

# ICD and AED

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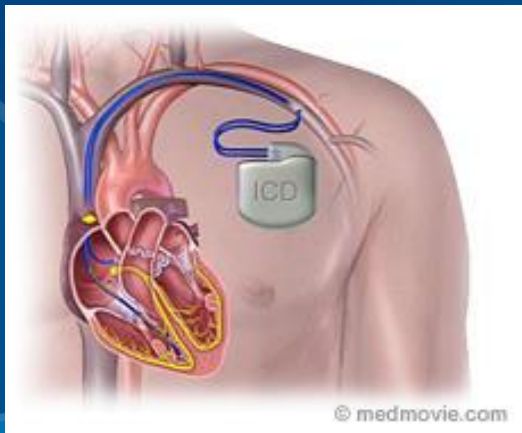
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# Implantable Cardioverter Defibrillator (ICD)

ICDs are useful in preventing sudden death in patients with known, sustained ventricular tachycardia or fibrillation.

Studies have also shown ICDs to have a role in preventing cardiac arrest in high-risk patients who haven't had, but are at risk for, life-threatening ventricular arrhythmias.

Newer-generation ICDs may have a dual function which includes the ability to serve as a pacemaker. The pacemaker feature would stimulate the heart to beat if the heart rate is detected to be too slow.



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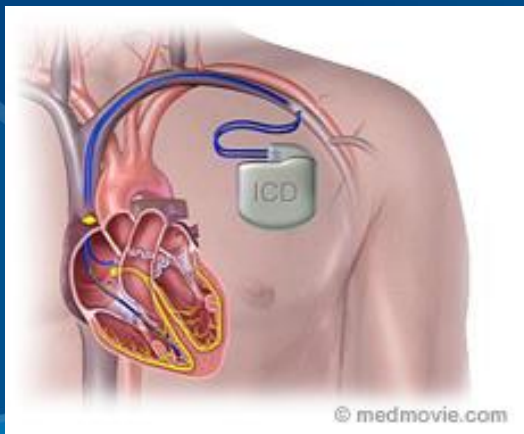
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# What is an ICD?

An ICD is a battery-powered device placed under the skin that keeps track of the heart rate. Thin wires connect the ICD to the heart.

If an abnormal heart rhythm is detected the device will deliver an electric shock to restore a normal heartbeat if your heart is beating chaotically and much too fast. ICDs have been very useful in preventing sudden death in patients with known, sustained ventricular tachycardia or fibrillation.

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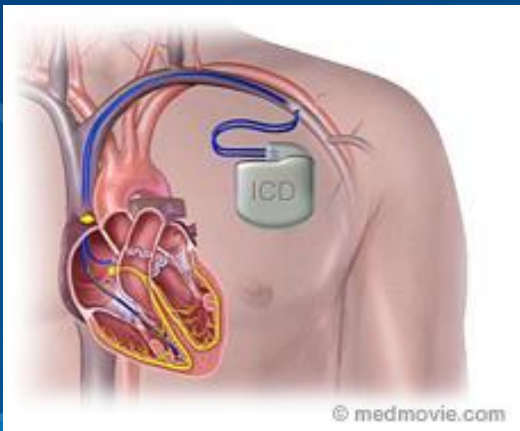


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# Why do I need an ICD?

Your doctor may recommend an ICD if you or your child is at risk of a life-threatening ventricular arrhythmia because of having:

- Had a ventricular arrhythmia
- Had a [heart attack](#)
- Survived a sudden [cardiac arrest](#)
- [Long QT syndrome](#)
- Brugada syndrome
- A [congenital heart disease](#) or other underlying conditions for sudden cardiac arrest



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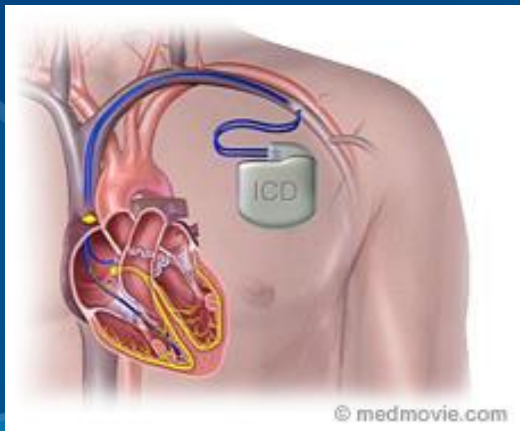
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# How is an ICD implanted?

A battery-powered pulse generator is implanted in a pouch under the skin of the chest or abdomen, often just below the collarbone.

The generator is about the size of a pocket watch.

Wires or leads run from the pulse generator to positions on the surface of or inside the heart and can be installed through blood vessels, eliminating the need for open-chest surgery.



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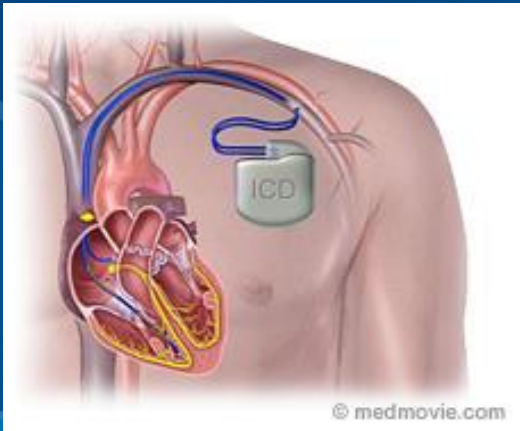
# How does an ICD work?

It knows when the heartbeat is not normal and tries to return the heartbeat to normal. If your ICD has a pacemaker feature when your heartbeat is too slow, it works as a pacemaker and sends tiny electric signals to your heart.

When your heartbeat is too fast or chaotic, it gives defibrillation shocks to stop the abnormal rhythm.

It works 24 hours a day.

New devices also provide “overdrive” pacing to electrically convert a sustained [ventricular tachycardia](#) (fast heart rhythm) and "backup" pacing if [bradycardia](#) (slow heart rhythm) occurs. They also offer a host of other sophisticated functions such as storage of detected arrhythmic events and the ability to perform [electrophysiologic testing](#). Stored information can help your doctor optimize the ICD for your needs.



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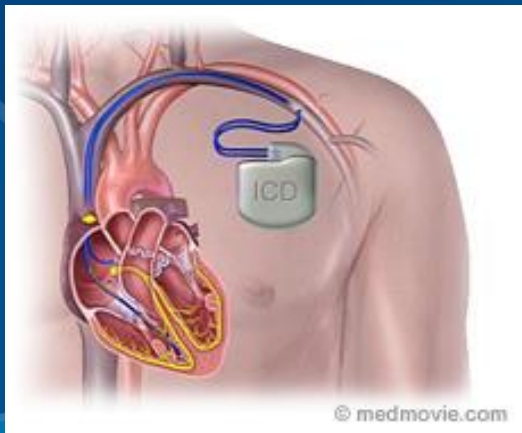
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# What is an AED?

An automated external defibrillator (AED) is a lightweight, portable device that delivers an electric shock through the chest to the heart. The shock can potentially stop an irregular heart beat (arrhythmia) and allow a normal rhythm to resume following sudden cardiac arrest (SCA). SCA occurs when the heart malfunctions and stops beating unexpectedly. If not treated within minutes, it quickly leads to death.

Most SCAs result from ventricular fibrillation (VF). VF is a rapid and unsynchronized heart rhythm that originates in the heart's lower chambers (the ventricles). The heart must be "defibrillated" quickly, because a victim's chance of surviving drops by seven to 10 percent for every minute a normal heartbeat isn't restored.



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# How does an AED work?

A built-in computer checks a victim's heart rhythm through adhesive electrodes. The computer calculates whether defibrillation is needed. If it is, a recorded voice prompts the rescuer to press the shock button on the AED. This shock momentarily stuns the heart and stops all activity. It gives the heart the chance to resume beating effectively.

Audible prompts guide the user through the process.

AEDs advise a shock only for ventricular fibrillation or another life-threatening condition called pulseless ventricular tachycardia.



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# Who can use an AED?

Non-medical personnel such as police, re service personnel, ight attendants, security guards and other lay rescuers who have been trained in CPR can use AEDs.

Although formal training in the use of an AED is not required, it is recommended to help the rescuer increase their comfort and level of confidence. However, AEDs are intended for use by the general public. Most AEDs use audible voice prompts to guide the user through the process.



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# Where can I get AED Training?

The American Heart Association offers CPR and AED training through training centers. To locate a training center near you, call your nearest AHA office or 1-888-AHA-4CPR. You may also visit [heart.org/cpr](http://heart.org/cpr). Type in your ZIP code where requested on the home page to access information on training sites near you.



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