Living With Your ICD

A patient’s guide to understanding Implantable Cardioverter Defibrillators (ICDs)

Compliments of your doctor and St. Jude Medical
St. Jude Medical thanks James G. Porterfield, M.D., and Linda M. Porterfield, Ph.D., Arrhythmia Consultants, Methodist Central Hospital and University of Tennessee, Memphis, for their contribution to this booklet, parts of which are based on their interactive computer-disk program, *Know Your Defibrillator*. 
Your Contact and Device Information

Have your doctor or nurse complete the information on these pages before you go home from the hospital.

Physician Name ____________________________
   Phone Number ____________________________
   Address _________________________________

Hospital Name ____________________________
   Phone Number ____________________________
   Address _________________________________

Device Model Number ________________________
   Serial Number ____________________________
   Date Implanted ___________________________
   Description ______________________________

__________________________________________________________________________________

__________________________________________________________________________________
Physician Instructions
Living With Your ICD

Many people suffer from heart disease. Often it takes the form of a rapid heartbeat that can result in a stopping of the normal pumping action of the heart (cardiac arrest). This kind of heartbeat is called an arrhythmia (a RITH me uh). Your doctor has explained that you have an arrhythmia.

There are several ways to treat an arrhythmia. This booklet is about one of the newest treatments, implantation of a device called an implantable cardioverter-defibrillator (ICD).

ICDs look a lot like pacemakers. As you may already know, pacemakers can speed up a slow heartbeat. ICDs do just the opposite. They slow down a too-rapid heartbeat. Some ICDs can do both.

When you have a ICD, there are certain things you need to know about.

Caution: Electromagnetic interference (EMI) may interfere with the function of your ICD. Avoid sources of electromagnetic fields. (Page 21)

Caution: Metal detectors and Electronic Article Surveillance (EAS) systems will not harm your ICD if you pass through the archway at a normal pace. Avoid lingering in the immediate area. If a search with a hand held wand is performed you should stress to security personnel that the search should be performed quickly and that they
should avoid holding the wand over your ICD for a pro-
longed period. (Page 23)

**Caution:** Medical equipment, such as diathermy, TENs
units, and MRI may affect the function of your device.
Always tell the doctor or nurse that you have a ICD before
undergoing any medical procedure. (Page 24)

**Caution:** Keep a hand-held personal cellular phone at
least 6 inches (15 cm) from your ICD. A cellular phone
may affect the function of your device. (Page 27)

Detailed information is provided in *Cautions and
Warnings* beginning on page 21 of this booklet.

ICDs now protect the lives of many thousands of people
worldwide. You and your doctor may decide to use an ICD
in your treatment. We at St. Jude Medical want you to feel
comfortable about your decision, so we have provided you
with this guide. It will help you understand how ICDs
work and how they will affect your life.

You will probably have questions that this booklet does not
answer. We encourage you to discuss them with your
doctor and your nurse. They are your partners in health
care and your best source of information.

*If you come across a word you do not understand, you can
find its definition in the Glossary on page 41.*
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The Healthy Heart

Why is the heart sometimes called a “pump”?
The heart's job is to move blood around the body. Blood contains the oxygen that the organs and tissues need to do their work. The blood cells pick up oxygen in the lungs and the pumping action of the heart moves this oxygen-rich blood to the rest of the body.

What does the heart look like?
As shown in Figure 1, the heart has four chambers. When it is at rest, the chambers fill with blood. With each heartbeat, the heart squeezes blood out into the body.

**Figure 1.** A typical heart.
How often does the heart beat?

A normal heart beats 60 to 100 times each minute. When you exercise, get excited, or experience stress, your body needs more oxygen. Your heart beats faster to keep up with the demand. How fast it beats is controlled by a small area in the upper chamber of your heart. This area is called the sinoatrial (SA) node. It sends out an electrical signal that causes your heart to beat. Figure 2 shows the location of the SA node.

![SA Node]

**Figure 2.** The sinoatrial (SA) node sends out an electrical signal that causes your heart to beat.
Arrhythmias

What is an arrhythmia?
An arrhythmia is any heart rhythm that is “abnormal.” It may be considered abnormal if it is too fast, too slow or starts somewhere in the heart other than the SA node.

What causes the different kinds of arrhythmias?
Damage to the SA node or blockage of its electrical signal can cause the heart to beat too slowly. This is called bradycardia.

Bradycardia
A person with bradycardia may feel very tired because their body is not getting enough oxygen. They may also feel light-headed or dizzy. Pacemakers correct bradycardia by speeding up the heartbeat to a more normal rate.
**Ventricular Tachycardia**

Sometimes the heart beats much too fast. This is a serious condition called ventricular tachycardia (VT). As shown in Figure 3, VT is caused by signals that come from the heart’s lower chamber instead of from the SA node. During VT, the heart beats so fast that its chambers cannot completely fill with blood between beats. Therefore, less blood and oxygen are pumped through the body, causing dizziness, fainting, or loss of consciousness.

Doctors and paramedics can stop VT with medication or with an electrical shock. Sometimes the heart’s normal rate returns without treatment.

*Figure 3. Ventricular tachycardia (VT) is caused by signals that come from the heart’s lower chamber instead of from the SA node.*
Ventricular Fibrillation

The most serious kind of arrhythmia is ventricular fibrillation (VF). As Figure 4 illustrates, during VF many, many electrical signals come from the heart’s lower chambers. These signals cause the heart to “quiver” rather than beat normally. Because of the quivering, very little blood is pumped out to the body. A person suffering from VF loses consciousness very quickly. An electrical shock must be given at once to restore normal heart rhythm. This can be done by an ICD or an external defibrillator. Untreated ventricular fibrillation can be fatal.

Figure 4. Ventricular fibrillation (VF) is caused by many electrical signals that come from the heart’s lower chambers and cause the heart to quiver.
**Some Basic Facts About ICDs**

**What is an ICD?**

ICD stands for implantable cardioverter-defibrillator. You may also hear an ICD called a “pulse generator.” Through the use of electronic circuitry, the battery-powered ICD senses the heart’s rhythm and delivers treatment when necessary. This treatment is in the form of electrical pulses delivered to the heart. Wires, or “leads,” connect the ICD to the heart. An illustration of the ICD and leads is shown in Figure 5.

![Figure 5. An ICD system.](image-url)
What does an ICD do?

An ICD corrects rapid, abnormal heart rhythms. It constantly watches the heart and delivers treatment to stop an abnormally fast rate—such as VT and VF described on the previous pages. ICDs can treat slow rhythms as well. They do this by sending tiny electrical impulses to the ventricle, the atrium, or both.

Your doctor sets the ICD to watch for heart rates that could be harmful to you. When the ICD senses that you are having an arrhythmia, it sends electrical pulses to the heart muscle through the leads. The electrical pulses slow the heart, therefore restoring a more normal rate.

Why do I need an ICD?

ICDs are for people who have had an abnormal, fast heart rate that caused them to faint or caused their heart to stop pumping. Sometimes medication by itself can control these fast heart rates. When medication doesn't work, doctors can use an ICD. There is more about medication in a later section of this booklet.
What is the therapy like?

Some arrhythmias can be corrected easily with a series of very small electrical pulses. You probably won’t notice this kind of therapy.

Stopping other, very fast arrhythmias may require a larger pulse of energy (a shock). A shock has been described by some ICD patients as a swift thump or blow to the chest. How strong the thump feels depends on how strong the shock is. Lower energy shocks may produce a less intense thump. Any discomfort associated with shock therapy lasts for only a short time.

How often does the ICD deliver therapy?

To treat arrhythmias, therapy varies widely from patient to patient, depending on each patient’s heart condition.
What should I do if I receive a shock?

Your doctor will tell you what to do if you receive a shock. Doctors usually want to know right away if you receive two or more shocks within 24 hours.

Important: Follow your doctor’s instructions about what to do if you receive a shock.

When you receive a shock:
What happens after the ICD is implanted?

Your doctor will give you a special schedule to follow for your regular checkup visits. Checkups don't hurt and take only a few minutes. They tell the doctor if your ICD is working properly and how much energy is left in the battery. Checkups also tell how often your ICD has delivered electrical pulses to your heart.

After your ICD is implanted, you will be given an identification card with information about your ICD. Put the card in your wallet or carry it with you at all times. Show your card if you are ever in an emergency, are admitted to a hospital, see a new doctor or need to prove that you have an ICD.

You can obtain an application for a Medic Alert® identification emblem. The Medic Alert Foundation provides an ID emblem for people with medical problems. If you become ill and need emergency aid, the emblem alerts medical professionals that you have an ICD. For more information, contact the Medic Alert Foundation at (209) 668-3333 (888-633-4298 in the USA).
**Figure 6. Example of a typical St. Jude Medical Patient Identification Card.**

<table>
<thead>
<tr>
<th>Patient</th>
<th>PAT DOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defibrillator Model</td>
<td>V-338</td>
</tr>
<tr>
<td>Serial Number</td>
<td>12345</td>
</tr>
<tr>
<td>Implant Date</td>
<td>18-Mar-04</td>
</tr>
<tr>
<td>Lead Model</td>
<td>1571/55</td>
</tr>
<tr>
<td>Serial Number</td>
<td>RP12345</td>
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<tr>
<td>Usage</td>
<td>DEFIB/S/P</td>
</tr>
<tr>
<td>Implant Date</td>
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</tr>
<tr>
<td>Lead Model</td>
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</tr>
<tr>
<td>Serial Number</td>
<td>DC12345</td>
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<tr>
<td>Usage</td>
<td>SP</td>
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<tr>
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<tr>
<td>Lead Model</td>
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<td>Usage</td>
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<tr>
<td>Implant Date</td>
<td>18-Mar-04</td>
</tr>
</tbody>
</table>

*Physician: Chris Smith  
Phone: (212) 867-5309*
Why does my ICD vibrate?
Some ICDs have a built-in Patient Notifier, which vibrates under certain circumstances. If you feel your ICD vibrate, contact your doctor.

What happens when the battery runs down?
ICDs can be expected to last anywhere from three to six years. The life of the ICD depends on how often it delivers therapy. When the battery gets low, the entire ICD needs to be replaced. An incision is made where your current ICD is located, and your current ICD will be replaced with a new one. This is generally a very quick procedure and you will probably stay in the hospital for only a short time. Your ICD can be replaced as many times as needed. During the ICD exchange, the lead wires are not usually changed, but they are tested to make sure they are still working properly.

What happens if a lead needs to be replaced?
If a lead needs to be replaced, surgery is required to replace it.
Risks and Benefits

What are the benefits of having an ICD?

The major benefit of an ICD is that it constantly senses the heart's rhythm and automatically treats an arrhythmia. If your arrhythmia is very dangerous, this treatment can save your life. Also, many patients find that symptoms such as light-headedness, dizziness, and fainting decrease after they get an ICD. Some patients no longer need anti-arrhythmia drugs, and others need less anti-arrhythmia drugs.

An ICD gives many patients more “peace of mind.” They feel safer because the ICD will automatically treat their arrhythmia. You may experience other benefits from an ICD. Your doctor is the best person to help you understand them.

What are the risks of having an ICD?

Your doctor is the best source of information about the risks of getting an ICD. Be sure to talk about all your questions and concerns. Some possible risks of ICD treatment are discussed below.

A small percentage of ICD patients will develop a complication because of the implant surgery. They may include infection, a reaction to a drug used during surgery, blood loss, or damage to a blood vessel, the heart wall, or other organ. After the surgery, you will feel some discomfort, and you will be tired. As you recover, you will feel better.
However, some patients continue to feel some discomfort where the ICD is implanted.

It is important to follow certain precautions after you get an ICD. Your doctor will discuss them with you. Also, read this booklet completely, and pay close attention to sentences that are labeled with the word “warning” or “important.” Those sentences contain important safety information. For more information about precautions and warnings, see page 21.

When an arrhythmia occurs, ICD treatment may not end it, or treatment may make the arrhythmia worse. In either case, the ICD then delivers stronger treatment to try to end the arrhythmia. The ICD may not always eliminate all symptoms of the arrhythmia. You still may feel light-headed or dizzy, or you may faint.
Implanting the ICD System

What will the operation be like?
You will be under anesthesia during the operation. Once you are asleep, the doctor makes two incisions. The first incision is to implant the leads. One end of a lead goes in or on your heart. The other end will be plugged into the ICD.

The second incision makes a “pocket” or pouch just under your skin. Next, the doctor connects the leads to the ICD. The doctor puts the ICD in the pocket to hold it firmly in place.

Once the leads are connected, the system is checked to make sure it works properly. After the testing, your incisions are closed and you are taken to the recovery room.

Figure 7 shows some of the incisions commonly used for implanting leads and ICDs.
What are the most common types of surgery used to implant the leads?

**Transvenous:** Transvenous means “through the vein.” This type of operation is used for leads that are placed inside your heart. The doctor makes a small incision near your collarbone and threads the leads through a vein into your heart.
**Thoracotomy:** This is a general term used to describe several types of chest operations. A thoracotomy is used to place “patch” leads on the outside of your heart. These leads are thin oval patches made of rubber and wire mesh. The operations described below are similar operations. The difference between them is where the incision is made.

**Sternotomy:** During this operation the incision is made over your breastbone, or sternum. This is the type of operation that is commonly used in coronary bypass and heart-valve surgery.

**Subxiphoid:** During this operation the incision is made slightly to the left of your breastbone.

The choice of operation depends on your heart condition, any previous chest surgery you may have had, your anatomy, and other factors.

**What is recovery like?**

When you wake up from the anesthesia, you will probably be drowsy and feel some discomfort. You will be connected to an electrocardiogram (ECG) to watch your heart and its activity. In fact, your heart will be watched closely during the entire time you are in the hospital.

By the following day, you will probably be up and walking about. Every patient’s recovery from the operation is different, so ask your doctor how long you can expect to be in the hospital.
Before you leave the hospital, your doctor may test the ICD again. To make sure your ICD works properly, the doctor will make it deliver therapy, usually a shock. During this testing you may be mildly sedated; however, you should be able to feel the shock.

After your ICD is implanted, you should return to your normal activity as soon as you feel up to it. You may feel a little tired or sore at first, so build slowly up to your normal routine. Before long you’ll feel more like yourself.

You will need regular checkups after you are released from the hospital. Your doctor will let you know how often these checkups should be. Once you’re at home you should pick up your life where you left off before your operation. You will feel stronger with each day and can resume your normal activities.
Home From the Hospital

Listed below are a few important things to remember.

1. **You should follow your doctor’s instructions for returning to your normal activities and for rehabilitating your heart.**

2. **Feel free to talk with your doctor if you or your family find it hard to adjust to the ICD once you get home.**

3. **If you need medications, take them as directed.**

4. **Follow the doctor’s instructions about receiving a shock (see page 9).** If the doctors instructions are to phone them after receiving a shock, place the phone number in a convenient place.

5. **See your doctor for regular checkups.** The doctor will discuss a specific schedule for you to follow. If you are planning to travel or if you are moving, ask your doctor for the name of a doctor in the new location who can treat you and your ICD.

6. **Avoid any rough contact with your ICD.** Avoid contact sports such as wrestling and football. Report any signs of soreness, swelling, or redness near your incisions to your doctor.

7. **Always carry your ID card.** You will receive an identification card after your ICD implant. It will contain information about your ICD. Place the card in your wallet or carry it with you at all times. Show your card if
you are ever in an emergency, are admitted to a hospital, see a new doctor or need to prove that you have an ICD.

8. **Have your family members learn CPR.** This is a wonderful lifesaving skill for an emergency.

9. **Call your doctor immediately if** the ICD pocket becomes painful, swollen or red (whether or not you also have a fever) or if you experience palpitations, dizziness, or fainting.
Cautions and Warnings

Most electrical and mechanical devices have no effect on your ICD. Its built-in features protect it from the kinds of interference you are likely to encounter in your normal daily activities.

General Information

Any electrical equipment, appliance, or machine that you use should be in good working order. If the power plug is the three-prong type, make sure that the grounding plug is intact. Do not use three-wire to two-wire “cheater” plugs. An evaluation of wiring by an electrician, particularly in older homes, would identify any improper grounding.

Caution: Do not carry magnets or products containing magnets close to your ICD.

Avoid holding motor-driven appliances and machine-shop tools closer than necessary to your implant site.

When working with tools or appliances, be careful in situations where you could be injured if you become dizzy or receive a therapeutic shock from your ICD.

EMI

There are some things that produce very strong magnetic fields or electromagnetic interference (EMI) and may affect your ICD’s function. Certain types of electrical or magnetic energy can interfere with your pulse generator’s
operation. You should do your best to avoid sources of EMI.

Use the following information as a guideline and discuss it with your doctor. If you have concerns about a specific type of equipment or appliance not listed within this booklet, check with your doctor. If you still have questions, contact St. Jude Medical at (408) 738-4883 (800-733-3455 in the USA).

**Home Appliances**

Assuming they are in good condition and the plugs have not been damaged or altered, the following items are safe to operate:

- kitchen appliances, including microwave ovens, can openers, blenders, toasters, electric knives
- televisions, VCRs, personal computers, AM/FM radios, remote controls, garage door openers
- major appliances, including washers and dryers, electric stoves, refrigerators, etc.
- electric blankets, heating pads

Avoid holding the following items closer than necessary to your implant site:

- hand-held appliances with motors, such as hair dryers and shavers
- light shop equipment, such as drills, table saws, etc.
- transmitters for radio-controlled equipment or toys
It's generally safe to work around spark-ignited internal combustion engines, such as lawn mowers, leaf blowers, automobiles, etc., but limit your exposure to ignition-system parts when they are in operation. If you're fixing your car, remember that your car's electrical system (alternators, high-tension ignition wires, spark plugs, and coil wires) can be a source of EMI.

**Office Equipment**

Most office equipment is safe to operate as long as it is in good working order and the plugs have not been damaged or altered. This includes computers, electric typewriters, fax machines, pagers and copiers.

**Security Systems**

Metal detectors and anti-theft systems used in airports, stores and other locations create electromagnetic fields than can interfere with your ICD.

Anti-theft systems or Electronic Article Surveillance (EAS) systems such as those used at the entrances/exits or checkout counters of stores, libraries, banks, etc. emit signals that may interact with ICDs. It is very unlikely that these systems will interact with your device. To minimize the possibility of interaction, just walk through the entrances/exits of these establishments at a normal pace and do not linger in these areas.

Metal Detectors: Walking through the metal detector archway will not harm your ICD. Be sure to pass through
the archway at a normal pace and avoid lingering in the immediate area. Your ICD system has metal inside that may set off the airport security system alarm. If the alarm does sound, be sure to present security personnel with your ICD identification card. If a search with a hand held wand is performed you should stress to security personnel that the search should be performed quickly and that they should avoid holding the wand over your ICD for a prolonged period.

**Industrial Equipment**
Large industrial equipment, such as generators and electric motors, often generate strong electromagnetic fields that can interfere with your ICD. Avoid standing near large motors or other electromechanical equipment. Make sure that the equipment is properly grounded before working near it.

**Medical Equipment**
Although most medical equipment will have no effect on your ICD, some may affect its function. Always tell the doctor or nurse that you have an ICD.

You can safely undergo diagnostic X-rays including fluoroscopy, dental and chest X-rays, computed tomography (CT) scans, and mammographies. Ultrasonic dental cleaners should not affect your ICD.

**Caution:** Do not undergo any diathermy procedure, even if your ICD has been turned off. It could cause damage to
the tissue around the implanted electrodes, or permanent
damage to the ICD.

**Caution:** Try to avoid electrical nerve and muscle stimu-
lators (TENS units). They may interfere with the function of your ICD.

**Caution:** Magnetic resonance imaging (MRI) scans can severely damage your ICD. When you are in or near an MRI room, your ICD might be affected.

**Recreation**
Amusement park rides should not affect your ICD, but be cautious of rides that have large sparks, such as bumper cars. It’s also best to avoid activities that involve severe shaking, like horseback riding or bumper cars. Depending on the programming of your device, this type of activity may inappropriately cause a temporary increase in the rate of pacing.

Most tanning beds will not affect your ICD.

**Caution:** Don’t touch the antenna of an operating CB or ham radio.

**Arc Welding**

**Caution:** Arc welding can affect your ICD because of the strong electromagnetic fields produced. Here are some recommendations to help minimize interference:
■ Wear non-conductive gloves, such as leather (must be dry), fireproof cloth, or rubber. Keep your shoes dry, and don’t weld in a wet or damp area.

■ Use acetylene or other non-electric welding when the application is suitable.

■ Don’t use higher current settings than necessary.

■ Keep the cables close together by twisting them around each other. Place the welding machine and excess cable away from you.

■ Don’t weld using repeated short bursts; wait about ten seconds between each weld. If you have difficulty starting a weld on a dirty surface, don’t strike the rod rapidly, and wait about 10 seconds between each start.

■ If you feel dizzy, light-headed or faint, stop welding immediately. Lay down the rod and move away from the welding machine. Arrange your work so that if you drop the handle and the rod because of a dizzy spell, they will not drop into the metal being welded. For similar reasons, don’t work on a ladder or in a cramped, confined location.

■ Don’t work alone. Have someone else around when you’re welding.
Cellular phone

Recent studies have suggested that if a cellular phone is held close to an ICD (within 6 inches), the phone may affect the operation of the defibrillator. This may be either because of radio signals produced by the phone or because the phone contains a magnet. It is possible that a cellular phone might stop your ICD from delivering therapy or cause it to deliver therapy that is not needed. The effects produced by a cellular phone are temporary. If you move the phone away from the ICD, the ICD works normally again.

Caution: Because there are so many different cellular phones and because people and their ICDs will each react differently, St. Jude Medical cannot make recommendations that cover all patients and all cellular phones.

Here are some general guidelines for cellular phone use:

- Keep a hand-held personal cellular phone at least 6 inches (15 cm) from your defibrillator. Portable and mobile cellular phones generally use more power than hand-held models. For phones transmitting above three watts, keep the phone at least 12 inches (30 cm) from your ICD. Hold the phone to the ear opposite the side of the implanted device.

- Some phones send out signals when they are turned ON but are not being used (for example, in the listen or standby mode). Therefore, do not carry the phone in a breast pocket or on a belt within 6 inches of your
ICD. Store it on the side of your body opposite the ICD.

**Caution:** Do not hold a cellular phone too close to your ICD. It may affect ICD function.

Contact St. Jude Medical for more information about using a cellular phone.
Learning to Live with Heart Disease

My illness has changed my life. How do I cope with it?

Serious heart disease is a blow that can affect your emotions as well as your body. At times you may feel anxious, afraid, depressed, even angry. There are many ways to cope:

- Talk to other people. It will help you work through your feelings. Talk to your doctor, a nurse, a counselor, a friend or family member, or a member of the clergy.

- Talk to your doctor about joining a support group. Sharing experiences with other ICD patients lets you know that you are not alone.

- Exercise regularly. It’s a great way to reduce stress, build strength and gain confidence. Remember to ask your doctor before starting an exercise program. There is more about exercise later in this guide.

- Learn more about relaxation. Too much stress can wear you down and increase your chance of getting other illnesses. It also disturbs your sleep and makes you cranky.
One good way to relax is to sit quietly with your eyes closed for 20 to 30 minutes twice a day. A short nap each day or a slow walk every morning can also be calming.

- Take care of yourself. Avoid alcohol and caffeine. And quit smoking. These habits can make anxiety and depression worse.

**My spouse/family member is the patient. How can I help?**

If a family member or friend is the patient, it is natural for you to have the same fears and worries. There are several things that can help both of you cope with their condition. For example, listen when they want to talk. Your loved one needs reassurance that they have your support. However, you should not deny that their illness is serious.
Drugs

Why do I need medication for my arrhythmia if I already have an ICD?

Anti-arrhythmia drugs and the ICD can work together to make your abnormally fast heart rate easier to stop or occur less frequently. About half of ICD patients take anti-arrhythmia drugs.

If I do need anti-arrhythmia medication, how long must I take it?

Arrhythmias can be treated, but usually not cured. You will probably always need to take medication for your condition.

I'm told that my anti-arrhythmia drugs may need periodic adjustments. How will that be done?

Your doctor may find it necessary to increase or decrease your drug dosage. Your doctor may also add a new drug. Your heart must be watched closely while your doctor makes these changes. This means that you will need to stay in the hospital. The length of the hospital stay varies from patient to patient.
What are the side effects of my medication?

**Warning:** Do not stop taking your anti-arrhythmia drug(s) without the advice of your doctor!

Each drug has slightly different side effects. Some of the more common ones are stomach or intestinal upsets, dizziness and rashes. If you have any of these symptoms, call your doctor. He or she will make sure that the symptoms are not caused by something else. Do not assume that your anti-arrhythmia drug is the cause.

Is it OK to take my anti-arrhythmia drugs with other drugs?

Make sure your doctor knows about all of the drugs you are currently taking. Tell him whenever another doctor prescribes a new drug.
I already have heart disease. Will changing my diet benefit me?

It is never too late to improve your diet. The American Heart Association recommends a diet high in fiber and low in fat, cholesterol and sodium (salt). High-fat, high-cholesterol foods (such as whole milk dairy products, red meats and junk foods) contribute to hardening of the arteries—a major cause of heart attacks and strokes. High-fiber foods are rich in vitamins and minerals and make you feel full and satisfied for fewer calories.

What are good sources of fiber?

Oatmeal, fresh vegetables, and fruit are good sources of fiber. Fiber helps lower blood cholesterol and prevents constipation.

How much fat can I have?

Generally, you should keep saturated fat to less than one third of your daily fat intake—10% of daily calories. A fat-rich diet raises blood cholesterol and can lead to weight gain, both of which contribute to heart disease. Most
packaged foods list fat, cholesterol and fiber content on their labels. Talk with your doctor about your specific dietary requirements and changes you may need to make in your eating habits. A registered dietitian is a wonderful resource to help you learn more about eating to be “heart healthy.”

**What is the best way to control my fat intake?**

Let balance, variety and moderation guide you. There is no need to give up meats and dairy products. Eat lean cuts of meat and low-fat dairy items. Save high-fat foods such as potato chips and cheesecake for special occasions.

Avoid saturated fats. These are found mostly in red meats, whole milk products, and foods made with palm and coconut oil. In general, saturated fats come from animals. Sometimes it is not obvious that a food is high in fat. For example, one ounce of trail mix with peanuts and raisins has as much fat as one chocolate chip cookie.

**What foods are high in sodium?**

Salty foods and those foods with preservatives generally have a high sodium content. For example, broth, soy sauce, cold cuts, hot dogs, chips, nuts and pretzels are high in sodium. Sodium may encourage high blood pressure and water retention. Reducing the sodium in your diet is simple if you take note of the food products labeled as “low sodium.” Ask your doctor how much sodium is OK for you.
**Besides diet, what affects heart health?**

Many factors contribute to heart disease. Some things you can't change, like your sex, race, age, high blood pressure and family. You can change other things that affect your heart, like smoking, a poor diet and lack of exercise. If you have high blood pressure, have it checked regularly and follow your doctor’s instructions to keep it under control.

**Why is being overweight dangerous for a person with heart disease?**

When you’re overweight, the extra pounds make your heart work harder. They can also lead to high blood pressure and diabetes, which are bad for the heart. Losing excess weight eases the strain on your heart.

If you diet, you should lose weight slowly, ideally one-half to one pound a week. You will be more likely to keep the weight off. Your doctor can help you set up a weight-loss program.
Exercise

What kind of exercise can I do after surgery?

After surgery you should resume your normal activity as soon as you feel up to it. You may feel a little tired or sore at first, so build slowly up to your normal routine. Before long, you’ll feel more like yourself. Your doctor may give you special exercise instructions or suggest that you start a cardiac rehabilitation program.

There are only a few exercise restrictions to keep in mind. For example, avoid contact sports like wrestling or football, since they may damage the ICD or the leads. Consult your doctor before doing strenuous or repetitive upper-body exercise like weight lifting or softball.

Warning: Avoid contact sports after you get your ICD. Also, get your doctor’s approval before starting an exercise program, especially if it involves upper-body activity.

What is cardiac rehabilitation?

It is an exercise and education program to help you regain your strength and improve your heart. A typical program consists of regular exercise monitored by medical professionals. Walking and bicycling are the most common
exercises. You will also attend classes to learn more about your heart, the reasons for your heart disease, and how to live a healthier life.

Ask your doctor if this kind of program would be good for you. Your doctor will develop one specifically for you.

**Do I need to go to a special facility for cardiac rehabilitation?**

Not always. You may begin your cardiac rehabilitation program in a monitored setting but continue at home. An example of exercise you might do at home is a twenty-minute walk three times a week. Monitor yourself. If you begin to feel weak or short of breath, slow down or stop until you feel stronger or catch your breath. Over time, you will build up your strength and endurance.

No matter where you exercise, be sure to wear loose clothing and comfortable walking shoes. Feeling comfortable will help you get the most benefit and enjoyment from exercising.

**What if my ICD delivers therapy when I exercise?**

This does not happen very often. But remember, the ICD is watching how fast your heart is beating and during exercise your heart rate will increase. Generally your doctor makes allowances for this increase when programming your ICD. In the isolated case, your ICD may need to be adjusted or “fine tuned” to avoid unnecessary therapy.
If you do receive a shock while exercising, stop. If you are in the hospital or office, tell the person attending you. If you are at home, notify your doctor.
What about sex?

How will having an ICD affect my sex life?

Your sex life should not be affected by having an ICD. Once your incisions heal and your doctor gives the okay, you and your partner can resume relations when you want to. Healing is usually complete within 12 weeks but it varies from one patient to another.

Is there any chance the ICD will deliver therapy during sex?

Physical activity (of any kind) is not likely to cause the ICD to deliver therapy. But if it does happen during intercourse, stop and notify your doctor just as you would if it happened during exercise.

Will I have problems with my sexual performance?

ICDs rarely affect sexual performance. Impotence may occur for a short time. It may be due to worry about receiving therapy or medications you are taking. If the problem doesn’t get better, discuss it with your doctor. You may fear that your partner will be hurt if the ICD delivers a shock. They may feel a tingle, but nothing more.
In short, you can pick up where you left off. The key lies in becoming comfortable with the ICD.

**Is it possible to dislodge the ICD? Will pressure affect its operation?**

The ICD is firmly fixed in the pocket under your skin and the leads are well secured to the ICD. Pressing on the ICD does not affect how it functions. However, avoid rubbing your ICD or the area surrounding it. Avoid rough contact that could impact your implant site.
Glossary of Terms

**Arrhythmia**
An abnormal rhythm of the heart.

**Atrium**
One of the two upper chambers of the heart. These chambers receive blood from the body and pump it to the ventricles, the lower chambers of the heart.

**Bradycardia**
An abnormally slow heart rate, less than 60 beats per minute. However, if a person is in very good physical condition, it is natural for their heart rate to be below 60 beats per minute.

**Cardioversion**
The use of electric shock to stop rapid heartbeats, usually ventricular tachycardia.

**Contraction**
A squeezing of the heart muscle that forces blood out of the heart. This contraction is the heartbeat.

**Defibrillation**
The use of electric shock to stop rapid heartbeats, usually ventricular fibrillation. Defibrillators use paddles on the
outside of the chest or internal electrodes placed directly on the heart.

**Electrocardiogram**
Often called an EKG or ECG, it is a “picture” showing the electrical activity of the heart.

**Electrode**
The portion of the lead that transmits and records electrical signals to and from the heart.

**Electromagnetic Interference**
Also known as EMI, this is magnetic or electrical interference from machines or devices which can interrupt the normal operation of a pulse generator.

**Electrophysiologist**
A doctor who specializes in diseases of the electrical system of the heart.

**Electrophysiology (EP) Test**
A test in which your electrophysiologist evaluates the electrical system of your heart. During this evaluation, the electrophysiologist may also cause your arrhythmia to occur. This is how ICDs and antiarrhythmic drugs are tested.
EMI
See “Electromagnetic Interference.”

Incision
A cut produced by a surgical instrument in order to perform surgery.

Lead
A special wire connected to the pulse generator and placed in or on the heart.

Pulse Generator
The part of the ICD system made up of the electronic circuitry and the batteries, which are packed and sealed in a metal container.

Sinoatrial (SA) Node
The small mass of special muscle tissue that generates a heart beat. It is located in the upper right chamber of the heart.

Thoracotomy
An incision made in the chest when performing heart or lung surgery.

Transvenous
To place something through a vein or the venous system.
Ventricles

The two lower chambers of the heart. These chambers pump the blood out of the heart into the body.

Ventricular Fibrillation

A quivering of the ventricles during which essentially no blood is pumped to the body. It can lead to death if an electrical shock is not quickly delivered to the heart to restore a normal heart beat.

Ventricular Tachycardia

A rapid beating of the ventricles. This rapid beating reduces the heart's pumping efficiency and can therefore lead to fainting, dizziness, weakness, blind spots, and unconsciousness. If this rhythm is not treated with medications or an electrical shock, it can lead to the more serious problem of ventricular fibrillation.
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