My Implantable Cardioverter Defibrillator (ICD)

Including Procedure Preparation and After Care





Date of Procedure: _____

With input from patients and families

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Introduction

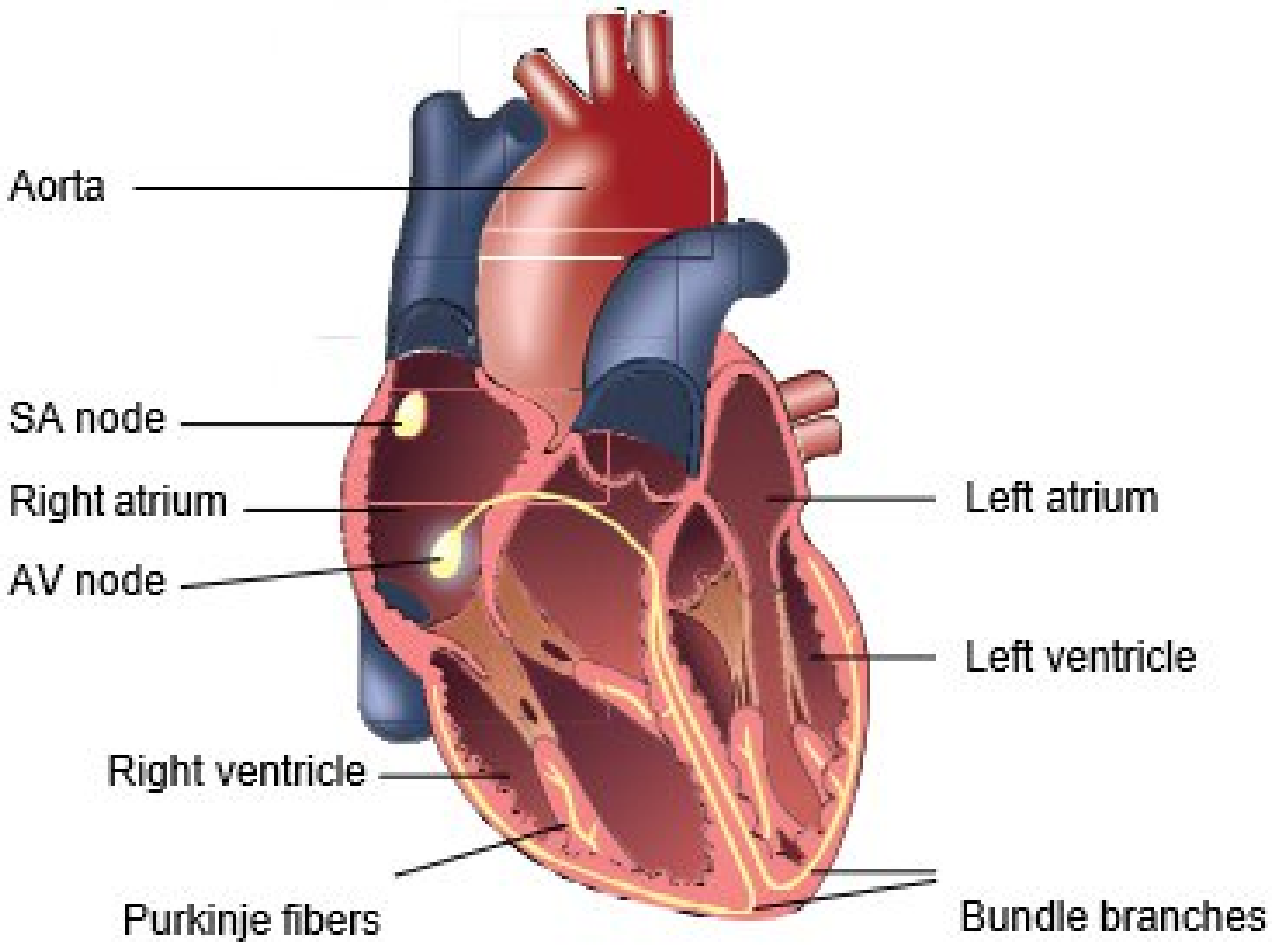
How to use this guide

The information in this guide will help you understand your implantable cardioverter defibrillator (ICD) and your recovery. It also has information about what will happen on the day of your procedure and your care afterwards, including when you go home. Not every patient has the same journey. Members of your healthcare team will go over this guide with you.

We know this may be a stressful time for you, and you will get a lot of information about your procedure. This booklet will help you keep track of what you need to do after your procedure. If you have any questions about this booklet, please call the Cardiac Device Clinic at 416-469-6580 ext.2126.

How the heart works

Your heart is a muscular organ with four chambers that work together to pump blood throughout your body. The two upper chambers, called the left atrium and the right atrium, receive and collect blood. The two lower chambers, called the left ventricle and the right ventricle, push blood out of the heart. To make the chambers pump blood, the heart has an electrical system. The electrical system sends tiny impulses to the upper and lower chambers telling them to contract (squeeze), which then pumps the blood through the heart and to the rest of the body.



Why do I need an Implantable Cardioverter Defibrillator (ICD)

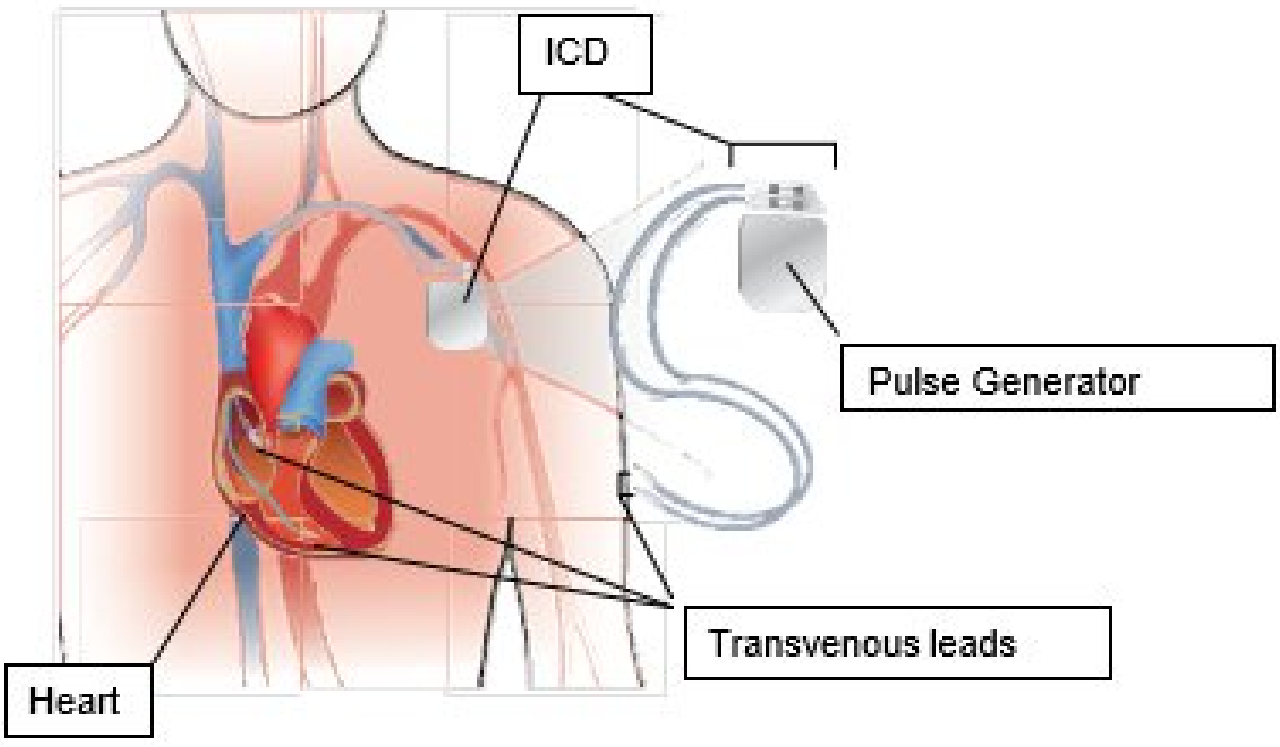
If the heart's electrical system does not work properly, it can cause an abnormal heartbeat (arrhythmia) that may be too slow, too fast, or irregular. You may feel chest pain, shortness of breath, or light-headedness. In severe cases, the heart can beat dangerously fast and erratic in the lower chambers (called ventricular tachycardia or ventricular fibrillation). If untreated, your heart can suddenly stop (called sudden cardiac arrest).

An implantable cardioverter defibrillator (ICD) is an electronic medical device that is put into your chest to detect and fix abnormal heart rhythms that could be dangerous. Your doctor has recommended you get an ICD because your arrhythmia has caused or puts you at risk of sudden cardiac arrest.

How the ICD works

An ICD continuously monitors your heart and will send electrical impulses or shocks, if needed, to return your heartbeat to normal. The device has two parts:

- **The pulse generator (battery)** is the power source and tiny computer that makes the electrical shock(s) that go to your heart at the right time.
- **The lead (wire)** carries the electrical energy from the ICD to the heart. These are flexible, insulated wires connected to the pulse generator. It also sends information about the heart's activity back to the device. Depending on the type of ICD, one or more leads are inserted through a vein into your heart (transvenous).



If the device detects a life-threatening heart rhythm, the ICD will send a sudden and quick shock to your heart (called defibrillation) that may feel like a kick in the chest. In some cases, you may faint and not feel the shock.

If the device detects that your heart rhythm is too fast, it will send small impulses to help pace your heart to correct the heart rhythm. You may feel a flutter in your chest or nothing at all. The ICD can also pace your heart if your heartbeat is too slow.

Before Your Procedure

Preparing for Your Procedure

The Cardiac Device Clinic at 416-469-6580 ext.2126 will contact you to confirm the date of your implant about one week before your procedure. They will give you instructions on how to prepare for your procedure, including when to stop any medications you may be taking. Your arrival time will be given to you closer to the procedure date.

1 Day Before Procedure:



We recommend you use antibacterial soap (Chlorhexidine 4%) to clean your skin for your procedure. This is to help prevent infection.

At night, shower and use soap to wash from the neck down. Leave the soap on your body for 2 minutes before rinsing off.

After your shower, **do not** use any lotion or powder.



Do not shave your chest where you will have your procedure.



Wear clean pajamas and use clean bed sheets.

Morning of the Procedure



Do not eat or drink anything after midnight before your procedure or at the time told to you by the scheduling office. You may rinse your mouth with water or brush your teeth, but do not swallow. You may take a small sip of water if you are told to take medication before your procedure.



Take off all make-up, nail polish, jewelry and body piercings.



Shower and use soap to wash from your neck down again. This will lower the risk of infection. **Do not** use perfume, cologne, scented cream, body lotion, deodorant, or hair products.



Wear comfortable clothing that will be easy to put on after your procedure.



Tie your hair back if your hair is long.



Do not smoke any tobacco products or recreational drugs.



Do not take or use any prescription, creams, patches, over-the-counter or herbal medications unless directed by your pharmacist or doctor.

Preparing for Your Recovery

Most people go home the same day as their ICD implant procedure, but you should plan to stay in the hospital for at least 4 to 6 hours. Here are some things to consider as you prepare for your recovery:

- Talk to your family and friends about the support you will need after your procedure. Someone should stay with you the first night you are back home.
- Ask someone to help you with physical tasks when you are at home, such as cooking, home maintenance, and laundry. You will not be allowed to lift more than 2.3 kilograms (5 pounds) for six weeks.
- Plan how you will bathe: You can have a shower 3 days after your procedure, but no baths for 6 weeks. This timeline may change based on how your wound is healing.
- Arrange for a friend or family member to drive you home and to your follow-up appointments. You will not be allowed to drive for a period of time after your procedure.

The Day of Your ICD Implant

What to bring to the hospital

- Your Ontario Health Card
- Glasses, dentures, hearing aids and any walking aids you may need
- Comfortable, non-slip-footwear and any orthotics or prosthetics you use
- Your prescription and over-the-counter medications in their original containers

Please note: The hospital cannot accept responsibility for lost, stolen, or damaged items.

Registration

When you get to MGH, check in at Patient Registration on the **1st floor**.

After checking in, you will walk to the Cardiac Cath Lab Bay on the **2nd floor**. You will be taken to an assigned area. You will be asked to take off all your clothing and put on a hospital gown. A nurse will check your blood pressure, heart rate, and temperature.

Next, a nurse will ask questions about your medical history and review your medication(s) with you. The nurse will then get you ready for your procedure by clipping any hair at the procedure site and inserting an intravenous (IV) in your hand or arm. Before your procedure, your implanting doctor will explain the procedure to you and get your consent

Rescheduled Procedures

Sometimes procedures are cancelled because there is someone else who needs an emergency surgery. If this happens to you, the triage nurse will contact you and a new procedure date will be booked as soon as possible.

In the Procedure Room

When the implanting doctor is ready, a member of your healthcare team will take you to the procedure room and ask you to lie down on a special X-ray table. The procedure can take up to 2 hours depending on your needs.

What will happen during my procedure

- You will be covered with warm blankets and connected to equipment that will help us monitor your heart rate, blood pressure and oxygen level.
- The doctor will clean your chest with a cold cleaning solution and place sterile drapes over you. It is important not to move or touch anything above the drapes once they are in place.
- The team will talk about your procedure before starting. You are welcome to take part in the discussion.
- You will get a mild sedative and painkiller through the IV to keep you comfortable and pain-free during the procedure. You will also get antibiotics to help prevent infection.

- You will be awake during your procedure. The area on your chest that will be cut will be injected with a local anesthetic to numb your skin, so you do not feel any pain.
- An incision (cut) is made below the collarbone, and a small space is made in the fatty tissue under the skin. This area is often called the “pocket”.
- The implanting doctor will feed small wires (leads) through your vein and into your heart using an X-ray camera.
- The ICD is put into the pocket. You may feel a little pressure as the implanting physician puts in the ICD.
- Your healthcare team will test your ICD to make sure the device is working. The device will be programmed to fit your needs.
- The incision is closed with stitches that dissolve and covered with a sterile dressing.

After your procedure

After the procedure, you will return to the Cardiac Cath Lab Bay. You will be connected to a heart monitor, and a nurse will check your vitals regularly. You will also get an ECG and chest X-ray to check the function and placement of your ICD.

Most patients go home the same day and have a follow-up appointment with the device clinic within a week. In some cases, you may stay in hospital overnight to have your heart monitored.

When you are discharged and ready to leave the hospital, you will receive discharge instructions.

After Procedure Care

When should I get medical help?

Contact your doctor and tell the Cardiac Device Clinic at **416-469-6580 ext.2126** if you experience any of the following:

- Fever of 39 degrees Celsius (100 degrees Fahrenheit) or higher for more than 24 hours.
- Extreme tenderness, warmth and redness around your incision.
- Yellow/green drainage or excessive bleeding from your incision (cut)
- Any abnormal pain or other symptoms that does not get better with your medications.



Taking Care of Your Incision

The look of your incision will improve over time. It is common to have some discomfort, tenderness and bruising around your incision site. You may take acetaminophen (Tylenol) for pain, or another medication ordered by your doctor. Do not take anti-inflammatories such as naproxen or ibuprofen (Advil) as they increase your risk of bleeding. If the medication does not give you relief, or you have angina or other chest pain, speak with a nurse or doctor.

Keep the dressing on your incision for 72 hours (3 days).

3 days after your procedure, you can take off the transparent dressing and have a shower.

Do not soak in a bathtub or swim for 6 weeks. This is to prevent your incision site from bleeding, prevent infection, and to help with healing. You can leave the incision site open to air after your shower to help it heal.

Keep your incision dry.

Pat your incision dry with a clean towel after every shower. Do not rub the area. Do not put lotions or cream on or around your incision site.

Stitches will dissolve

Stitches will dissolve on their own within 6 weeks and they do not need to be removed.

Small strips of non-allergenic tape were put across the wound to hold the edges together. If the tape does not fall off on its own, gently remove the tape after 7-10 days.

Activity Guide

Your body needs time to heal. It can take up to 6 weeks for the ICD leads to settle firmly in your body. For 6 weeks, limit the amount you move and use your arm on the side of your implant:

Do not raise your arm.

Keep your arm on the side of your implant lower than your shoulder.

Do not lift, push or pull heavy items.

Do not lift, push, or pull items heavier than 2.3 kg (5 lbs.). For example: laundry baskets, garbage bins, groceries, luggage, furniture, appliances, heavy doors, pets, or children.

After your 6 week follow up appointment, you can go back to all the daily activities you did before your procedure, including activities that use your arms, like golf, tennis, swimming or sweeping.

Arm Circle Exercise

Arm circles can help if your arm is sore and stiff.

Stand or sit up straight. Raise your arm slightly at your side. Do not raise your arm higher than your shoulder. Slowly circle your arm forward and then backward. Repeat 10 to 15 times, four times every day.

Driving

Medical conditions like some kinds of arrhythmias can make driving unsafe. The Ontario Ministry of Transportation is responsible for deciding when and if it is safe for you to drive. Your doctor is required by law to inform the Ministry if you have a medical condition that may affect your ability to drive safely. In some cases, you may not be able to drive for 1 to 6 months after your procedure.

Nutrition

Good nutrition is important for your recovery. After your procedure, you will be able to eat and drink as normal, but you should eat healthy meals that are low in fat, cholesterol and salt, and high in fiber. If you have diabetes, be sure to control your blood sugar.

Returning to Work

Returning to work depends on the demands of your job. You may need to take time off work to heal and recover. Every person is different. Speak to your doctor or nurse about going back to work.

Follow-up Appointments

You will have regular ICD follow ups at the Cardiac Device Clinic. The first visit is usually within the week after your procedure, again in 6 weeks, and then every 4-6 months.

During these appointments, a nurse will use a programmer to check your leads and battery. They will review information from your device and make any changes you may need.

The appointments are usually 45 minutes. It is important to attend all your follow-up appointments, even if you feel well. Continue to see your family doctor and cardiologist for ongoing care.

What to bring to your follow-up appointments

- Your Ontario Health card
- A current list of your medications, including any over-the-counter creams, patches, inhalers or puffers, injections, eye drops, herbal medicines and vitamins

Remote Monitoring

Some ICDs can be checked from home using remote monitoring. Remote monitoring allows our cardiac device specialists to review information from your ICD and help make sure it is working properly, so you do not need to come to the hospital for every device check.

You will need to visit the Cardiac Device Clinic for an in-person appointment at least once a year to test your ICD.

How it Works



1. Your ICD connects to a small transmitter in your home. Keep your transmitter plugged in at all times.

   Travelling?
   You may take your transmitter with you when you travel, but please inform the clinic of your travel plans.

2. The transmitter collects real-time, encrypted data, such as battery status, lead function and shocks.

3. With your consent, the data is sent to the Cardiac Device Clinic automatically or at a specific time provided to you by our clinic.

   You may be required to come into the clinic for an in-person evaluation.

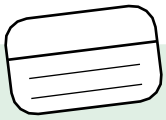
Please Note:

The remote monitoring system is not an emergency information system and does not substitute for medical treatment in the case of an emergency.

If you feel unwell, see your family doctor, or visit your nearest emergency room for urgent matters. Please inform the emergency room doctor that you have remote monitoring for your device.

Living With Your ICD

After you recover from your procedure, you should be able to go back to many of the activities you enjoyed before.



Your Device Card

Your health-care team gave you a device card with important information about your ICD. Carry this card with you at all times. You may also choose to wear a medic-bracelet or necklace to let people around you know you have an ICD.

What do I do if I feel a shock?

When the heart is beating dangerously fast and irregular, a high energy shock is sent to the heart muscle to restore normal rhythm. A shock may feel like a kick in the chest, and you may or may not lose consciousness.

If you feel one shock and feel fine, you do not need to go to an emergency room. Call the Arrhythmia Device Clinic at **416-469-6580 ext. 2126** and we will book an appointment for you to come to the clinic.

Call 911 if you experience:

- More than one shock in a 24-hour period
- Chest pain, pressure or heaviness in your chest
- Shortness of breath or fainting

Appliances and Vehicles

Items that use magnets or electricity have magnetic fields around them. These fields are usually weak and will not affect your ICD device. Strong magnetic fields can interfere with the device and may affect the way it works. Do not use or stay near induction ovens, welding machines, large stereo speakers, and radio transmitting towers. Do not work on a vehicle while the engine is running.

Cellphones

It is safe to talk on a cellphone but avoid placing a cellphone within 15 centimeters (6 inches) of your ICD device. Use your cellphone on the ear farthest away from your ICD.

Exercise and Sports

Your ICD will not limit you from exercising and playing most sports. Speak to your doctor or nurse before going back to strenuous exercise. If you are playing aggressive recreational activities, try not to hit or get hit on the area over the device. A hit near the ICD can affect how it functions. If you do get hit near your device, call your doctor or the Cardiac Device Clinic.

Medical Treatments and Tests

Tell your healthcare provider that you have an ICD device. Most medical equipment does not interfere with your device, but you may have interference from procedures that involve electrocautery, TENS (transcutaneous electrical nerve stimulation), diathermy, ECT (electroconvulsive therapy), radiation and MRI (magnetic response imaging).

Security Systems

Security systems like those you walk through at airports and stores will not harm your ICD, but it may set off an alarm. If this happens, show your device card.

Handheld systems that use wands, like at airports, may interfere with your ICD. Show your device card and ask for a pat down instead of the wand.

Sexual Activity

The ICD should not deliver therapy for the natural increase in heart rate that happens during sex. However, if this happens, you may feel a sensation, but the shock will not hurt your partner.

Who to Call if You Have Questions

If you have questions or concerns about your appointments or your device, please call:

Cardiac Device Clinic……**416-469-6580 ext.2126**

Monday to Friday, 8:00 a.m.– 4:00 p.m.

For more information about your ICD medical device and answers to frequently asked questions, visit the company websites:

Biotronik: www.biotronik.ca

Boston Scientific: www.bostonscientific.com

Medtronic of Canada: www.medtronic.ca

Abbott (St. Jude Medical): www.cardiovascular.abbott

Microport (LivaNova /Sorin/Ela): www.microport.com