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# Care of Your Child with an Implantable Cardioverter Defibrillator

Developed by the health care professionals of the  
Department of Cardiology with assistance from the  
Department of Learning and Development.

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4480 Oak Street, Vancouver B.C. V6H 3V4, 604-875-2345

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Name: \_\_\_\_\_

ICD name and model number: \_\_\_\_\_

ICD serial number: \_\_\_\_\_

Lead name and model number: \_\_\_\_\_

Lead serial number: \_\_\_\_\_

Surgical Date: \_\_\_\_\_

**Directory**

Pediatric Cardiologist: \_\_\_\_\_

Contact Number: \_\_\_\_\_

Or after regular hours, contact the cardiologist on call at:

\_\_\_\_\_

Cardiac Surgeon: \_\_\_\_\_

Contact Number: \_\_\_\_\_

Nurse Clinician: \_\_\_\_\_

Contact Number: \_\_\_\_\_

Your child has had an implantable cardioverter defibrillator (ICD) inserted to help treat his or her irregular heart rhythm (arrhythmia). This is an electronic device that is programmed to deliver a pre-set impulse (shock) in the event of a life-threatening arrhythmia such as ventricular tachycardia (abnormally fast heart rate) or fibrillation (rapid, uncoordinated contraction of the heart muscle). It can also act as a pacemaker by monitoring the heart's electrical activity and maintaining a normal heart rhythm and rate.

The ICD is sometimes referred to as an Automated Implantable Cardioverter Defibrillator (AICD).

It is normal to have lots of questions about how the ICD will affect your child. This booklet is intended as a guide to help answer those questions. Please be sure to discuss any specific issues you may have with your child's health care team.

## INCISION CARE

Your child's nurse will show you how to properly care for your child's incision. It is important to keep the incision clean and dry until it is completely healed. Your child can have a shower as soon as he or she is feeling well enough after surgery.

Your child **should not**:

- Have a bath for 7 days.
- Go swimming for at least 6 weeks. See the "Activity" section on page 4 for more information about swimming.

## SCHOOL

Your child can return to school when the discomfort from the surgery goes away. This is usually in one week. Your child should not participate in regular physical activity classes for 6 weeks. If you have any questions about an activity, or if you are unsure if it is safe for your child to do, discuss it with your child's nurse or cardiologist.

Your child should not carry a backpack or heavy books on the affected side (the side where the ICD was inserted is called the affected side).

Tell your child's teachers about your child's ICD and any restrictions. Give your child's teachers the emergency care plan and explain what to do in case the ICD discharges.

## FOLLOW-UP CARE

Your child needs to be seen by a Cardiologist on an ongoing basis. Follow up is important to check that the ICD is working as it should and to monitor the battery status.

## ACTIVITY

**Immediately after surgery**, we recommend that your child uses an arm sling to help remind him/her to limit his or her movement on the affected side for the first 48 hours.

**For 4-6 weeks after surgery**, your child must avoid arm swinging or overhead reaching. Common daily activities that involve repetitive, vigorous arm movements, such as

hair brushing and teeth brushing, should be done with the unaffected arm. Common sport activities that use these motions are golf, tennis, bowling, baseball, basketball, volleyball and swimming. Your child should not lift weights or heavy objects weighing over 5-10 pounds during this period.

Your child should avoid contact sports that could involve a direct blow to the ICD site. This could cause the ICD lead to break or become dislodged.

Your child must wear a seat belt at all times when traveling in a vehicle.

**After 6 weeks**, your child can return to his or her regular activities but there are some special considerations because of the ICD:

1. Contact sports such as karate, boxing, wrestling, tackle football, hockey, bungee jumping and uneven parallel bars in gymnastics should be avoided. Any activities that could result in a direct blow to the ICD should be avoided.

2. Other sports may be OK depending on things such as your child's age, size, size of their playmates/teammates and the location of his or her ICD. Sometimes your child can participate if the ICD site is protected with protective garments/aides such as HeartGuard™ (see [www.softballjunk.com/heartguard.htm](http://www.softballjunk.com/heartguard.htm) for more information). Make a point of discussing your child's sports and activities when you visit the cardiologist.

3. Consider safety in individual sports. For example, if your child is swimming or climbing, make sure he or she is with a buddy. There is always a possibility that your child could have a fainting episode which could put your child in potential danger.

4. Tell your child's family and friends that the ICD and the pacing lead (wire) is fragile. Your child will need surgery if it is broken. Encourage your child to use his/her best judgment about participating in an activity.

5. Your child should not wear a backpack over his/her affected shoulder.

6. Your child must wear a seatbelt, even if it is uncomfortable over the affected area. You can purchase a padded adaptor for comfort with a seatbelt (see [www.aboutsofttouch.com](http://www.aboutsofttouch.com) for more information).

## WHEN TO CALL

Tell your child's Cardiologist or the clinic nurse if your child has any of the following problems:

- Increased pain, redness, swelling or drainage from the incision
- Wound edges coming apart
- Fever above 38°C
- Dizziness, fainting
- Palpitations, "heart racing"
- Decreased exercise tolerance
- Increased tiredness or irritability
- Chest pain or difficulty breathing
- An ICD shock

## ICD DISCHARGE ( SHOCK)

Here are some guidelines in case your child's ICD discharges and he or she gets a shock.

- Remain calm.
- Check your child's pulse and evaluate how he or she feels.

If your child receives one shock and remains conscious, you should notify your child's cardiologist. A follow-up appointment will be arranged as required. A detailed assessment may be performed to understand what caused the ICD to discharge.

**Call 911 or your local emergency response number if your child experiences:**

- Palpitations (where you or your child is aware of a faster or irregular heart rate) associated with dizziness, chest pain or loss of consciousness (fainting).
- Dizziness or fainting.
- A change in the level of alertness including confusion, extreme lethargy (extreme drowsiness or sluggishness) or unresponsiveness.
- More than one shock.

***Begin CPR if needed.***

If you hear tones or beeps coming from your child's ICD, notify your child's cardiologist immediately. See the directory on page 1 for the number to call.

## **TRAVEL**

Here are some guidelines to follow when traveling that will help reduce the risk of having problems during your trip:

1. It is strongly recommended that you have travel insurance when traveling to ease the high costs of care in other countries.
2. Always carry the ICD device ID card. It is strongly recommended that your child wear a Medic Alert™ bracelet or necklace (see [www.medicalert.ca](http://www.medicalert.ca) for more information).

3. Make a list of your child's medical emergency contact information. Include contact numbers of people in your home location (a relative or close friend) as well as at your destination. Keep this information with your child.

4. Before you leave, check if there is Pediatric Electrophysiology support at your destination. Check with your child's cardiologist and/or the website of your child's ICD device manufacturer (e.g. Guidant, Medtronic). They often have a listing of doctors around the world that can help you in case of an emergency.

5. Ask your cardiologist to provide you with a summary of your child's ICD settings.

6. Make an emergency plan and carry it with you and your child at all times.

7. Airport screening devices may detect the ICD's metal case and activate the alarm. Show your ICD identification to the airport personnel and ask for a handsearch. Avoid having the handheld screening tool waved over the ICD. It contains a magnet that may temporarily interfere with ICD treatment.

8. Take enough medicine to last the whole time you will be away from home.

## **ENVIRONMENTAL/HOSPITAL HAZARDS\***

Your child can be safely exposed to most household appliances and tools that are in good repair and are properly grounded, including:

- Microwave ovens
- TVs, AM/FM radios, VCRs, remote controls
- Personal computers, printers, fax machines

- Hand-held appliances: hair dryers, shavers (avoid holding against implant site)
- Electric blankets, heating pads
- Cellular phones if kept at least 6 inches away from the ICD site

Electromagnetic interference (EMI) can affect how your child's ICD functions. Some sources of EMI include:

- Industrial arc welders and furnaces
- Large generators and power plants
- Large magnets, such as those used in some large stereo speakers and magnetic therapy products
- Antennas used to operate CB or ham radios and other radio transmitters
- Large TV or radio transmitting towers and power lines carrying over 100,000 volts (maintain a distance of 25 feet)

***Moving away from the source of EMI generally allows the ICD to work normally.***

Medical equipment and procedures:

- No Magnetic Resonance Imaging (MRI)
- X-rays and CT scans are OK

***Be sure to notify any medical personnel that your child has an ICD.***

Security systems at airports, stores:

- Your child should walk normally through security screening archways, but not stop and/or wait next to the detection equipment.
- The ICD may trigger the alarm. Be prepared to present the device identification card.
- Request scanning with a handheld screening device held away from the ICD, or request a hand search.

If your child feels “funny” or not right around any electrical equipment, he/she should step away from the area and see if symptoms resolve.

\* Adapted from “Questions About Electromagnetic Interference (EMI): Living With an ICD (Medtronic, 2003)”.

Booklet developed by Laurie Cender, RN, Pam Tran, RN and Jan Rooks, RN, with information from a presentation at the Annual Society of Pediatric Nurses general meeting by Deb Hanisch, RN, MSN, CPNP, November 2003.

## **ADDITIONAL RESOURCES AVAILABLE**

Your Implantable Cardioverter Defibrillator: Patient Manual (Medtronic, 2002)

Questions about Electromagnetic Interference (EMI): Living With an ICD (Medtronic, 2003)

A Parent's Guide to a Child's Defibrillator (Medtronic, 2004)