



Information for You from Your Health Care Team

Pacemaker

What is a Pacemaker?

The pacemaker generator is a tiny battery powered machine. Using a long wire or lead, it sends energy signals to the heart. A pacemaker is used when the heart beat is not fast enough to supply your child's body with the blood and oxygen it needs.

What the Pacemaker and leads look like:

The pacemaker is a very thin object with a metal-like cover. The pacemaker weighs about 1-2 ounces. The leads are bendable, plastic coated wires. These leads carry signals from the pacemaker to the heart's upper right chamber (atrium) or lower right chamber (ventricle) or both. The doctor will decide which part of the heart needs to be paced after checking your child's heart rhythm problem.

How and where the leads are placed in the heart:

There are two ways to place a lead: endocardial or epicardial.

1. Endocardial: The lead is threaded into the heart through a vein
2. Epicardial: The lead is directly attached to the outer portion of the heart muscle.

Endocardial placement:

When this method is used to implant a pacemaker, a small incision is made in the side of the chest near the shoulder. The leads are threaded through a vein into one or both of their right sided heart chambers. The leads are attached to the pacemaker and the system is programmed for the child's needs. The generator is then placed in the pocket that was made under your child's skin and the incision is closed. This method is mostly used for children whose veins are large enough to thread a lead through them. As your child grows, the length of these leads may become too short and may need to be replaced. Your child's doctor will check for this as your child grows.

Epicardial placement:

With this method, the leads are directly attached to the outer heart layer (epicardium). A small midchest incision is made just to the right of the breastbone (sternum) or through the left side of the chest. A second small incision is made on the upper part of the abdomen, for the pacemaker generator. The leads are then passed under the skin and are attached to the pacemaker battery. This method is mostly used with infants or small children who need a pacemaker.

Programming or "tuning" the Pacemaker:

The cardiologist will use a special machine called a programmer to set the pacemaker. By placing the wand of the programmer on the chest over the area of the pacemaker, the rate (speed) or the amount of energy needed to stimulate the heart can be checked. This helps the doctor to know that the heart is pumping enough blood and oxygen to the body.

Pacemaker (continued)

Length of hospital stay:

When a child comes in for placement or replacement of the pacemaker or the leads, he/she is often admitted the morning of the procedure for an overnight hospital stay. After the pacemaker has been put in place, your child will go to the Post Anesthesia Care Unit (PACU) until he/she awakens. Then your child will go to the Pediatric Intensive Care Unit (PICU) overnight for close monitoring. The length of stay can change depending on your child's special needs.

Discharge information:

The cardiologist or the nurses will review discharge information with you before your child goes home. This will include:

1. Your child can bathe if the pacemaker site can be kept dry, if not, sponge baths will be needed for two weeks.
2. Leave the steri-strips on until they fall off.
3. Keep the pacemaker area dry and do not touch the incision site. Your child can return to normal activity and return to school. However, he/she should not play high contact sports that could involve a direct blow to the pacemaker.
4. If the wound appears red, swollen, painful and warm to touch or begins draining, call the cardiologist right away.

Remember:

Approximately 30 days after surgery, you will be given a Pacemaker Identification Card which includes all the information about your child's pacemaker system. It is important to carry this card with you at all times.

Make sure your child wears an identification band so people know he/she wears a pacemaker.

Always tell other doctors including dentists about the pacemaker. Some of their equipment may damage or change the function of the pacemaker if special precautions are not taken. Your child will need antibiotics for dental work and minor surgery to prevent infections.

Care should be taken around TV satellite dishes, airport security gates large motors, and large magnets.

Be sure to tell the school nurse and anyone caring for your child that he/she has a pacemaker.

Be aware that your child should not be near an MRI room. An MRI (Magnetic Resonance Imaging) is a special x-ray. If you have any questions about this, ask your child's doctor.

Be sure to return to the Cardiology Office on your child's scheduled visits. Remember to call the doctor if you child has any abnormal feelings or if the pulse rate goes above or below those preset minutes.

Speak up if you have any questions or concerns