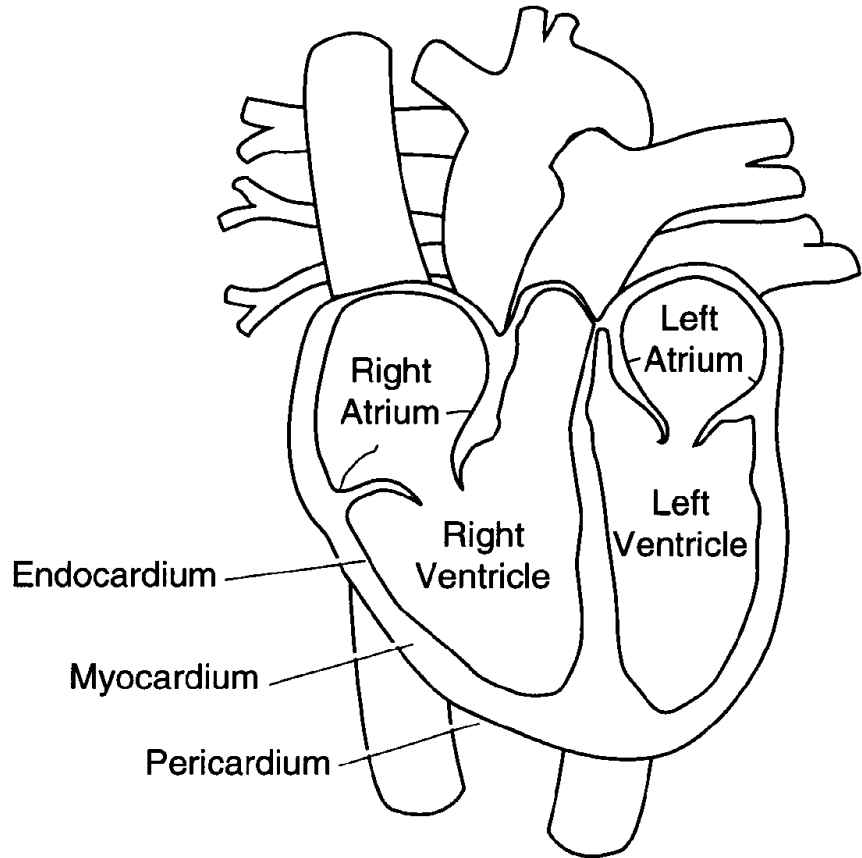


Your Heart And How It Works

Your heart is a muscle. It is slightly larger than your fist and weighs less than a pound. Your heart pumps blood to the lungs and to all parts of your body.

Layers

Your heart muscle has three layers. The thickest layer is called the myocardium. It is surrounded by a fiber-like bag called the pericardium. The inside of the myocardium is lined by a thin layer called the endocardium.



Learn more about your health care.

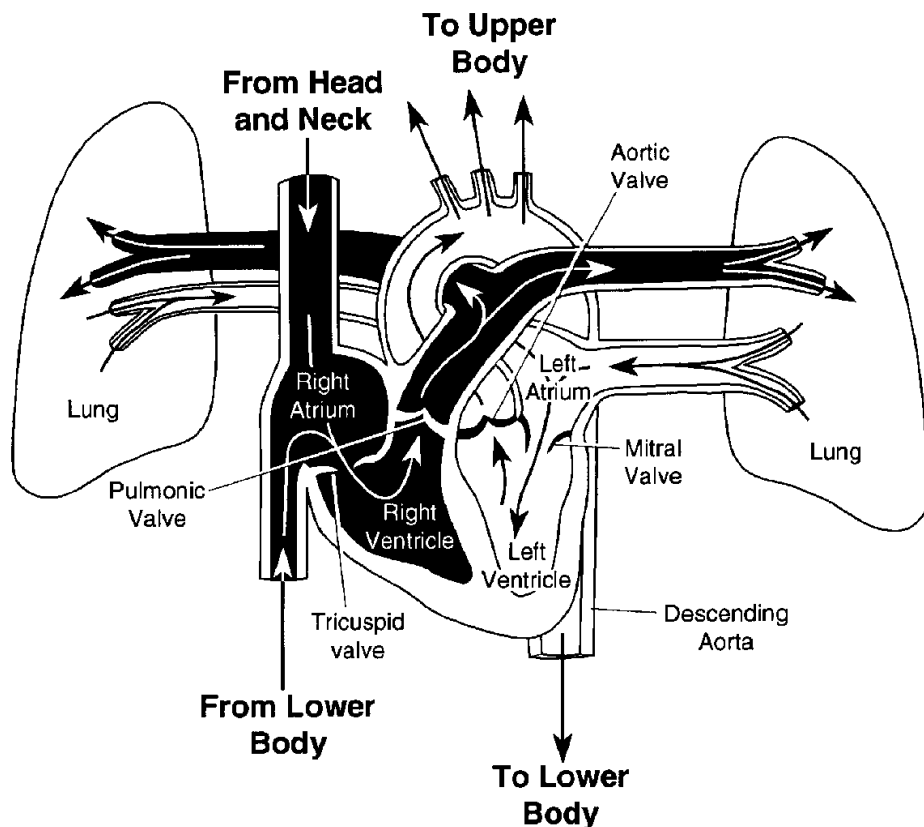
Structure of the heart

The normal heart has four chambers. A wall divides the heart into a right side and a left side. Each side of the heart is divided into two chambers. The upper chamber is called the **atrium** and the lower chamber is called the **ventricle**. These chambers are separated by valves.

The valves allow blood to flow only in one direction. Valves direct the flow of blood through the heart, to the lungs and to the rest of the body.

- **Tricuspid Valve:** Separates your right atrium from your right ventricle.
- **Pulmonic:** Separates your right ventricle from your lungs.
- **Mitral Valve:** Sits between your left atrium your left ventricle.
- **Aortic Valve:** Controls blood flow from your left ventricle out to the rest of your body.

Blood vessels carry blood to and away from the heart. Vessels that carry blood from the heart to the body are called **arteries**. Vessels that carry blood from the body back to the heart are called **veins**.



Function of the heart

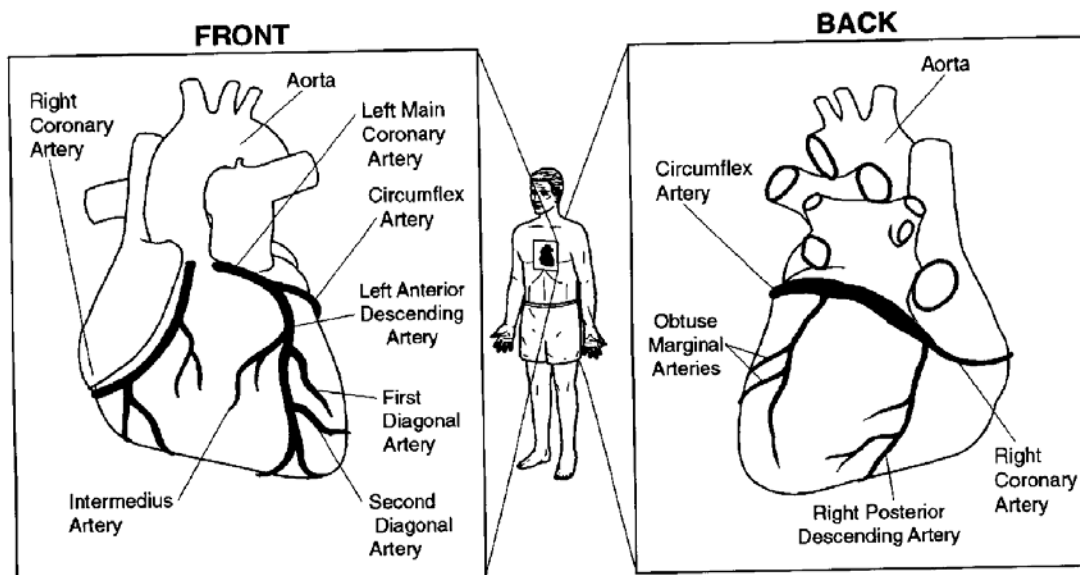
Your heart acts as a double pump. The right side pumps blood to your lungs, the blood picks up oxygen and then returns it to the left side. The left ventricle pumps blood to your body through the large artery, called the aorta. Oxygen is removed from your blood so it can be used by your body. Blood that has the oxygen used, returns to the right side of the heart through your veins. This process occurs with each heart beat.

Each heart beat has two phases. The resting phase is called **diastole**. During diastole, blood from the atria fills the ventricles. Then the ventricles pump blood to your body or lungs. This pumping phase is called **systole**.

The work of the heart changes with your body's needs. For example, when you exercise, your body needs more blood and oxygen. Your heart pumps harder and faster to deliver more blood to the body. When you sleep, less blood and oxygen is needed and your heart slows down.

Blood Supply of the Heart (Coronary Arteries)

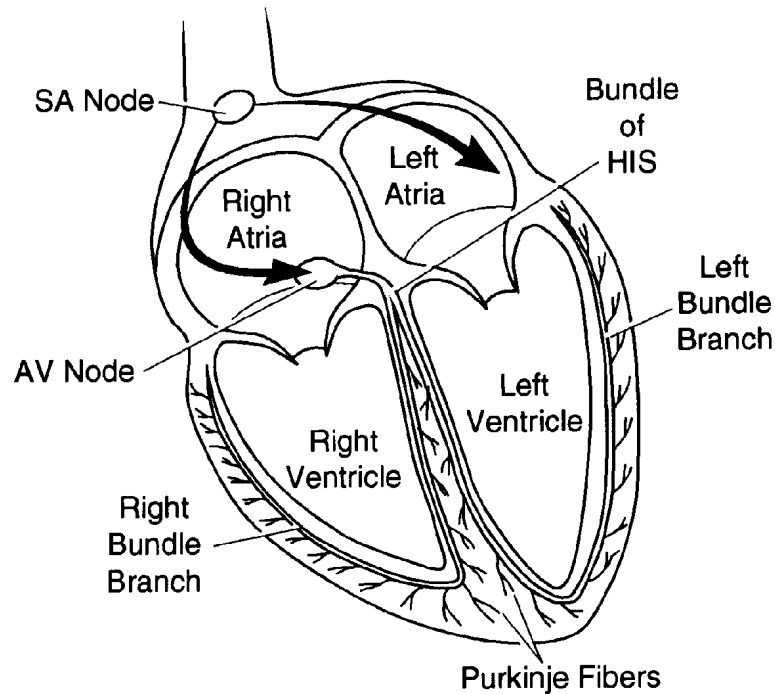
Your heart muscle itself must receive a constant supply of oxygen. Oxygen is carried in the blood through the coronary arteries. Two main coronary arteries, a right and a left, supply the heart muscle with blood. These arteries are located on the surface of the heart. They divide into many smaller branches that go into the heart muscle. All parts of your heart muscle are supplied with oxygen-rich blood through these small arteries.



Normal Conduction

Your heart has a normal conduction or electrical system that stimulates the heart muscle to beat.

Electrical impulses travel in a normal fashion from the upper chambers to the lower chambers over this conduction system. This diagram shows how the impulse travels over the conduction system.



- Normal heart beats begin at the SA-node which acts as the hearts "pacemaker."
- The electrical impulse spreads across the right and left atria.
- The impulse travels through the AV-node to the Bundle of HIS.
- The Bundle of HIS divides into a left and a right bundle branch. The impulse spreads through these bundle branches into the purkinje fibers in the ventricles.

Summary

Your heart's main functions are to receive used blood from your body and pump fresh, oxygen-rich blood to nourish your body. To do this well, your heart valves must be working right. Your heart beat should be regular. The heart muscle itself needs a good blood supply. Your heart must be able to fill with blood and have a strong pumping action for normal function.

- **Talk to your doctor or others on your health care team if you have questions. You may request more written information from the Library for Health Information at (614) 293-3707 or email: health-info@osu.edu.**