



how a normal heart works

The inside of the heart is divided into 4 chambers:

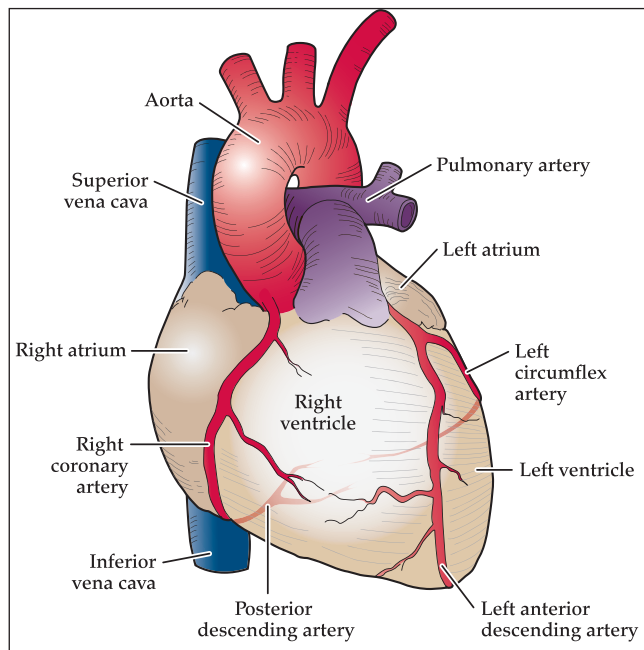
- The upper chambers are called the left and right atria.
- The lower chambers are called the left and right ventricles.

Blood enters the right side of the heart and goes to the lungs to pick up oxygen.

The blood returns to the left side of the heart and is pumped out to the body.

Four valves (2 on each side) open and close with each heartbeat. They keep the blood in the heart moving in the right direction.

The outside of the heart has 2 blood vessels with many branches. They are called coronary arteries. They supply blood rich in oxygen to the heart muscle.



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The heart is a muscle. Its main "job" is to pump blood rich in oxygen and nutrients through blood vessels in the body.

The pumping system of the heart is powered by an electrical system that is naturally programmed to tell the adult heart to beat about 60 to 100 times per minute.



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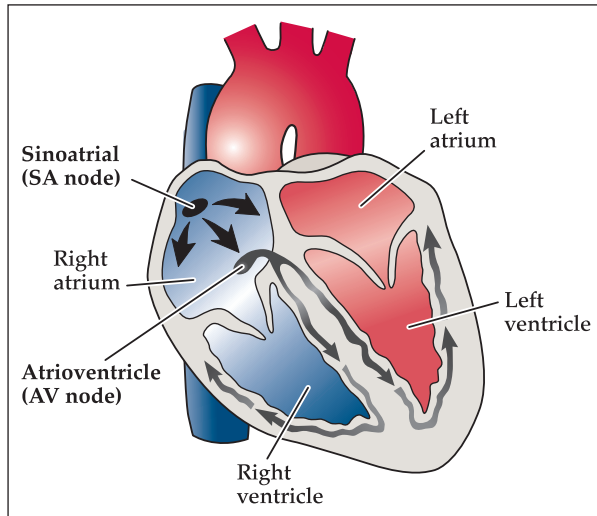
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The right side of the heart receives blood through the veins and pumps it to the lungs to receive new oxygen. The large blood vessel that carries blood from the heart to the lungs is the pulmonary artery.

The left side receives blood with new oxygen from the lungs and sends it out to the body. The large blood vessel that carries blood from the heart to the body is the aorta.



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The Heart's Electrical System

To make a heartbeat, an electrical impulse starts in a spot in the upper right atrium called the **sinoatrial (SA) node**, the body's "natural pacemaker."

The impulse travels through the atrium at a rate of 60 to 100 beats per minute down to a spot between the atria and ventricles, called the **atrioventricular (AV) node**.

The AV node acts as a relay center to delay the impulse before sending it to the ventricles at the bottom of the heart. The impulse then spreads throughout the muscle of the ventricles, stimulating them to contract. It is important for the atria and ventricles to contract in a coordinated way to prevent problems.

The AV node slows the electrical message giving the heart valves time to open and the bottom chambers of the heart to fill with blood.



Electrical Problems

Problems with the electrical messages in the heart are called arrhythmias. They cause either fast or slow heart rhythms.

- Abnormal heart rhythms starting from the top chambers of the heart are called atrial arrhythmias. Examples are atrial flutter, atrial fibrillation and SVT.
- Abnormal heart rhythms starting from the bottom chambers of the heart are called ventricular arrhythmias. Examples are ventricular tachycardia and ventricular fibrillation.

Your adult congenital heart team will talk with you about electrical problems you may be at risk for or have.

