



Implantable Cardiac Monitor (ICM)

A Guide for Patients and Families

What is an Implantable cardiac monitor (ICM)?

An ICM is a small device placed just under the skin on your chest that continuously monitors your heart rhythm. The ICM will record any irregular heart rhythms depending on how your physician has programmed the monitor. The device monitors your heart rate and heart rhythm during your day-to-day activities. ICM are implanted to confirm or rule out a cardiac arrhythmia (abnormal heart beats).

1. The **ICM** is a small computer that monitors your heart rhythm continuously.
2. It will save information when your heart is going too slow, to fast or if your heart pauses for a few seconds.
3. It is powered by a specially designed battery.



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Why do I need an ICM?

- ♥ Your heart has an electrical system made up of special cells. It signals your heart muscle to squeeze or contract to pump blood and oxygen to your body.
- ♥ Sometimes this system is damaged by many factors including aging or heart disease. This can result in:
 - A slower than normal heart rate (bradycardia)
 - A faster than normal heart rate (tachycardia)
 - Long pauses between beats (heart block)
- ♥ If your electrical system is not working well, it can cause you to feel tired, dizzy, faint, or short of breath. The ICM will record and document if you have an irregular heart rhythm.
- ♥ The device is used to see if abnormal heart beats are causing symptoms.
- ♥ Your health care provider may recommend an ICM if you have:
 - Unexplained fainting
 - An arrhythmia or irregular heartbeat

How is it done?

- ♥ The procedure to insert an ICM is called **implantation**. An ICM implant may be implanted in a Doctor's Office, Ambulatory Care or Operating Room setting with local anesthetic (numbing medicine). The implant is considered a routine minor procedure with little chance or risk of complications. Bruising around the implant site and mild discomfort are common.
- ♥ Applying an ice pack for 15min per hour for the first two days and taking Tylenol (regular or extra-strength) should help with any discomfort.

Are there any risks?

- ♥ ICM implantation is a relatively safe procedure, however, as with any medical procedure, problems are possible. Although rare, these problems include:
 - Swelling, redness, or drainage/discharge at the insertion site
 - Fever
 - Sudden dizziness, light-headedness or fainting
 - Weakness or feeling tired for several days
- Should you experience any of the following, please seek medical attention
- ♥ **It is important to ask your doctor about the risks of an ICM implant in your specific situation.**

What can I expect before and after?

How to prepare for the procedure

- ♥ Always bring your BC Services Card (or Care Card) plus a list of the medications you are currently taking to every appointment and the day of your procedure.

- ♥ You will get specific instructions beforehand from the hospital or office of the doctor doing the procedure.
- ♥ You will be instructed as to how to take your medications before the procedure. Certain medications (like blood thinners and diabetic pills) might need to be adjusted. It is important to review these instructions carefully and take medications as directed.
- ♥ You may be asked to go for some blood work and an electrocardiogram (E.C.G.) by your cardiologist or family doctor.

Before the procedure

- ♥ You will be directed to the procedure waiting area.
- ♥ If you are already a patient in hospital, your healthcare team will help you get ready for the procedure.
- ♥ The doctor reviews the procedure with you and you will be required to sign a consent form.
- ♥ The doctor will advise you on which medications to take (if any) prior to the procedure.

During the procedure

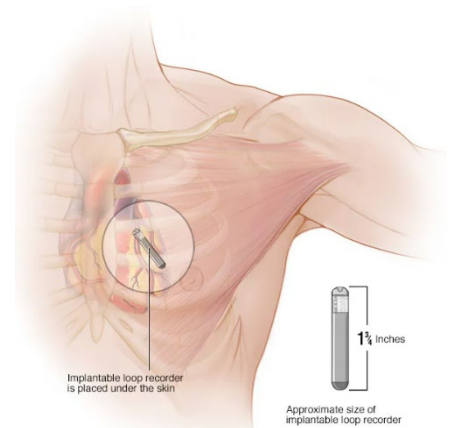
- ♥ Most people are awake for the procedure. You may be given a medicine to help you relax and feel comfortable.
- ♥ The doctor injects a numbing medicine under the skin to freeze the area where the ICM is being implanted.
- ♥ The insertion location is located underneath the skin over the 4th rib space close to the breast bone.
- ♥ The incision may be closed with stitches that dissolve on their own over time.
- ♥ The procedure takes about 15 to 25 minutes.

After the procedure

- ♥ You are moved to a recovery area. The nurses there monitor your heart rhythm and blood pressure for a short period before being discharged home.
- ♥ You might feel some discomfort around the incision site. Let the nurses know if you are having any pain so they give you medicine to relieve it.
- ♥ The nurses let you know when it is safe for you to eat and drink.
- ♥ You will go home from the recovery area or you might be moved to another unit if you need to stay in the hospital longer.
- ♥ Begin normal arm movements on the side of insertion after 24 hours, however, be mindful of your healing insertion site.

Going Home

- ♥ How soon you go home depends on your medical condition and recovery from the procedure. Most people go home the same day.
- ♥ Prior to being discharged:



- You will be provided with a remote monitor transmission system, activator button or smart phone app and instruction manual on how to use it. The care team will ensure you feel comfortable prior to being discharged.
- You will be given instructions for how to care for your incision site:
 - There will be a small dressing in place – please remove the dressing 2 days after your procedure.
 - There may be Steri-strips™ under your bandage – they should peel off on their own, if not, please remove 5-7 days after your procedure.
 - If a stitch is in place, it is dissolvable and will not need to be removed.
 - You may shower but make every attempt to keep the area as dry as possible. Do not put soap directly on the area, do not bathe or use a hot tub until insertion site is well healed. Pat the area dry with a clean towel, do not rub.
 - Stay out of standing water pools, bathtubs and the lake for at least 3 days.
 - Do not use any oils, creams/lotions, or powders on your insertion site until it is fully healed.
- ♥ You will be given a temporary ICM identification card. The company that made your ICM will mail you a permanent Identification card is about 4 to 8 weeks after your procedure.
- ♥ You may be given a follow up appointment time with your physician to inspect the device and ensure data has been collecting appropriately.

When to get help

- ♥ Contact your family doctor **right away** if you notice any of the following:
 - Any redness, swelling, or coloured liquid coming from your incision.
 - A fever over 38.0°C (100.4°F).
 - New bruising or redness around the incision.
 - Pain that gets worse or does not improve with pain medicine.
- ♥ If you experience any of the following symptoms, push the activator button or use your smart phone app:
 - Feel faint
 - Feel dizzy
 - Heart skipping beats (palpitations)
- ♥ **Remote monitoring is not a substitute for getting urgent help when you need it.**
- ♥ **ICMs only record your heart rhythm – please remember to seek medical attention if you feel unwell**
- ♥ **Call 8-1-1** to receive 24hr health information by speaking to a registered Nurse.
- ♥ **Call 9-1-1 or have someone take you to the nearest emergency room** you do not feel well or you feel worse from any of these above concerns. (**Do not** drive until you have been checked). Inform the Emergency Room Physician that you have an implantable cardiac monitor.

Living with an ICM

People who receive an ICM can return to their normal activities of daily living. Below are tips to help you stay healthy.

Protect your Implantable Cardiac Monitor

- ♥ **Do not place magnets near your ICM. Keep magnets at least 6 inches from the monitor.**
- ♥ The insertion site will heal completely within a couple of weeks, during that time please be mindful of the following:
 - Avoid direct blows to the ICM/insertion site.
 - Do not press on your ICM or massage/rub it in any way, even once completely healed.
 - You may resume vigorous activity once the insertion site has completely healed.
 - Do not lay face down until insertion site is fully healed.
 - Bras may need to be loosened if it touches your insertion site.
 - A soft towel between your seatbelt and chest may provide more comfort.
 - If you have a driving restriction already in place, that restriction remains valid until you are advised otherwise by your health care provider.

Tell others you have an Implantable Cardiac Monitor (ICM)

- ♥ Always carry your ICM Identification card with you.
- ♥ Show your family how to use your activator so that they will be able to assist you in sending a transmission if needed.
- ♥ Inform health care providers that you have a ICM device.

Stay active

- ♥ Most people return to their usual daily activities once they have recovered include physical and mental activity into your daily schedule.
- ♥ Each person is unique. Talk to your doctor about the kind of activities and exercises that are best for you.
- ♥ For most people, it is safe to resume sexual activity after an implant.

Follow-up Schedule

- ♥ After the implant of your ICM, you will be followed remotely by your doctor's office or by a cardiac device clinic using remote monitoring.
- ♥ Remote monitoring is a way for your ICM to automatically send information about your heart activity from home.
- ♥ If the doctor or the cardiac device clinician needs to see you in person, they will contact you to make an in-clinic appointment.

Symptom Recording

- ♥ Make sure to **always carry your Patient Assistant Activator or Smart Phone.**
- ♥ If you experience any of the following symptoms use the activator/App to record your heart rhythm.
 - Feel faint

- Feel dizzy
- Heart skipping beats (palpitations)
- ♥ Once a transmission is received:
 - your heart clinic team will check to see if any heart rhythm events have occurred.
 - your heart clinic team will read and review your transmission and call you with the results.
 - If you have a specific concern about your transmission, please call your doctor's office or device clinic.
- ♥ Let your clinic know of any changes in your address or phone number.

Ask questions

- ♥ Any time you have any questions or concerns:
 - Call your Cardiac Device Clinic.
 - Call your heart doctor or family doctor.
 - Call Health Link BC at 8-1-1 any time of the day or night to speak to a registered nurse.
 - ICM companies offer online support for non-urgent questions or concerns.

Frequently Asked Questions

What is electromagnetic interference (EMI)?

- ♥ Any items that generate, transmit, or use electricity have invisible electromagnetic fields around them. This electromagnetic field might affect the normal operation of your pacemaker. This is called 'electromagnetic interference' (EMI).
- ♥ Most household items are safe to be near and use, including items such as: battery chargers, curling irons, hair straighteners, electric blankets, guitars or toothbrushes, massage chairs, heating pads, hot tubs, saunas, tanning beds, electronic weight scales, and kitchen appliances including microwave ovens.
- ♥ It is also safe to be near and use electronics such as TV's, radios, computers, tablets, MP3 players, fax machines, photocopiers, DVD and CD players with remote control, printers, and GPS devices.
- ♥ Please check with your cardiac device team if you are having any medical procedure which involve cautery, radiofrequency, radiation etc. to avoid any problems with your device.
- ♥ Your ICM is MRI safe.

Can I travel with an ICM?

- ♥ It is safe to travel with an ICM. Let your cardiac device clinic know if you are planning to travel.
- ♥ Take your heart data transmitter (mobile app or bedside unit) with you.
- ♥ Inform airport security personnel you have a ICM and show them your ID card. It is safe to pass through the airport metal detector, have a body scan and use a hand-held metal detector.

How long will my ICM last?

- ♥ The battery generally lasts 2-3 years, and most often, the device will be removed

- ♥ If a slow or fast heart rhythm is documented, you may be required to have a pacemaker or cardiac defibrillator.

What happens to my ICM at end of life?

- ♥ ICM does not keep you alive, it only records your natural heart rhythm.
- ♥ The device will be removed once the battery runs out.

For More Information

- ♥ For more detailed information about getting an ICM, read the information given to you by your doctor's office or hospital before the procedure.
- ♥ For more detailed information about your specific ICM, read the booklet from the company that made the ICM, or visit their website.
- ♥ If you have questions that are not addressed in this booklet, ask your doctor or clinic.



Helpful Resources

Heart and Stroke Foundation of Canada

www.heartandstroke.ca

Canadian Heart Rhythm Society

www.chrsonline.ca

Choose 'Pacemakers' from the Main Menu under Heart Rhythm Health Resources or use this link: goo.gl/g4ttVL

Heart Rhythm Society

www.hrsonline.org

Choose 'Patient Resources'

HealthLinkBC

www.healthlinkbc.ca

Phone: 8-1-1

Phone: 7-1-1 for deaf or hard of hearing

Device Company	Website	Phone
Medtronic	www.medtronic.com	Questions about your device: 1-800-551-5544 Questions or troubleshooting- Carelink: 1-800-929-4043
Abbott/St Jude Medical	www.sjm.com	Questions s about your device and Merlin: 1-888-276-4170
Boston Scientific	www.bostonscientific.com	Questions about your device and LATITUDE: 1-800-929-4043
Biotronik	www.biotronik.com	N/A
Sorin	www.livanova.sorin.com	N/A



Cardiac Services BC

An agency of the Provincial Health Services Authority

