

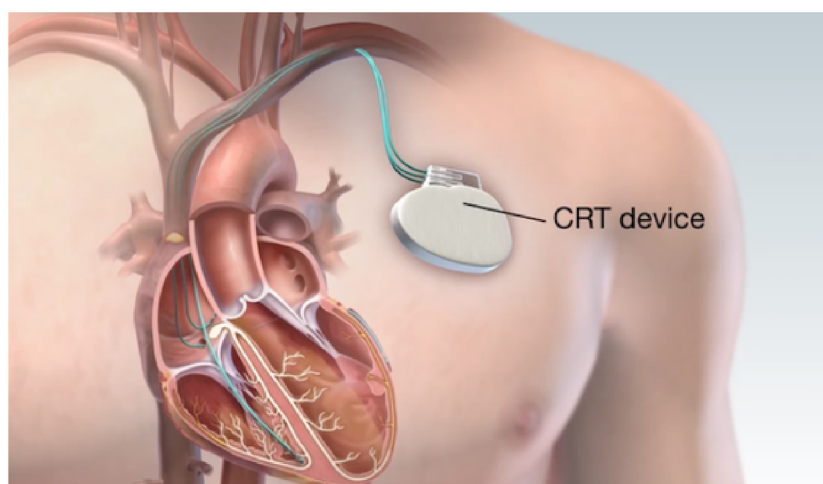
Cardiac Resynchronisation Therapy (CRT) Device

What is a Cardiac Resynchronisation Therapy (CRT) Device?

In a normal heart, the left and right lower chambers, or ventricles, pump at the same time. However, when a person has heart failure, it is common that the right and left ventricles do not pump together. A CRT device, also known as a biventricular pacemaker or deifbrillator, is surgically implanted in the chest, just beneath the skin below the collar bone. It generates small electrical impulses to make the left and right ventricles pump together.

The CRT device consists of 2 parts: the pulse generator and at least two leads, which are wires with sensors (called electrodes) on one end.

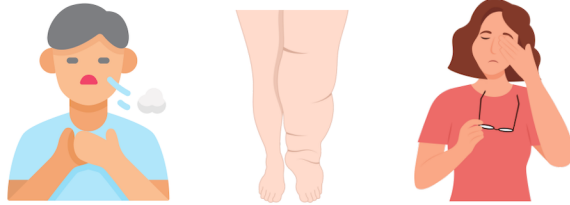
1. The pulse generator is an electronic, battery powered device.
2. The leads are positioned in the heart to help the heart beat in a more balanced way. They are inserted through veins in the upper chest into the right ventricle and a small vein that runs behind the left ventricle.



Why do I Need a CRT Device Implantation?

When the heart's contractions are delayed, the left ventricle is unable to efficiently pump blood to the body. This leads to an increase in heart failure symptoms, such as:

- Shortness of breath
- Swelling in the ankles or legs
- Weight gain
- Fatigue
- Rapid or irregular heartbeat



CRT has been proven to improve heart failure symptoms and overall quality of life by pacing the heart continuously and making the left and right ventricles pump together.

What Happens During CRT Device Implantation?

Before the Procedure

Some routine blood tests and electrocardiograms (ECG) will be performed. The procedure usually lasts about two to three hours 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.

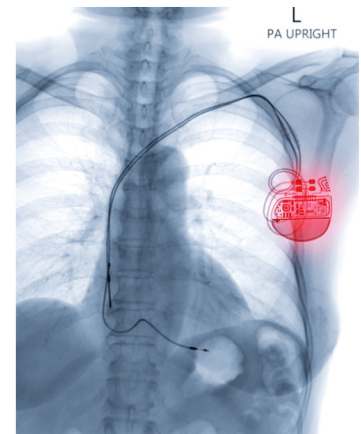
If necessary, hair on your chest will be shaved, and cleansed with a special soap to keep the area of insertion sterile to prevent infection. Sterile drapes will then be used to cover you from neck to feet. A soft strap will be placed across your waist and arms to prevent your hands from coming into 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 anaesthetics, a small incision or cut is made in the upper chest to create a small "pocket" under the skin to accommodate the pulse generator. One end of the pacemaker wire is connected to the pulse generator while the electrode end of the wire is inserted through the vein in the upper chest and is positioned in the heart with the X-ray guidance.



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.



Inform Your Doctor if you have these symptoms:

- Fever
- Excessive pain
- Inflammation over the wound
- Avoid any big movement of the arm on the affected side such as lifting the arm above your head and lifting a load of more than 5kg during the first week after implantation.
- Complete the course of antibiotic medication prescribed upon discharge.



Contributed by Nursing

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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