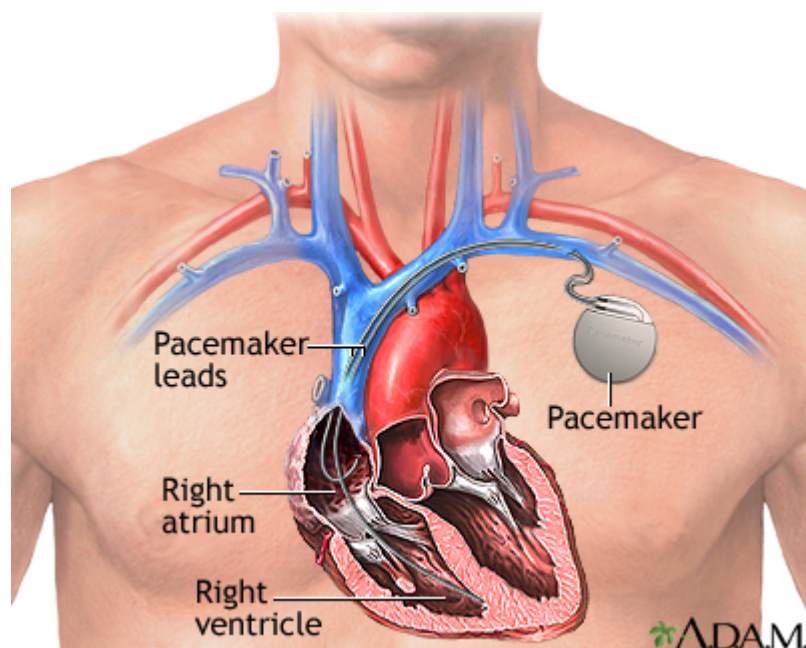


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## Heart pacemaker

A pacemaker is a small, battery-operated device. This device senses when your heart is beating too slowly. It sends a signal to your heart that makes your heart beat at the correct pace.



### Description

Newer pacemakers weigh as little as 1 ounce (28 grams). Most pacemakers have 2 parts:

- The generator contains the battery and the information to control the heartbeat.
- The leads which are wires that connect the heart to the generator and carry the electrical messages to the heart.

A pacemaker is implanted under the skin. This procedure takes about 1 hour in most cases. You will be given a sedative to help you relax. You will be awake during the procedure.

A small incision (cut) is made. Most often, the cut is on the left side (if you are right handed) of the chest below your collarbone. The pacemaker generator is then placed under the skin at this location. The generator may also be placed in the abdomen, but this is less common. A new "leadless" pacemaker is a self-contained unit that is implanted in the right ventricle of the heart.

Using live x-rays to see the area, the doctor (most often a heart specialist called a cardiologist) puts the leads through the cut, into a vein, and then into the heart. The leads are connected to the generator. The skin is closed with stitches. Most people go home within 1 day of the procedure.

There are 2 kinds of pacemakers used only in medical emergencies. They are:

- Transcutaneous pacemakers
- Transvenous pacemakers

They are not permanent pacemakers.

## Why the Procedure is Performed

Pacemakers may be used for people who have heart problems that cause their heart to beat too slowly. A slow heartbeat is called bradycardia. Two common problems that cause a slow heartbeat are sinus node disease and heart block.

When your heart beats too slowly, your body and brain may not get enough oxygen. Symptoms may be

- Lightheadedness
- Tiredness
- Fainting spells
- Shortness of breath

Some pacemakers can be used to stop a heart rate that is too fast (tachycardia) or that is irregular.

Other types of pacemakers can be used in severe heart failure. These are called biventricular pacemakers. They help coordinate the beating of the heart chambers.

Most biventricular pacemakers implanted today can also work as implantable cardioverter defibrillators (ICD). ICD restore a normal heartbeat by delivering a larger shock when a potentially deadly fast heart rhythm occurs.



Watch this video about:  
Heartbeat

## Risks

Possible complications of pacemaker surgery are:

- Abnormal heart rhythms
- Bleeding
- Punctured lung. This is rare.
- Infection
- Puncture of the heart, which can lead to bleeding around the heart. This is rare.

A pacemaker senses if the heartbeat is above a certain rate. When it is above that rate, the pacemaker will stop sending signals to the heart. The pacemaker can also sense when the heartbeat slows down too much. It will automatically start pacing the heart again.

## Before the Procedure

Always tell your health care provider about all the medicines you are taking, even medicines or herbs you bought without a prescription.

The day before your surgery:

- Shower and shampoo well.
- You may be asked to wash your whole body below your neck with a special soap.

On the day of the surgery:

- You may be asked not to drink or eat anything after midnight the night before your procedure. This includes chewing gum and breath mints. Rinse your mouth with water if it feels dry, but be careful not to swallow.
- Take the medicines you have been told to take with a small sip of water.

Your cardiologist will tell you when to arrive at the hospital.

## After the Procedure

You will probably be able to go home after 1 day or even the same day in some cases. You should be able to return to your normal activity level quickly.

Ask your cardiologist how much you can use the arm on the side of your body where the pacemaker was placed. You may be advised not to:

- Lift anything heavier than 10 to 15 pounds (4.5 to 6.75 kilograms)
- Push, pull, and twist your arm for 2 to 3 weeks.
- Raise your arm above your shoulder for several weeks.

When you leave the hospital, you will be given a card to keep in your wallet. This card lists the details of your pacemaker and has contact information for emergencies. You should always carry this wallet card with you. You should try to remember the name of the pacemaker manufacturer if you can in case you lose your card.

## Outlook (Prognosis)

Pacemakers can help keep your heart rhythm and heart rate at a safe level for you. The pacemaker battery lasts about 6 to 15 years. Your provider will check the battery regularly and replace it when necessary.

## Alternative Names

Cardiac pacemaker implantation; Artificial pacemaker; Permanent pacemaker; Internal pacemaker; Cardiac resynchronization therapy; CRT; Biventricular pacemaker; Arrhythmia - pacemaker; Abnormal heart rhythm - pacemaker; Bradycardia - pacemaker; Heart block - pacemaker; Mobitz - pacemaker; Heart failure - pacemaker; HF - pacemaker; CHF- pacemaker

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