



PACIFIC COAST CARDIOLOGY & RESEARCH

PATIENT PRE-TEST INSTRUCTIONS:

Pacemaker Implantation

1. Nothing to eat or drink at least 8 hours prior to the procedure.
2. You will not be able to drive for 24 hours after the procedure
3. Be sure to make arrangement in advance for someone to pick you up after the procedure.

***YOU SHOULD NOT STOP ANY MEDICATIONS WITHOUT CONTACTING YOUR PRESCRIBING DOCTOR. USE THE FOLLOWING LIST IN ORDER TO SPEAK WITH YOUR DOCTOR:

Commonly Used Beta Blockers: Blocadren (timolol), Coreg (carvedilol), Inderal (propranolol), Lopressor (metoprolol), Tenormin (atenolol), Toprol –XL (metoprolol), Trandate (labetalol), Visken (pindolol), Bystolic.

Caffeinated Food and Beverages: Coffee including “decaffeinated”, teas, cocoa and any food containing cocoa (chocolate), and soft drinks.

Pacemaker Implantation

What is a pacemaker?

A pacemaker is a device that sends small electrical impulses to the heart muscle to maintain a suitable heart rate or to stimulate the lower chambers of the heart (ventricles). A pacemaker may also be used to treat fainting spells (syncope), congestive heart failure, and hypertrophic cardiomyopathy.

Types of pacemakers

The types of pacemakers are listed below. Your doctor will decide what type of pacemaker you need based on your heart condition. Your doctor also determines the minimum rate (lowest heart rate) to set your pacemaker. When your heart rate drops below the set rate, the pacemaker generates (fires) an impulse that passes through the lead to the heart muscle. This causes the heart muscle to contract, creating a heartbeat.

Electrical System of the Heart

The atria and ventricles work together, alternately contracting and relaxing to pump blood through the heart. The electrical system of the heart is the power source that makes this possible.

Normally, the electrical impulse begins at the sinoatrial (SA) node, located in the right atrium. The electrical activity spreads through the walls of the atria, causing them to contract.

Next, the electrical impulse travels through the AV node, located between the atria and ventricles. The AV node acts like a gate that slows the electrical signal before it enters the ventricles. This delay gives the atria time to contract before the ventricles do.

From the AV node, the electrical impulse travels through the His-Purkinje network, a pathway of specialized electricity-conducting fibers. Then the impulse travels into the muscular walls of the ventricles, causing them to contract. This sequence occurs with every heartbeat (usually 60-100 times per minute).

Why do I need a pacemaker?

If the electrical pathway described above is interrupted for any reason, changes in the heart rate and rhythm occur that make a pacemaker necessary.

Pacemakers are used to treat brady-arrhythmia, slow heart rhythms that may occur as a result of disease in the heart's conduction system (such as the SA node, AV node or His-Purkinje network). Pacemakers are also used to treat syncope (unexplained fainting spells), heart failure and hypertrophic cardiomyopathy.

Is the procedure safe?

A pacemaker implant is generally a very safe procedure. However, as with any invasive procedure, there are risks. Special precautions are taken to decrease your risks. Please discuss your specific concerns about the risks and benefits of the procedure with your doctor.

Before the Procedure

Should I take my medications?

If you take Coumadin, the results of your INR test (a blood test to evaluate the blood clotting) must be within a suitable range before the implant procedure can be performed. Usually you will be instructed to stop taking aspirin or Coumadin (warfarin) a few days before the procedure.

Your doctor may also ask you to stop taking other medications, such as those that control your heart rate.

Do not discontinue any of your medications without first talking to your health care provider. Ask your doctor which medications you should stop taking and when to stop taking them.

If you have diabetes, ask the nurse how to adjust your diabetes medications or insulin.

Can I eat?

Eat a normal meal the evening before your procedure. However, do not eat, drink, or chew anything after 12 midnight before your procedure. This includes gum, mints, water, etc. If you must take medications, only take them with small sips of water. When brushing your teeth, do not swallow any water.

What should I wear?

Remove all makeup and nail polish.

Wear comfortable clothes when you come to the hospital. You will change into a hospital gown for the procedure.

Please leave all jewelry (including wedding rings), watches and valuables at home. The clothing you are wearing that morning will be returned to the person who accompanies you.

What should I bring?

You will not need a robe or toiletries when you first arrive. Your family member can keep these items to give you after the procedure.

Bring a one-day supply of your prescription medications. Do not take these medications without first talking with the doctor or nurse.

During the Procedure

Where is the procedure performed?

In most cases, the pacemaker implant procedure takes place in a special room in the Pacemaker Lab.

What happens before the procedure?

Before the procedure begins, a nurse will help you get ready. You will lie on a bed and the nurse will start an IV (intravenous line) in a vein in your arm or hand. The IV is used to deliver medications and fluids during the procedure.

To prevent infection and to keep the pacemaker insertion site sterile:

An antibiotic will be given through the IV at the beginning of the procedure.

The left or right side of your chest will be shaved.

A special soap will be used to cleanse the area.

Sterile drapes are used to cover you from your neck to your feet.

A soft strap will be placed across your waist and arms to prevent your hands from coming in contact with the sterile area.

Will I be awake?

A medication will be given through your IV to relax you and make you feel drowsy, but you will not be asleep during the procedure.

Will I be monitored?

The nurse will connect you to several monitors that allow the health care team to check your heart rhythm and blood pressure during the procedure. The nurse continually monitors you during the procedure.

Monitors During the Procedure:

Defibrillator/pacemaker/cardioverter: Attached to one sticky patch placed on the center of your back and one on your chest. This allows the doctor and nurse to pace your heart rate if it is too slow, or deliver energy to your heart if the rate is too fast.

Electrocardiogram or EKG: Attached to several sticky electrode patches placed on your chest, as well as inside your heart. Provides a picture on the monitors of the electrical impulses traveling through the heart.

Blood pressure monitor: Connected to a blood pressure cuff on your arm. Checks your blood pressure throughout the procedure.

Pulse Oximeter monitor: Attached to a small clip placed on your finger. Checks the oxygen level of your blood.

Fluoroscopy: A large X-ray machine will be positioned above you to help the doctors see the leads on an X-ray screen during the procedure.

Where is the pacemaker implanted?

A pacemaker can be implanted using the endocardial approach.

The endocardial (transvenous) approach is the most common method. A local anesthetic (pain-relieving medication) is given to numb the area. An incision is made in the chest where the leads and pacemaker are inserted. The lead(s) is inserted through the incision and into a vein, then guided to the heart with the aid of the fluoroscopy machine. The lead tip attaches to the heart muscle, while the other end of the lead (attached to the pulse generator) is placed in a pocket created under the skin in the upper chest.

The doctor will determine which pacemaker implant method is best for you.

How are the leads tested?

After the leads are in place, they are tested to make sure they function properly and can increase your heart rate. This lead function test is called “pacing.” Small amounts of energy are delivered through the leads into the heart muscle. This energy causes the heart to contract.

Once the leads have been tested, the doctor will connect them to the pacemaker. The rate and settings of your pacemaker are determined by your doctor. After the pacemaker implant procedure, the doctor uses an external device (programmer) to program final pacemaker settings.

What will I feel?

You will feel an initial burning or pinching sensation when the doctor injects the local numbing medication. Soon the area will become numb. You may feel a pulling sensation as the doctor makes a pocket in the tissue under your skin for the pacemaker.

When the leads are being tested, you may feel your heart rate increase or your heart beat faster. Please tell your doctor what symptoms you are feeling. You should not feel pain. If you do, tell your nurse right away.

How long does the procedure last?

The pacemaker implant procedure may last from 2 to 5 hours.

After the Procedure

Will I have to stay in the hospital?

Yes. You will be admitted to the hospital and stay overnight after the procedure. Usually you will be able to go home the day after your pacemaker was implanted.

What should I expect?

In your hospital room, a special monitor, called a telemetry monitor, will continually monitor your heart rhythm. The telemetry monitor consists of a small box connected by wires to your chest with sticky electrode patches. The box displays your heart rhythm on several monitors in the nursing unit. The nurses will be able to observe your heart rate and rhythm.

What tests will be done after the procedure?

A chest X-ray will be done after the pacemaker implant to check your lungs as well as the position of the pacemaker and lead(s).

How will I feel?

You may feel discomfort at the pacemaker implant site during the first 48 hours after the procedure. The doctor will tell you what medications you can take for pain relief. Please tell your doctor or nurse if your symptoms are prolonged or severe.

What instructions will I receive before I leave the hospital?

Your doctor will discuss the results of the procedure and answer any questions you have.

You will receive specific instructions about how to care for yourself after the procedure including medication guidelines, wound care, activity guidelines, pacemaker care and maintenance, and a follow-up schedule. Also refer to “Discharge Instructions after a Pacemaker Implant.”

You will also receive a temporary ID card that indicates what type of pacemaker and leads you have, the date of implant and the doctor who performed the implant. Carry this card with you at all times in case medical care is needed. Within three months you will receive a permanent card from the pacemaker company.

Ask your doctor if you can continue taking your previous medications.

Can I drive myself home?

No. For your safety, a responsible adult must drive you home.