

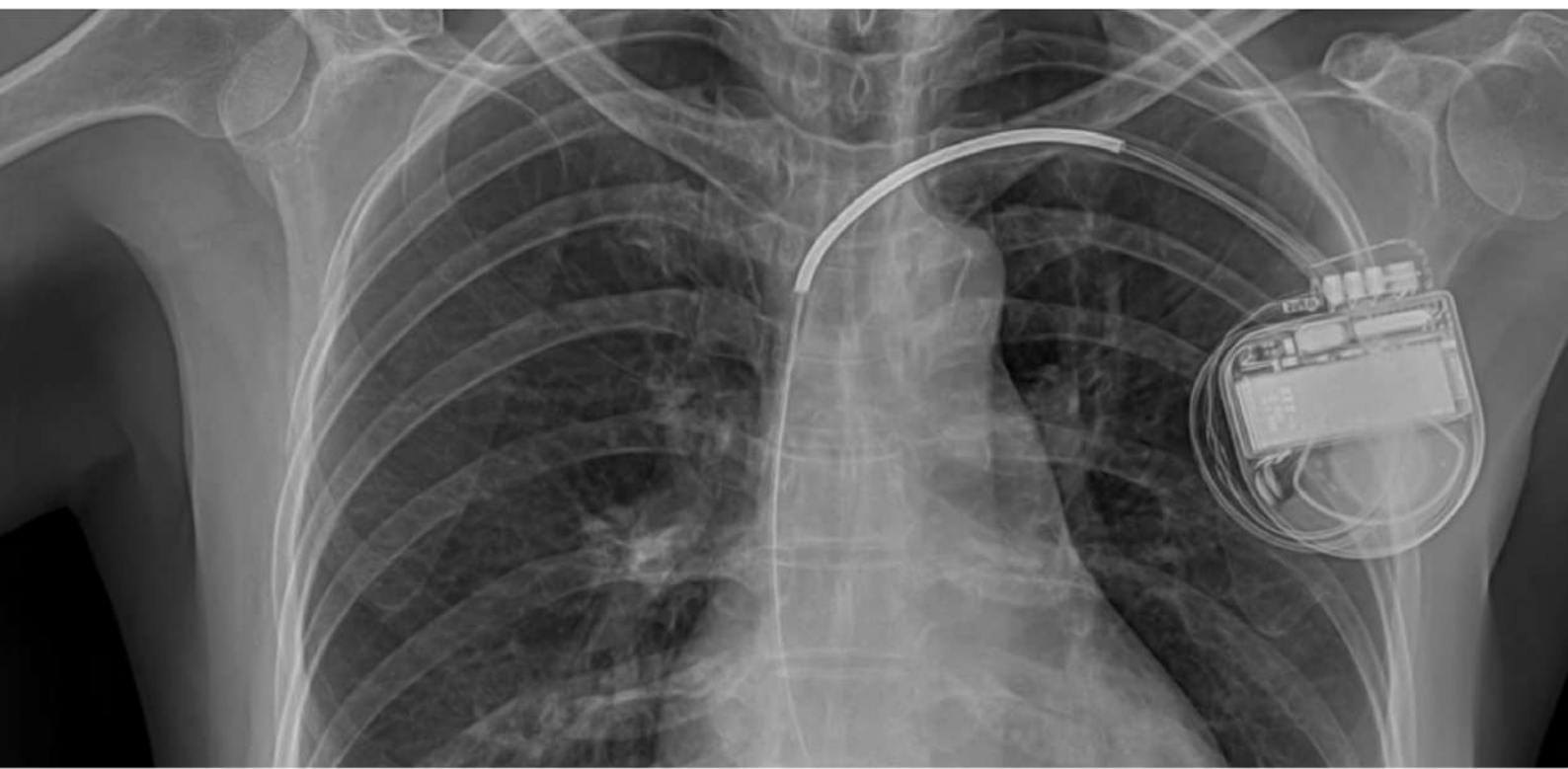
Permanent Pacemaker (PPM)

What is a Permanent Pacemaker (PPM)?

A pacemaker is a small electronic device implanted in the chest, just beneath the skin below the collar bone.

It functions to reduce the symptoms caused by abnormally slow heart rhythm. The pacemaker is capable of monitoring the heart rhythm. When the heart is beating normally, the device remains inactive. If the heart beats too slowly, the pacemaker delivers a small electrical current to the heart to stimulate the heart to beat at a normal rate.

Modern pacemakers are unobtrusive and do not affect daily activities.



A pacemaker system consists of 2 parts: the pulse generator and wires with sensors (called electrodes) on one end.

1. The pulse generator houses the battery and tiny computer. The battery usually lasts about 8-10 years, after which the entire pulse generator needs to be changed.
2. The electrodes detect and monitor the heart rhythm. It transmits energy from the pulse generator to pace the heart if required. The wires are inserted into the heart via the veins from the upper chest.



Why do I need a PPM implantation?

Unusually slow, fast or irregular heart rhythms can severely affect the heart's ability to pump blood throughout the body. This may cause symptoms such as:

1. Fatigue
2. Dizziness
3. Shortness of breath
4. Fainting
5. Death, in extreme circumstances

When these rhythm abnormalities cannot be corrected by medications, become intolerable or pose a danger to your life, your doctor may recommend a PPM to be implanted.

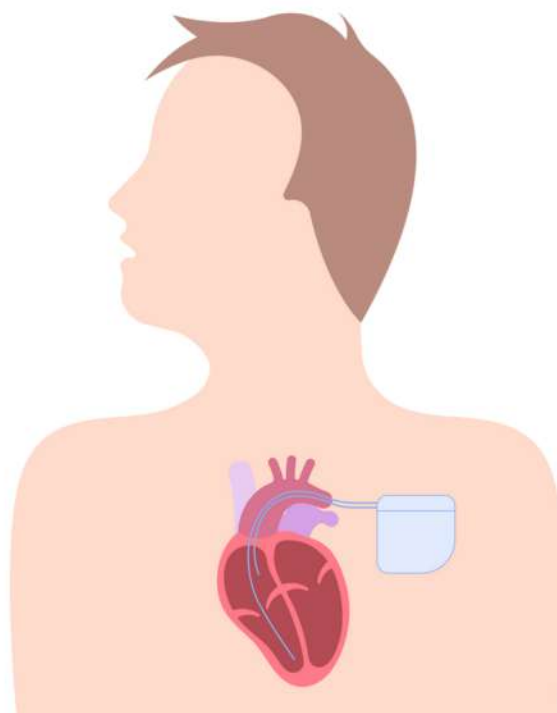
What can I expect for the procedure?

Before the Procedure:

Some routine blood tests and electrocardiograms (ECG) will be performed. The procedure usually lasts about one hour and is performed in the Invasive Cardiac Laboratory. You may be warded for 1 to 2 days for the implantation. You will need to sign a consent form after you have been given details of the procedure and its risks, benefits and alternatives.

If necessary, hair on your chest will be shaved, and cleansed with a special soap to keep the area of insertion sterile to prevent infection. Sterile drapes will then be used to cover you from your neck to feet. A soft strap will be placed across your waist and arms to prevent your hands from coming into contact with the sterile field.

A small plastic tube or cannula will be inserted into one of the veins on your hand to facilitate the injection of medications. Just before the procedure, you will be given an antibiotic injection to prevent wound infection and medication through the cannula to make you sleepy and relaxed. However, do note that you may not be fully asleep.



During the Procedure:

After the injection of a local anaesthetic, a small cut is made in the upper chest to create a small "pocket" under the skin to accommodate the pulse generator. Using a special x-ray, the pacemaker leads will be inserted into your heart through a vein in the upper chest and positioned in the heart. It is important you remain as still as possible during the procedure.

After the Procedure:

Upon returning to the ward, you will be hooked up to a monitor for a few hours after the procedure. You will be allowed to eat and drink once you are fully awake.

A chest X-ray will be performed the next day to check the position of the PPM and identify potential complications. The PPM will also be checked by a technologist. Most patients can be discharged 1 to 2 days after the implantation.

Upon discharge, you will be given an appointment for a follow-up at the cardiac device clinic in one week. The waterproof dressing should not be removed until you return for your review. The stitches need not be removed as they are absorbable. After your first review, your doctor will arrange for regular check-ups to ensure that the PPM is functioning normally and to electronically program the PPM to suit your heart's requirements.

You will need to fast for at least 6 hours before the PPM implantation.

Contributed by Department of Cardiology

This brochure is produced for educational purposes and should not be used as a substitute for medical diagnosis or treatment. Please seek the advice of a qualified healthcare provider before starting any treatment or if you have any questions related to your health or medical condition.

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