

defining what a cardiac implanted device is and does

What are they?

Cardiovascular implantable electronic devices (CIEDs) are small implanted devices (stopwatch size) with 1, 2 or 3 wires (called leads) going into the heart to provide support for heart function. The battery lasts on average 7 years and the unit will need to be replaced once the battery is depleted. It should not interfere with your day to day activities with a few exceptions.

In Canada there are 25,000 pacemaker and 7,000 implantable cardioverter defibrillator (ICD) implants yearly. Approximately 120,000 patients are currently living with a CIED. You are not alone!

What can it do?

Your device is there to support your heart to function at its best so you can have security in your quality of life...

- If your heart rate runs slow, it will be set to minimal rate and will never go below that rate - often 60 beats.
- If your lower heart chambers beat out of sync, the synchronization leads will ensure your chambers beat in rhythm.
- If your lower heart chambers beat too fast or erratic (sometimes misinterpreted as "the heart stopping") then a defibrillator can shock the heart to reset the rhythm.

Types of CIEDs

PACEMAKER DEVICES:

A pacemaker delivers electrical impulses to control the rhythm of your heart, *but it cannot deliver a therapeutic shock.*

- Single-chamber pacemaker:
Uses a single wire attached to one chamber of your heart.
- Dual-chamber pacemaker:
Uses two wires attached to two chambers of your heart.
- Biventricular pacemaker:
This is also known as cardiac resynchronization therapy (CRT) - see below.

ICD DEVICES:

Implantable Cardioverter-Defibrillator: A slightly larger device than a pacemaker which *can provide a therapeutic shock* to the heart. It can also detect irregular heartbeats and pace the heart (like a pacemaker). An ICD may have 1, 2 or 3 leads.

CRT DEVICES:

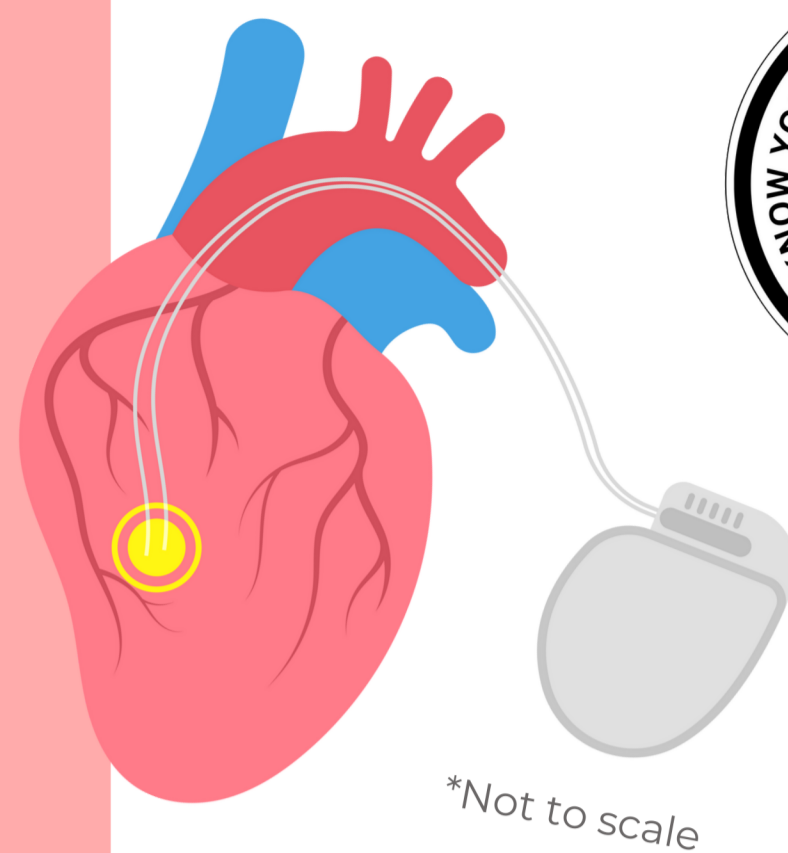
Cardiac Resynchronization Therapy come in 2 devices:

CRT-P

The device is used for resynchronization therapy with a 'P'acemaker. It has three leads that connect the pacemaker to the right upper chamber of the heart and both lower chambers.

CRT-D

Cardiac resynchronization with a Defibrillator. This device is recommended for people with Heart Failure or for those who have a risk of sudden cardiac death. It can detect dangerous heart rhythms and deliver a stronger shock of energy. The shock can reset or restart the heart rhythm.



Who needs one?

Medical indications for a CIED vary, and are not just for those with Heart Failure. A Pacemaker is beneficial to those with a slow heart rhythm; a defibrillator for those who have had a cardiac arrest (dangerous fast heart rhythm in lower chambers) or for those at high risk of one; a CRT is for specific individuals with Heart Failure who qualify based on specific criteria. These are therapeutic treatments and not cures.

Procedure info

Prior to your CIED procedure in hospital, you will have an educational meeting, likely at the hospital. Many hospitals use a video and will show you the device, explain cautions, and answer questions you may have.

Depending on what device and where in Canada you are will determine the length of your hospital stay. Most are done as day surgery with localized freezing, however some devices will require an overnight stay in hospital. Please note that your driver's licence will be suspended for a time while you heal - ask your care team for further details.

This ICD information sheet was compiled as general information & is not illness specific. Information was sourced from the Mayo Clinic, Cleveland Clinic & Heart & Stroke websites. A special thank you to Dr. Khoo & Dr. Jassel for the medical overview.

Property of HeartLife Canada / Ver 1.0 - 01/2024

