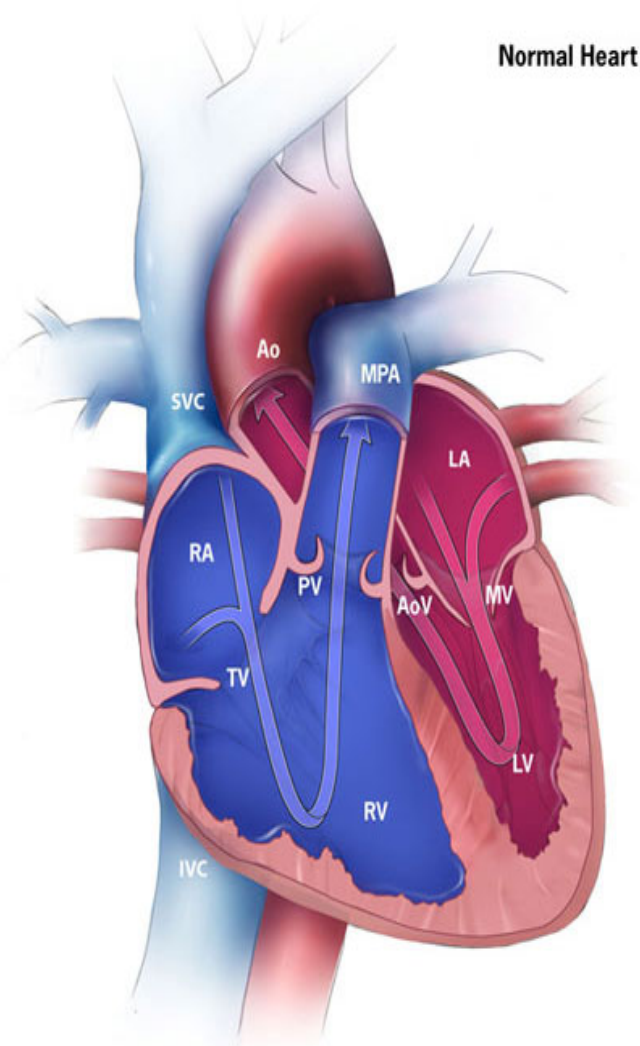


Heart Structure



Normal Heart

RA, Right Atrium
RV, Right Ventricle
LA, Left Atrium
LV, Left Ventricle

SVC, Superior Vena Cava
IVC, Inferior Vena Cava
MPA, Main Pulmonary Artery
Ao, Aorta

TV, Tricuspid Valve
MV, Mitral Valve
PV, Pulmonary Valve
AoV, Aortic Valve

Image courtesy of the Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities

The heart is an organ about the size of a fist. It is made of muscle and pumps blood through the body. Tube-like structures called **blood vessels** carry blood through the body and heart. The heart and blood vessels make up the **cardiovascular system**.

Structure of the Heart

The heart has four chambers: two upper chambers called the **right and left atrium** and two lower chambers called the **right and left ventricle**.

There is a wall between the two **atria** called the **atrial septum**. There is another wall between the two **ventricles**, and it is called the **ventricular septum**.

Arteries and veins are **blood vessels**, and they carry blood into and out of the heart. **Arteries** carry blood away from the heart, while **veins** carry blood to the heart. The **superior vena cava** and **inferior vena cava** are the two main veins that bring blood back to the heart. The **pulmonary artery** and **aorta** are the main arteries that carry blood to the lungs and the rest of the body.

The flow of blood through the blood vessels and chambers of the heart is controlled by **valves**. The four main valves are:

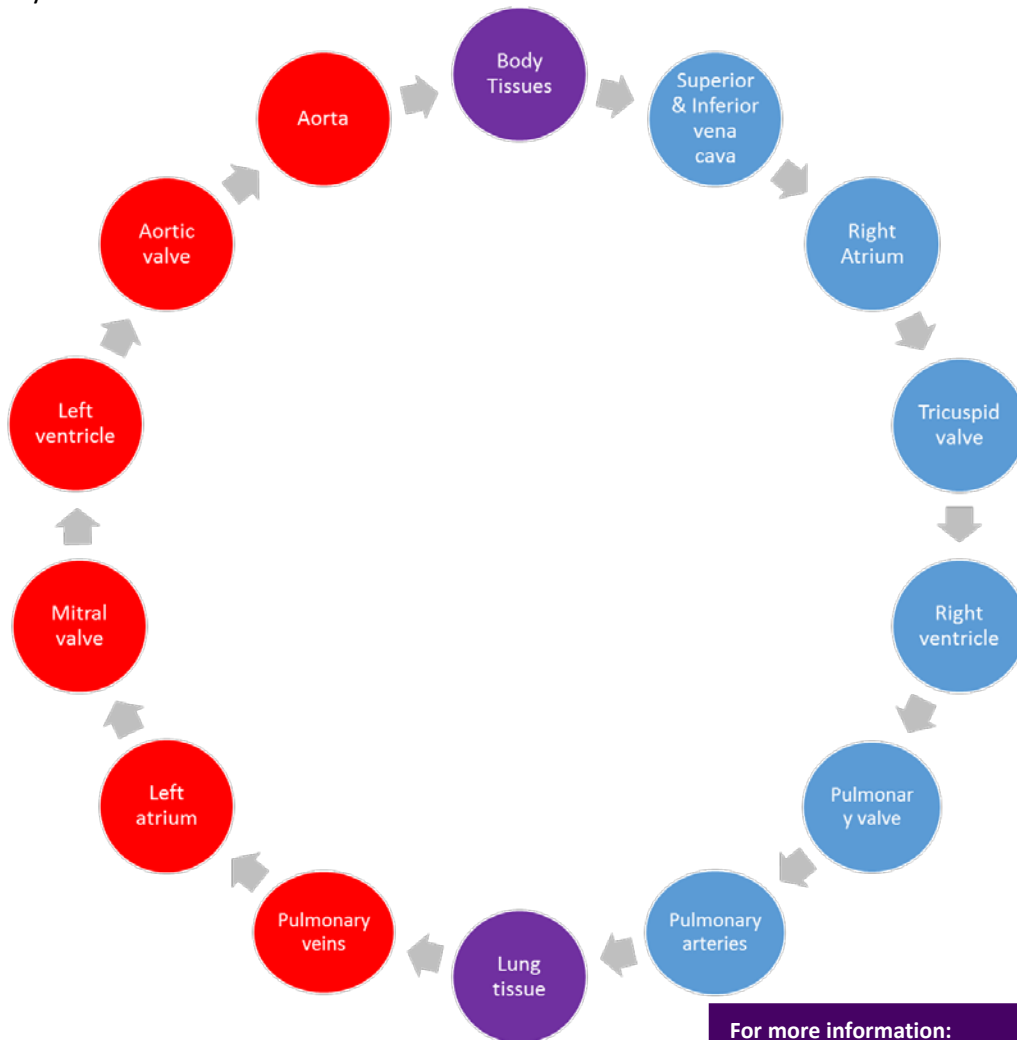
1. **Tricuspid valve:** This separates the right atrium and right ventricle.
2. **Pulmonary valve:** This separates the right ventricle and pulmonary artery.
3. **Mitral valve:** This separates the left atrium and left ventricle.
4. **Aortic valve:** This separates the left ventricle and aorta.

The heart pumps blood to all parts of the body. Blood provides oxygen and nutrients to the body and also removes carbon dioxide and wastes. The blood picks up oxygen from the lungs. When blood has oxygen, it is called **oxygen-rich**. Oxygen gets used by organs, muscles, and tissues as it travels through the body. When blood loses oxygen, it is called **oxygen-poor**.

How the Blood Flows

Blood Flow through the Heart

1. Oxygen-poor blood returns from the body to the heart through the **superior vena cava** and **inferior vena cava** and into the **right atrium**.
2. From the **right atrium**, blood flows through the **tricuspid valve** into the **right ventricle**.
3. The **right ventricle** pumps oxygen-poor blood through the **pulmonary valve** into the main **pulmonary artery**.
4. Blood flows through the right and left pulmonary arteries into the lungs.
5. In the lungs, oxygen is put into the blood and carbon dioxide is taken out of the blood during the process of breathing. The blood is then oxygen-rich.
6. Oxygen-rich blood flows from the lungs back to the heart through four **pulmonary veins**.
7. Blood enters into the **left atrium**.
8. Blood then flows through the **mitral valve** into the **left ventricle**.
9. The **left ventricle** pumps the oxygen-rich blood through the **aortic valve** into the **aorta** and out to the rest of the body.



*The blue circles represent oxygen-poor blood, and the red circles represent oxygen-rich blood.

For more information:

Centers for Disease Control and Prevention

<https://www.cdc.gov/ncbddd/heartdefects/howtheheartworks.html>