of the heartbeat	Those cells usually appear together in clusters called nodes	They are hard to find and for every human they might be in slightly different position
	Fibroblasts	common	Create extracellular matrix that holds the cells together	Those cells can easily change according to what is needed from them and are responsible for forming a scar after a heart attack	They can quickly activate and change
	Endocardial cells	common	Line the inside of the heart, creating the barrier for the blood	Those cells cover the whole inside of the heart, including atria, ventricles and valves. They are similar to the cells inside blood vessels	They help guide the development and formation of the heart
	Mesothelial cells	common	Line the outside of the heart, protecting it from the rest of the organs in the chest	Single line of those cells wrap around the whole heart.	Protective shield of the heart