

Implantable Cardioverter Defibrillators (ICDs)

What is an implantable cardioverter defibrillator (ICD)?

The implantable cardioverter defibrillator (ICD) is a device that can prevent sudden death by shocking the heart back to a normal rhythm. The device is put under the skin in the chest. Wires connect it to the heart.

How does it work?

The ICD system consists of:

- A pulse generator that can send a powerful shock to the heart. The pulse generator also contains a pacemaker; batteries that last 5 to 9 years, depending on how often the device gives shocks; and software to tell the ICD when to give a shock.
- Electrodes to sense the rhythm of the heart and to carry the shock to the heart muscle.

When the heart is beating normally, the ICD does nothing. If the ICD detects an abnormally fast heart rate, called ventricular tachycardia, the pacemaker will first try to control the heart rhythm. If this doesn't work, or the rhythm gets worse (ventricular fibrillation), the ICD sends electric shock signals to the heart. The electric shock changes the abnormal rhythm to a normal rhythm.

When is it used?

ICDs may be life-saving if you have a fast heart rhythm (arrhythmia) that can cause sudden death. They may also be used if you have not had these dangerous heart rhythms but are at high risk of having them. You may be at high risk if you have had a heart attack or have a problem in the heart muscle.

What are the risks and benefits?

There is risk with every treatment or procedure. Talk to your provider about how the risks apply to you. Once the ICD is put in, you will need regular checkups to make sure the device is working right and to see how much power is left in the batteries.

The most common 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 is a short procedure because the wires stay in place.

The ICD does not fix existing heart problems, but lowers the risk of dying from an abnormal heart rhythm. The ICD can provide peace of mind and help you live longer.

What happens after ICD implantation?

Recovery time after surgery to put an ICD in your chest is quite short. You will usually stay overnight in the hospital. Avoid sudden, jerky movements with your arms or stretching or reaching over your head. Your provider will tell you when you can return to your usual activities. Follow your provider's advice about medicine, diet, and exercise.

How can I take care of myself when I have an ICD?

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.

[Related Topics]
Electrophysiologic Study

Implantable Cardioverter Defibrillator Surgery

Written by Donald L. Warkentin, MD.

Published by RelayHealth.

© 2008 RelayHealth and/or one of its affiliates. All Rights Reserved.

This content is reviewed periodically and is subject to change as new health information becomes available. The information is intended to inform and educate and is not a replacement for medical evaluation, advice, diagnosis or treatment by a healthcare professional.