

Your Guide To: **Understanding Pacemakers**



What is a pacemaker?

A pacemaker is a small electronic device that keeps track of your heart rate and, if necessary, generates a signal that helps the heart to beat at the correct pace.

Why do I need a pacemaker?

Your heart rate is controlled by a natural electrical system that tells your heart when to beat. If that electrical system is not functioning properly, your heart rate can be too slow, too fast or simply uneven. This may be a consistent problem or it may occur occasionally. If your heart is beating at an improper or uneven rate, you may feel symptoms such as dizziness, lightheadedness, shortness of breath, fatigue, confusion or fainting spells. It is likely that these symptoms are more noticeable when you are physically active. Sometimes an irregular heart beat is controlled with medication. In other situations, a pacemaker is implanted.

What type of pacemaker will be used?

Your doctor will choose a pacemaker based upon the type of problem your heart is experiencing. Pacemakers are named according to the number of electrodes that are implanted in the heart. A single-chamber pacemaker uses an electrode that is implanted in either the right atrium or the right ventricle of the heart, depending upon the source of the problem. A dual-chamber pacemaker has two electrodes that coordinate the signal between the right atrium and the right ventricle. A third device is the bi-ventricular pacemaker with 3 electrodes that are implanted in the right atrium, right ventricle, and left ventricle. This device may improve symptoms and heart function in patients with heart failure by coordinating the contractions of the right and left ventricles.

Pacemakers are generally used in patients with heartbeats (rates) that are too slow. Some patients suffer with rapid, dangerous heartbeats and these patients are treated with an implantable cardioverter defibrillator (ICD). The defibrillator itself is larger than a pacemaker but can efficiently treat both slow heart rate and dangerously fast heart rate.

How should I prepare for the procedure?

Your physician will explain the procedure to you and have you sign consent forms during a visit prior to the procedure. Be certain that your doctor is aware of any physical conditions that you have and medications that you are taking, particularly those diagnosed and prescribed by other health care providers outside of CIS. You will be instructed about fasting before the procedure. You may also be asked to skip a dose of certain medications prior to the procedure. You may need some pre-operative tests. Arrange to have someone available to drive you home after the procedure, since you will be receiving a sedative. (Please note that sometimes patients are allowed to return home on the same day as the pacemaker implant.)

What will take place the day of the procedure?

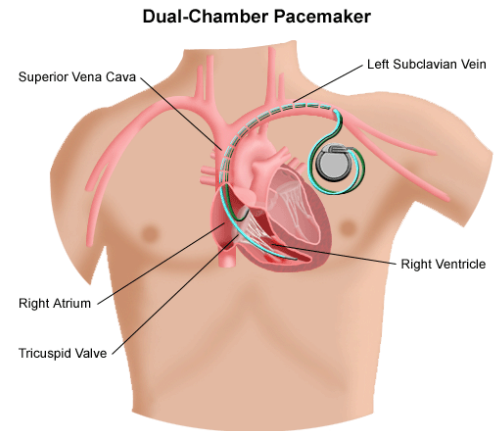
Pacemaker procedures are normally done in the cardiac catheterization laboratory of the hospital. It is best to leave your jewelry at home since you will be asked to remove it before the procedure. You will be asked to change into a hospital gown shortly after you arrive and to empty your bladder. Electrode pads will be placed on your chest and back so that your heart can be monitored by electrocardiogram (ECG or EKG) during the procedure. An intravenous line (IV) will be started in your arm or hand. This line will be used to administer medication and fluids, if necessary. You will be given a sedative through the IV line to relax you, but you will remain awake.

The pacemaker site will be cleansed and numbed by the injection of a local anesthetic. The site is generally just below your collarbone on your non-dominant side. For example, if you are right handed, the site chosen will probably be your upper left chest; if you are left handed, the physician will probably choose your upper right chest.

A small incision will be made and a plastic tube called a sheath will be put into place. The lead wire(s) of the pacemaker are introduced through this sheath and are advanced into the heart. Fluoroscopy (a special x-ray shown on a TV screen) aids in guiding the placement. The lead wire(s) will be tested to verify that everything is working properly. After this test, another local anesthetic will be injected, an incision will be made, and the pacemaker will be inserted. The incision is then closed.

How long does recovery take?

Just after the procedure, you will be brought to the recovery room for observation. Your vital signs will be monitored. As soon as you are fully awake, you will be able to eat and drink. The insertion site will be sore, but you will be given medication as needed. Once all of your vital signs are stable and you are alert, you will either be discharged or, if your physician chooses to keep you overnight, you will be sent to your hospital room. Physical limitations will vary depending upon your overall health, the progress you have made and your daily activities. Most patients are able to return to their regular activity within a few days, but lifting and pulling should be avoided for several weeks. Your personal limitations will be explained to you concerning the type of device that has been chosen for you.



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How do I care for the incision site?

- Keep the incision dry for 7 days. This means you will need to take sponge baths and not get the area wet.
- In 2 days remove the bulky dressing that was placed in the hospital.
- Leave the white paper strips in place on the incision. The white paper strips will fall off on their own.
- Call CIS if you develop:
 - Drainage, redness or swelling at the incision site
 - Marked tenderness or bruising over the pacemaker site.
 - Temperature over 100 degrees F

Report any of the following to your doctor:

- fever and/or chills,
- increased pain, swelling, bleeding or drainage from the insertion site,
- palpitations,
- unusual chest pain/pressure,
- nausea and/or vomiting,
- profuse sweating, dizziness and/or fainting.

Will I have to take any precautions?

You will be given an ID card that states important information about your device. Carry this ID card with you at all times. You should also wear a medical ID bracelet stating that you have a pacemaker or ICD.

There are some types of equipment that can temporarily “confuse” your pacemaker, although there are fewer problems with modern pacemakers than there were in the past. Be sure to show your ID card to inspectors before going through airport security. Use your cell phone on the ear opposite your pacemaker, and if you repair large motors, such as cars and boats, turn them off before beginning to work. High-voltage or radar machinery should also be avoided (radio or television transmitters, electric arc welders, high-voltage lines, radar installations, smelting furnaces, etc.)

Inform your dentist that you have a pacemaker, as well as any health care provider that you visit. If your pacemaker has been recently implanted, it may be necessary to take an antibiotic prior to any medically invasive procedure to prevent infection that could affect the pacemaker. Always call your doctor if you feel ill or tired after a certain activity, or if you have questions about the safety of any device you may be exposing your pacemaker to. Try to avoid receiving a direct blow to the pacemaker area, as this could affect its performance. If you do receive a blow to the area, consult your physician. You will be given instructions about regular “checks” to be performed on your pacemaker to be certain that it is functioning properly.