

# Implantable Cardioverter Defibrillator Surgery

## What is an implantable cardioverter defibrillator (ICD)?

The implantable cardioverter defibrillator (ICD) is a device designed to shock the heart back into a normal rhythm to prevent sudden death. It is a complex collection of electronic circuits, batteries, and electrodes small enough to be put under the skin. The ICD system consists of:

- a pacemaker
- a pulse generator that can send a powerful shock to the heart
- electrodes to sense the rhythm of the heart and to carry the shock to the heart muscle
- batteries that last 5 to 9 years, depending on how often it has to give a shock
- software to tell the ICD when to discharge.

## How do I prepare for ICD surgery?

If you need a minor pain reliever in the week before surgery, choose acetaminophen rather than aspirin, ibuprofen, or naproxen. This helps avoid extra bleeding during surgery. If you are taking daily aspirin for a medical condition, ask your provider if you need to stop taking it before your surgery.

Follow any instructions your healthcare provider may give you. If you are to have general anesthesia, eat a light meal, such as soup or salad the night before the procedure. Do not eat or drink anything after midnight and the morning before the procedure. Do not even drink coffee, tea, or water. Your healthcare provider will tell you which medicines to take that morning.

Follow your provider's instructions about not smoking before and after the procedure. Smokers heal more slowly after surgery. They are also more likely to have breathing problems during surgery. For this reason, if you are a smoker, you should quit at least 2 weeks before the procedure. It is best to quit 6 to 8 weeks before surgery. Also, your wounds will heal much better if you do not smoke after the surgery.

Your provider will discuss with you the best site for the ICD implant. Usually, ICDs are implanted below the collar bone on either the right or left side of the chest. The implant area will be shaved and cleaned prior to the procedure. An IV will be started the morning of your procedure. Blood work, chest X-ray, and EKG may be done, if not already done.

## What happens during the procedure?

Your healthcare provider will numb the site where the device will be placed. He or she will make a small cut in the skin. Small lead wires are passed through a vein to your heart and then tested to check their position in your heart. A little pocket is made under the skin for the pulse generator. The leads are connected to the pulse generator, and tested. The provider then closes the incision and programs the device.

### **What happens after the procedure?**

Recovery time after surgery to implant one of the newer ICD devices is quite short. Hospital stays are usually no more than overnight, and there is a quick return to your normal activities.

When you go home after ICD surgery, you should:

- Limit the use of your arm on the side of the device for the next 2 days.
- Avoid sudden, jerky movements with your arms or stretching or reaching over your head.
- Keep the incision clean and dry for 1 week.
- Avoid putting lotions or oils on the incision.
- Wear loose clothes over the incision.
- Avoid getting overly tired.

You may bathe right away, and shower in 1 week. Your provider will tell you how soon you may go back to work. It depends on your age and health condition. Your provider will also discuss driving with you. You may faint with arrhythmia before the device corrects the rhythm. Serious injury could occur if you faint while driving or swimming alone.

You will need regular follow-up visits to your healthcare provider so the device can be monitored. Monitoring shows whether the device is sensing the heartbeat properly, how many shocks have been delivered, and how much power is left in the batteries.

A problem with the device is that it sometimes gives shocks when you do not need them. You can feel each shock, even though it lasts only a very short time. Tell your provider about every shock you feel. When the batteries have run down, the pulse generator must be replaced. Replacement of the pulse generator requires only minor surgery.

When you have an ICD, you need to be aware of things that may interfere with ICDs:

- Keep your cell phone at least 6 inches away from your ICD. When your phone is turned on but not in use, do not

- carry it in your breast pocket.
- ICDs may not work properly near power-generating equipment, arc welding equipment, and powerful magnets. For example, magnetic resonance imaging (MRI) uses a powerful magnet to produce images of internal organs. The magnet can interrupt the pacing of ICDs.
  - X-rays generally appear to have no effect on ICDs, but radiation used to treat cancer may damage the circuits of the ICD.

Tell all your healthcare providers and dentists that you have an ICD.

Devices that generally do not damage ICDs include:

- electric drills
- electric blankets and heating pads
- electric shavers
- metal detectors
- microwave ovens
- televisions and remote controls.

Passing through the metal detector at airports will not damage an ICD, but the metal in it may sound the alarm. Be sure to carry an ID card with you that says you have an ICD.

### **When should I call my healthcare provider?**

Call your healthcare provider right away if your pulse becomes abnormally slow, fast, or irregular, or your original symptoms return.

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