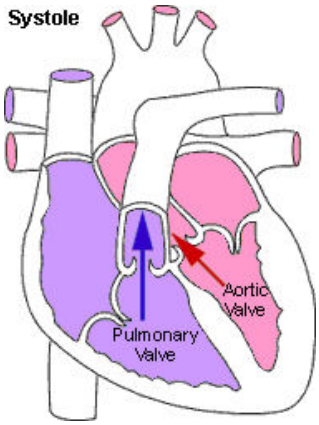
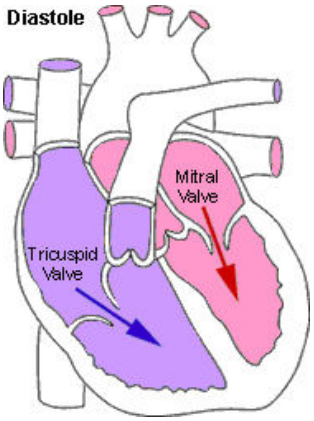
Heartbeats (How the Heart Works)

Your heart is a muscular organ which pumps blood around your body. This is necessary for life because the blood carries the oxygen we breathe and the food we eat to all the cells of the body. The blood also carries the waste products away from the cells.



A heartbeat is a two-part pumping action that takes about a second. Blood collects in the upper chambers of the heart (the right and left *atria*). When the chambers are full, the pacemaker (the SA node) sends out an electrical signal that makes the atria squeeze down (*contract*). This contraction pushes blood through the tricuspid and mitral valves into the resting lower heart chambers (the right and left *ventricles*).

The ventricles are the large muscular chambers of the heart. The right ventricle sends blood to the lungs. Because the left ventricle pumps blood to the rest of the body, it is larger and more muscular. The time between beats when the heart is resting is called *diastole*. This is the bottom number in your blood pressure. When the heart is contracting, it is called *systole*. Systole is the top number in your blood pressure.



Once the bottom muscular chambers of the heart are full of blood, electrical signals from the SA node travel along a pathway of cells to the ventricles, causing them to contract. As the tricuspid and mitral valves shut tight to prevent a back flow of blood, the pulmonary *(pulmonic*) and aortic valves are pushed open. While blood is pushed from the right ventricle into the lungs to pick up oxygen, oxygen-rich blood flows from the left ventricle to the heart and other parts of the body.

After blood moves into the pulmonary artery and the aorta, the ventricles relax, and the pulmonary and aortic valves close. The lower pressure in the ventricles causes the tricuspid and mitral valves to open, and the cycle begins again.

Your heart beats faster and works harder during times of exertion. It works less hard and beats slower when you are resting. Your heart works along with your brain which sends signals to the heart to meet the needs of your body. By reducing your risk factors for heart disease, such as smoking, diet, and excessive weight, you may help your heart stay healthy longer.

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