

What is a Pacemaker?

A pacemaker is a small device which is placed just under the skin usually below the left collarbone. There are one or two wires (depending on the type used) which are inserted by your cardiologist via a vein. These wires are placed at precise positions within the heart and allow the pacemaker to deliver a very small low voltage electrical impulse to initiate a heart beat.

A specialised type of pacemaker is the Bi-Ventricular pacemaker which stimulates two sides of the heart simultaneously. This is particularly useful in people with disorganised contractile function of the heart. Stimulating the heart from two points improves the total output from the heart and can be useful in the case of severe heart failure.

Why are pacemakers needed?

The primary reason for an implant of a pacemaker is to prevent the heart from going too slowly. A normal heart beat might vary from 40bpm when asleep up to 180bpm with extreme exercise. Sometimes pacemakers are needed not just to treat very slow heart beats but to treat inappropriately slow heart beats - eg. a heart beat of 70bpm at peak exercise would produce breathlessness and may require a pacemaker to increase that rate from 70bpm to 170bpm. Sometimes pacemakers are required as backup when other therapies are used - eg. Ablation (severing) of the AV node (a nerve that connects the top chambers to the bottom chambers of the heart) is sometimes required for treatment of fast heart rates due to atrial fibrillation. Pacemakers are often used to back up the heart beat when some drugs which slow the heart are necessary (ie. Amiodarone, beta blockers).

How are pacemakers inserted?

Pacemakers are generally inserted under local anaesthesia and the procedure takes approximately one hour. The procedure is done in a dedicated room called a Cardiac Catheter Laboratory (Cath lab) where an x-ray machine is used to guide the placement of the wires. A small incision is made after sterilizing the skin and the wires are inserted via veins under the left collarbone to the heart. The wires are tested by a technician and are then connected to the pacemaker which is inserted under the skin. The wound is closed with stitches which are dissolvable and then the patient is generally taken back to coronary care for monitoring overnight. The next morning the pacemaker is checked with a machine which can communicate with the pacemaker and a chest x-ray is performed to confirm lead position.

Are there any risks?

Whilst a pacemaker implant is a very common and relatively easy procedure there are known complications related to insertion. The most common complication is localised bruising or bleeding at the pacemaker site. This may on occasion be severe and require re-opening of the wound to remove any excess blood clot. The most important complication of a pacemaker implant is the chance of infection. This is reported in the literature to be between 1 in 100 and 1 in 500 cases. At the Gold Coast Heart Centre it is generally around 1 in 500 cases. The chance of infection occurs because of germs generally on the patient's skin or within the immediate surrounds of the patient at the time of implantation. If a germ enters the pacemaker pocket it will generally thrive and grow to become a significant infection by day three. Antibiotics are given to minimise this chance. If a system is infected it generally means the entire system needs to be removed and a prolonged course of antibiotics needs to be administered before a further pacemaker can be inserted.

Other rarer complications are perforation of the top of the lung, the subclavian artery or the heart itself during insertion. These complications are rarely life threatening and are usually dealt with and recognised at the time of insertion.

How long does the pacemaker last?

Generally modern pacemakers have very long life expectancy due to their ability to use only minute amounts of electricity for each heart beat. Life expectancy in the order of 8 to 12 years are now common. The replacement of a pacemaker is generally easier than the initial implant requiring only exchange of the pacemaker and not the leads.

How often will my pacemaker require checking?

Following insertion your local doctor will check the wound about a week later and the pacemaker connections will be checked at three months post implant and then each year following that. Generally these checks are routine, take 10 to 15 minutes and are painless.

Is there any preparation for the procedure?

On the day of the procedure you will need to fast for 6 hours prior to the procedure time. You can take medication with a small amount of water.

You should bring an overnight bag with you (including all your medications).

What happens when I arrive at hospital?

You need to present to the Admissions Department at the hospital. From there you will be taken to either the day procedure area or ward. You will be admitted by a member of the nursing staff and prepared for the procedure. A consent form for the procedure will need to be signed if not already done.

What happens after my procedure?

Your cardiologist will normally discuss the results of the procedure immediately after it is completed, or you may be transferred to the ward and your cardiologist will see you there to discuss the results. Any further instructions will be given to you at that time.

An appointment for follow up will be made on discharge if required.

***Should you have any specific queries or concerns relating to your procedure,
please discuss these with your Cardiologist.***