



Cheyenne Cardiology  
Associates

CHEYENNE REGIONAL  
MEDICAL CENTER

# ICD Defibrillation

Enhancing quality of life through excellence in cardiovascular care.

Cardiac arrest—the sudden failure of the heart to pump blood—claims about 335,000 lives each year in the United States, according to the American Heart Association.

The most common heart-rhythm disorders (arrhythmias) that lead to cardiac arrest are:

- Ventricular tachycardia — a dangerously fast heartbeat
- Ventricular fibrillation — a rapid and chaotic heartbeat that causes the ventricle to quiver ineffectively, unable to supply blood to your body

An implantable cardioverter-defibrillator (ICD) — a pager-sized device implanted in your chest like a pacemaker — may reduce your risk of dying of cardiac arrest by detecting and stopping these dangerous arrhythmias. An ICD continuously monitors your heartbeat and delivers precisely calibrated electrical shocks to restore a normal heart rhythm.

## Who needs an ICD

You're a prime candidate for an ICD if you've had ventricular tachycardia, survived a cardiac arrest or have need to leave right now to be done from here fainted



from a ventricular arrhythmia. You may also benefit from an ICD if you have:

- A history of coronary artery disease and prior heart attack that has led to a weak heart.
- A heart condition that involves abnormal heart muscle, such as enlarged (dilated cardiomyopathy) or thickened (hypertrophy cardiomyopathy) heart muscle.
- An inherited heart defect that

adversely affects your heart's electrical system. These include long QT syndrome, which can cause ventricular fibrillation and death even in young, active people with no signs or symptoms or heart problems, and other rare conditions such as Brugada syndrome and arrhythmogenic right ventricular dysplasia.

## Tests that help determine if an ICD is for you

To determine whether you need an ICD, your doctor may perform any of these diagnostic tests:

- Electrocardiography (ECG), a noninvasive test that measures your heart's electrical activity.
- Echocardiography, a noninvasive ultrasound test that shows how well your heart pumps blood.
- Electrophysiology study (EPS), a procedure during which electrodes are guided through blood vessels to your heart and used to test the function of your heart's electrical system, locate short circuits and identify

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## Cheyenne Cardiology Associates is dedicated to serving patients and regional partners through comprehensive cardiovascular care with expertise, innovation and compassion.

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your potential for heart-rhythm problems.

- Holter monitoring, a noninvasive test that requires you to wear a device that records your heart's electrical activity for 24 to 48 hours.
- Event recorder, a pager-sized device that records your heart activity. Unlike a Holter monitor, it doesn't operate continuously and you turn it on only when you feel your heart is beating abnormally.

### How ICDs work

You may have seen TV shows in which a hospital worker or paramedic "shocks" an unconscious person out of cardiac arrest with a pair of electrified paddles. An ICD does the same thing, only internally and automatically.

This small, battery-powered device is surgically placed under your skin, usually below your left collarbone. One or two flexible, insulated wires (leads) run from the ICD through your veins to the lower chambers of your heart.

Because the ICD is constantly on guard for abnormal heart rhythms and instantly attempts to correct them, it helps treat cardiac arrest even if you're hours away from the nearest hospital.



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