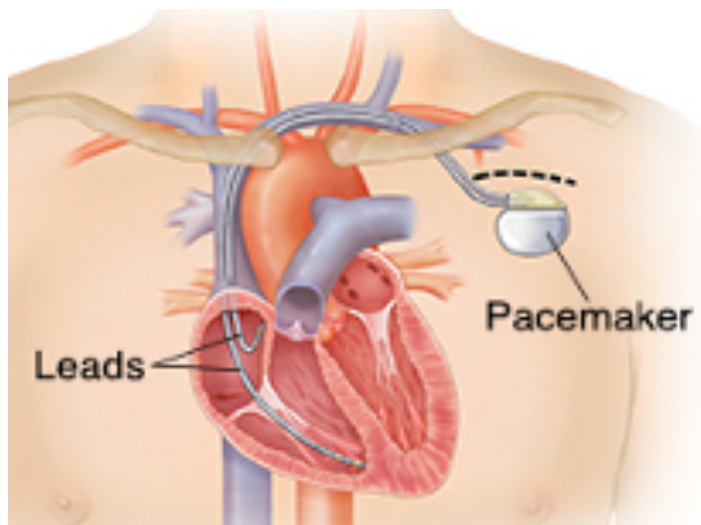


PACEMAKERS

What is a Pacemaker?

Artificial pacemakers are devices that are implanted into the body, usually just below the collarbone, to take over the job of the heart's own electrical system and prevent slow heart rates.

Although they weigh only an ounce and are the size of a large wristwatch face, a pacemaker contains a computer with memory and electrical circuits, a powerful battery (generator), and connects to special wires called "leads." The generator creates electrical impulses that are carried by the leads to the heart muscle, signaling it to pump.



Normally, the heart is signaled to contract, or squeeze, by an electrical impulse that starts in the sinus node at the top of the right atrium. The impulse then travels through the heart to the muscles of the lower chambers of the heart (right and left ventricles) causing the heart to contract. This natural system helps the heart pump in synchronous rhythm.

A problem with any part of this system, either the heart's natural "pacemaker" or the electrical system that sends impulses through the heart muscle, can cause a slow heart rate.

An artificial pacemaker may be needed to reset the heart to the right pace and make sure blood and oxygen are pumped to the brain and other parts of the body.

Are there different types of Pacemakers?

They are actually different kinds of pacemakers depending on what the patient needs.

Single Chamber Pacemakers have one wire that is placed in either the right upper chamber (atrium) or the right lower chamber (ventricle).

Dual Chamber Pacemakers have two wires, one in the atrium and one in the ventricle.

Biventricular Pacemakers have three wires, one in the right atrium, one in the right ventricle and a third around the left side of the heart. These more complicated pacemakers take more time to implant and can be used to resynchronize the conduction between both lower chambers.

When are Pacemakers Used?

Pacemakers are used to treat abnormally slow heart beats. They may be prescribed for a number of conditions, including:

Bradycardia: A condition in which the heart beats too slowly, causing symptoms such as fatigue, dizziness or fainting spells.

Heart Failure: A condition in which the heartbeat is not strong enough to carry a normal amount of blood and oxygen to the brain and other parts of the body. A Biventricular pacemaker can be programmed to increase the force of heart muscle contractions. This is called “biventricular pacing” or “resynchronization” therapy.

Syncope: A condition known as “fainting.” Some patients faint when their heart rate becomes too slow. A pacemaker prevents slow heart rates and can cure syncope in some patients.

Talking to your Doctor

By talking openly to your doctor, you will know what treatments are best for you. Your doctor can provide advice based upon your concerns, value and priorities; a process called shared decision-making.

Treatment

What should I expect when getting a pacemaker?

Getting a pacemaker does not require open-heart surgery. The procedure usually takes about two hours. The pacemaker generator is implanted in a small pocket made under the skin. The leads are usually placed in a vein near the collarbone, and then moved to the heart with the help of an X-ray machine. The leads touch the heart muscle on one end and are connected to the pacemaker generator on the other end.

The pacemaker is programmed to send signals to the heart, and settings can be changed at any time. The battery in the generator lasts about 10 years and must be replaced when it runs out.

Reference: Heart Rhythm Society
<http://www.hrsonline.org>

Please see the Heart rhythm society patient resource webpage UpBeat for more information and educational video <https://upbeat.org/common-treatments/pacemakers>