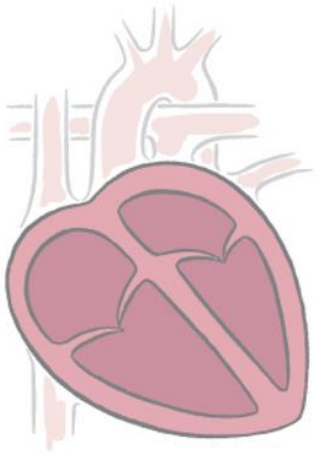
REACH CHF Ed. for ~ What Happens during Normal Heart Function?



normal heart

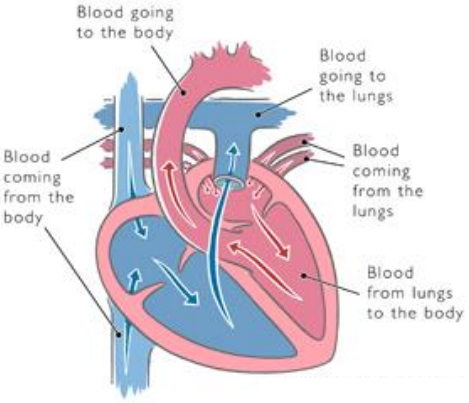
The normal heart is a strong muscle that beats about 120,000 times a day to pump blood through the body. Oxygen and nutrients are carried in the blood and delivered to tissues and organs. Waste products are carried in the blood and delivered to the kidneys and liver. The blood travels through a large network of blood vessels known as the circulatory system. This system includes the arteries, veins, and lungs. The heart responds to the body's needs and meets its requirements by adjusting the rate of pumping.

The heart consists of four chambers that work together:

- **Right and left atria** – small upper chambers
- **Right and left ventricles** – larger, lower chambers.
  The right ventricle pumps blood out of the heart to the lungs, and the left ventricle pumps blood to the rest of the body. The heart's main pumping chamber is the left ventricle.

Blood Flow

During each heartbeat, the right side of the heart receives deoxygenated blood from the body and then sends it to the lungs to pick up oxygen (see the blue arrows in the picture on the right).



The left side of the heart receives the oxygenated blood from the lungs and then sends the blood to the rest of the body to deliver oxygen (see the red arrows).

How the Heart's Electrical System Works

The heart has an electrical system that allows it to beat and pump blood in a smooth and regular way. Special cells in the heart start electrical signals, which then travel along pathways through the heart and cause it to beat.

During a normal heartbeat, an electrical signal is first made in a group of cells called the sinus node (SA node). The signal then spreads like a wave through both of the upper chambers of the heart (the atria) and travels to another group of cells called the atrioventricular node (AV node).

The AV node functions as an electrical filter between the upper and lower chambers of the heart. After a pause, the electrical signal is distributed through the ventricles.

In a healthy heart, the heart beats once and pumps blood for each electrical signal that starts in the SA node. A normal heart rate is between 60 and 100 beats per minute, but varies depending on age and physical activity.