

After Your Leadless Pacemaker Is Implanted

What to expect and self-care

This handout explains a leadless pacemaker and what to expect when you have one implanted. It includes self-care instructions to follow at home after your procedure.

What is a leadless pacemaker?

A *pacemaker* is a small device that is used to help control abnormal heart rhythms. It uses low-energy electrical pulses to help the heart beat normally. Regular pacemakers are implanted in the chest. They connect to the heart with *leads* (wires) that pass through a vein.

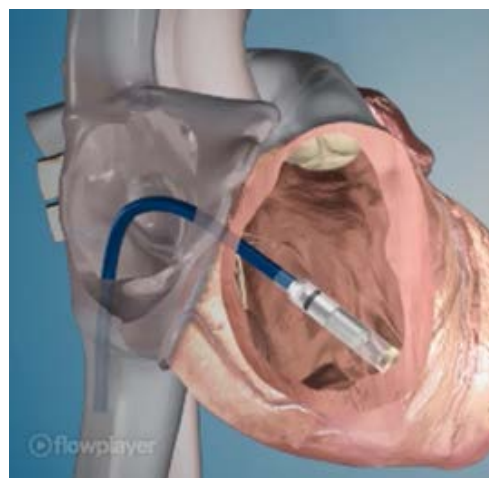
A *leadless* (wireless) pacemaker is very tiny. It is only about 1 inch long and about $\frac{1}{4}$ inch wide. The entire leadless pacemaker is implanted directly into the right *ventricle* (main chamber) of the heart. Nothing is placed in the chest.

The pacemaker contains a very small computer that is powered by a tiny *lithium* battery (see picture on page 2). All electronic parts are sealed inside a titanium metal case. *Tines* (prongs) on the outer case help hold the pacemaker in place.

How is it implanted?

First, your surgeon will insert a *catheter* (thin, flexible tube) into a leg vein near your groin area. The catheter will be threaded up the vein to your heart.

The tiny leadless pacemaker will be moved through the catheter and placed in the correct location in your heart. After the pacemaker is implanted, the catheter will be removed.



The leadless pacemaker is implanted into the right ventricle of your heart.



A tiny lithium battery is inside your leadless pacemaker.

Same-Day Discharge

If you are going home the same day as your procedure:

- A provider will check your insertion site before you leave the hospital. They will also talk with you about the results of your procedure. Please ask questions if you do not understand something that your provider tells you.
- **A responsible adult must take you home.** You may not take a bus, shuttle, taxi, or any other form of transportation by yourself.

For the next 24 hours:

- Rest quietly at home.
- Do **NOT** drive.

If You Had Anesthesia or Sedation

Anesthesia and sedation can make you drowsy and make it hard for you to think clearly. Because of this:

For the next 24 hours:

- Do **NOT** drive.
- Make sure you have a responsible adult who can help you if needed during this time.
- Do **NOT** be responsible for the care of anyone else, such as children, pets, or an adult who needs care.
- Do **NOT** drink alcohol or take drugs other than the ones your doctors prescribed or suggested.
- Do **NOT** make important decisions or sign legal papers.

Next-Day Discharge

If you spend the night in the hospital after your procedure, your doctor will come by and check on your insertion site before you leave the hospital. They will also talk with you about the results of your procedure. If you have any questions, be sure to ask them

Activity

- Starting 24 hours after you are discharged, you may:
 - Return to light activity.
 - Drive.

- Shower, but leave the dressing on while showering. After you shower for the first time, you may take the dressing off. You do not need to apply more dressing.
- If you have travel plans in the first 2 weeks after your procedure, please check with your doctor for instructions.
- **For 48 hours after** your procedure:
 - Do **not** do anything that puts stress on your puncture site. This includes housework, gardening, and many self-care tasks. Ask for help with any tasks that need to be done during this time.
 - You may go up and down stairs, but limit how much you do this.
- For 7 days after your procedure:
 - Do **NOT** lift anything that weighs more than 10 pounds (4.54 kilograms). A gallon of milk weighs almost 9 pounds.
 - Do **NOT** hold your breath, bear down, or strain when having a bowel movement.
 - Do **NOT** allow the puncture site to be covered by water. This means do not take a bath, sit in a hot tub, or go swimming.
 - Avoid sexual activity.
 - Keep the catheter sites as clean and dry as you can.
 - Do **NOT** go hiking, bicycling, jogging, or running.
- **Slowly** increase your activity level over the next week. Start at about half the level of activity you usually did before getting your leadless pacemaker. Slowly build up from there.

Pain Control

- You will most likely be sore for 1 to 2 days at the puncture site where the catheter was inserted. You may take acetaminophen (Tylenol) to ease pain. Follow the instructions on the package.
- For 5 days after your procedure, do **not** take anti-inflammatory products such as ibuprofen (Advil, Motrin) or naproxen (Aleve, Naprosyn). They may cause increased bleeding.
- If your pain at the puncture site is not eased by acetaminophen, call 206.598.6190 and ask to page the Cardiology E Fellow on call.

Site Care

- You may remove the dressing or bandage 24 hours after your procedure.
- Keep the area clean and dry.
- You may have a bruise where the catheter was inserted. It may spread down your leg. It may take 2 to 6 weeks for the bruise to go away.

When to Call

Problems after this procedure are rare, but tell us **right away** if you have any of these symptoms so that we can follow-up as needed:

- If you have swelling or bleeding at the puncture site:
 - Use your fingers or a fist to put pressure on the area.
 - If the swelling or bleeding does not stop after 10 minutes, keep pressure on the site and call 206.598.6190. Ask to page the Cardiology E Fellow on call.
- For the next 3 days, check for these signs of infection:
 - Redness at the insertion site
 - Fever higher than 100.4°F (38°C)
 - Drainage from the site

If you have sudden, heavy bleeding or a lot of swelling, put pressure on the site and call 911.

Special Long-Term Precautions

Activities

Follow your doctor's instructions about driving and sexual activity.

When You Travel

- Always carry your pacemaker identification (ID) card.
- If you must pass through a metal detector, hand your pacemaker ID card to security staff. Tell them that you might set off the alarm. You may also want to carry a card with this information in the language(s) of the country (or countries) you will visit or travel through.

- Some studies show that internal pacemakers are not harmed by metal detectors. But, most makers still advise being cautious.
 - You may walk through the metal-detection arch, but do **not** stay inside the arch or lean on the sides of the structure.
- If security staff use a metal-detection hand wand, ask them to avoid waving or holding it over your pacemaker.
 - If you feel dizzy or have fast heartbeats (*palpitations*) when you are near a metal detector, move farther away. Your pacemaker should begin to work properly right away.
 - Body scanners that are used in some airports and other places will not affect your pacemaker.
- Always carry a full list of your current medicines. Include their doses, how often you take them each day, and why you are taking them.
- Always carry your medicines with you in your carry-on bags. Do **not** pack them in your checked luggage.
- Carry phone numbers for your healthcare providers in case of emergency

Magnetic Fields

Magnets or magnetic fields are found in or are created by many items we are around every day. Some of these are:

- Small appliances with motors
- Stereo speakers
- Gas engines
- Cell phones
- Desktop and laptop computers
- Welding machines
- CB radios
- Magnetic resonance imaging (MRI) machines
- Anti-theft devices in stores
- Metal detectors

It is safe to be near microwaves, blenders, and most of the other items on the list. But some create strong magnetic fields that may interfere with your pacemaker.

Items That Create Magnetic Fields

Here are basic advice and precautions for some items that create magnetic fields. **For more details, contact the maker of your pacemaker.**

NOTE: These suggestions assume that the item is properly grounded, in proper working order, and being used for its intended purpose.

Cell Phones

Most cell phones are safe if you:

- Carry it at least 6 inches (15 centimeters) away from your heart. Most cell phones keep sending a signal even when they are not in use.
- Hold it to your ear on the **opposite side** of your pacemaker.

Radio Transmitters

Radio transmitters such as CB radios, walkie-talkies, and remote-controlled toys may interfere with your pacemaker. Based on how many watts a device generates, here are guidelines for how far to keep from it:

Watts Generated	How Far to Keep From It
3 watts	12 inches (30 centimeters)
25 to 199 watts	3 feet (1 meter)
200 watts or more	10 feet (3 meters)

If you do not know the power output of your device, call the maker of the device.

Engines and Small Motors

- Most small appliances or hand tools with motors are safe to use when the item is grounded, in good condition, and held the right distance away from your body for safe and proper operation.
- Use caution when working on car engines. Keep your upper body at least 24 inches (60 centimeters) away from a running car engine.

Electric Toothbrushes

- Keep the toothbrush handle **at least** 1 inch (2.5 centimeters) away from your heart.
- Keep **at least** 6 inches (15 centimeters) between the charger and your heart.

Medical Procedures or Equipment

Be sure to tell the person who is doing medical procedures or surgeries that you have a pacemaker. **Never assume everyone involved in your healthcare knows you have pacemaker.** It is always safer to be sure and to remind those involved in your care that you have a pacemaker.

Also, the leadless pacemaker does **NOT** respond to a magnet like a regular pacemaker. Please tell your healthcare team if they are unaware of this.

These procedures or devices may interfere with your pacemaker:

- *Electrocautery* (a procedure that uses an electric current to remove unwanted tissue, seal off blood vessels, or create an incision)
- Placement of a *central venous catheter* (a small tube that is placed in a large vein to deliver medicine)
- *Lithotripsy* (a procedure that uses shock waves to break up stones in the kidney, bladder, or ureter)
- *Ultrasound* (an imaging method that uses sound waves)
- *Electrolysis* (hair removal)
- *External cardioversion or defibrillation* (a procedure to bring an abnormal heart rhythm back to normal)
- Magnetic resonance imaging (MRI) machines

Note: It is OK for you to have an MRI while you have a leadless pacemaker. But, you must have your:

- Pacemaker checked before and after the MRI scan
- ECG monitored by a trained professional during the MRI scan
- *Radiation* therapy (usually used in cancer treatment)
- TENS (transcutaneous electrical nerve stimulation) for pain control
- Body-fat measuring scales

Other Precautions

Items to Avoid

Many makers of pacemakers advise that you also **avoid being around or using these items**:

- Arc welders
- Gas-powered chainsaws
- Induction furnaces such as kilns
- Magnetic (therapy) mattress pads or pillows
- Electric steel furnaces
- Dielectric heaters (heaters that use radiowaves or microwaves)
- Electrical transmission towers (if you are **inside** a restricted area)
- Jackhammers
- Stun guns

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

- **For general questions**
weekdays 8 a.m. to 5 p.m.:
 - Montlake patients: call 206.598.4300
 - Northwest patients: call 206.363.1004
- **For questions related to your procedure** weekdays 6:30 a.m. to 8 p.m.:
 - Montlake patients: call 206.598.7146
 - Northwest patients: call 206.668.1084Ask to talk with a nurse.
- **For urgent concerns related to your procedure**, or if it is after hours or on a weekend or holiday: call 206.598.6190 and ask to page the Cardiology E Fellow on call.

Dental Work

- Tell your dentist that you have a leadless pacemaker. Most dental devices will not interfere with your pacemaker.
- If you did not need antibiotics for dental procedures before your surgery, you will not need antibiotics now that you have a pacemaker. If you have questions, please ask your doctor.

Your Leadless Pacemaker

This handout covers **only** basic precautions you may need to take with your pacemaker. Each device may have other special precautions you will need to follow.

If you have any questions about what might cause problems for your leadless pacemaker, please contact the maker for more specific information.

At the current time, only 1 company makes the leadless pacemaker. Here is their contact information:

Medtronic
www.medtronic.com
800.551.5544 or 800.328.2518