
Heart Failure: Should I Get an Implantable Cardioverter-Defibrillator (ICD)?

Key points to remember:

- Your doctor may suggest an ICD if you are at risk of having an abnormal heart rhythm that could cause sudden death. Test can show if you are at risk.
- Many medical facts play a role in whether you should get an ICD. For example, the amount of blood your heart pumps (ejection fraction) helps your doctor decide if an ICD is right for you. Your doctor also will consider other health problems you may have.
- An ICD constantly checks your heart rate and rhythm. It is designed to fix a dangerous abnormal heart rhythm and prevent sudden death.
- The shock from an ICD hurts briefly. It's been described as feeling like a punch in the chest. But, the shock is a sign that the ICD is doing its job to keep your heart beating. The ICD can also use painless electrical pulses to fix a heart rate that is too fast or too slow.
- Even with an ICD, your doctor may also advise you to take medicine to reduce your chance of having a deadly abnormal heart rhythm. Some abnormal heart rhythms may be fixed with a procedure called catheter ablation, which destroys some of the heart tissue where the abnormal rhythm starts.

How can heart failure affect heart rhythm?

When you have heart failure, the lower chambers of your heart (the ventricles) can't pump as much oxygen-rich blood as the body needs. Some people who have heart failure may also have abnormal heart rhythms that can cause sudden death.

The heart may beat so fast that the ventricles don't have time to fill with blood. This type of abnormal rhythm is called ventricular tachycardia. Sometimes the heart quivers, or flutters, and stops pumping blood. This is called ventricular fibrillation. If these abnormal rhythms are not fixed right away, the person may die.

How can an ICD help?

An implantable cardioverter-defibrillator (ICD) is a battery-powered device that can fix an abnormal heart rhythm and prevent sudden death. The ICD is placed inside the chest. It's attached to one or two wires (called leads) that go into the heart through a vein.

An ICD is always checking your heart rate and rhythm. If the ICD detects a life-threatening rapid heart rhythm, it tries to slow the rhythm to get it back to normal. If the dangerous rhythm does not stop, the ICD sends an electric shock to the heart to restore a normal rhythm. The device then goes back to its watchful mode.

An ICD can also fix a heart rate that is too fast or too slow, without using a shock. It can send out electrical pulses to speed up a heart rate that is too slow or it can slow down a fast heart rate by matching the pace and bringing the heart rate back to normal.

Before putting the ICD in your chest, your doctor will program it to send electrical pulses or a shock when needed. Whether you get pulses, or a shock depends on the type of problem that you have and how the doctor programs the ICD to respond to it.

In some people who have heart failure, the ventricles don't beat at the same time. If these people also have a risk for abnormal heart rhythms, they may get a device that combines an ICD and a biventricular pacemaker. This pacemaker is also called cardiac resynchronization therapy (CRT). This type of pacemaker uses electrical pulses to make the ventricles pump at the same time. The ICD part of the device can give a shock to fix an abnormal heart rhythm.

How does it feel to get a shock from an ICD?

The shock from an ICD hurts briefly. It's been described as feeling like a punch in the chest. The shock is a sign that the ICD is doing its job to keep your heart beating. You won't feel any pain if the ICD uses electrical pulses to fix a heart rate that is too fast or too slow.

There is no way to know how often a shock might occur. It might never happen.

It's possible that the ICD could shock your heart when it shouldn't. If that were to happen, you would have pain. The shock could make you fall out of bed, and that could injure you. You might also be afraid or worried about when the ICD might shock you again.

In rare cases, the shock could cause ventricular fibrillation. If this happened, the ICD would shock your heart again to stop the abnormal rhythm.

Many people say that they have a good quality of life with an ICD. But shocks – and the fear of shocks – can make some people worry too much. They may be afraid all the time that the ICD might shock them. This worry can reduce a person's quality of life.

How is the ICD placed?

Your doctor will put the ICD in your chest during minor surgery. You will not have open-chest surgery. You probably will have local anesthesia. This means that you will be awake but feel no pain. You also will likely have medicine to make you feel relaxed and sleepy.

Your doctor makes a small incision in your upper chest. He or she puts one or two leads (wires) in a vein and threads them to the heart. Your doctor will then connect the leads to the ICD. Your doctor programs the ICD and then puts it in your chest and closes the incision.

In some cases, the doctor may be able to put the ICD in another place in the chest so that you don't have a scar on your upper chest. This would allow you to wear clothing with a lower neckline and still keep the scar covered.

Most people spend the night in the hospital, just to make sure that the device is working and that there are no problems from the surgery.

You may be able to see a little bump under the skin where the ICD is placed.

Who might want an ICD?

An ICD often is placed in people with heart failure, who have survived a dangerous abnormal rhythm. The ICD would protect them if they get another abnormal heart rhythm.

It also may be offered to people with heart failure who haven't had an abnormal heart rhythm but are at risk for one.

You will have tests to see whether you are at risk for abnormal heart rhythms. These may include an electrocardiogram (EKG, ECG), an echocardiogram, or an electrophysiology study.

Your doctor will use these test results and your medical history to figure out if an ICD could help you. Your doctor will also rely on guidelines that help find out who might benefit from an ICD. These guidelines will likely change often, because experts are doing new research and creating new technology. You and your doctor can work together to decide whether you want to get an ICD.

Many medical facts play a role in whether you should get an ICD. Your doctor will look at whether:

- You're taking medication to treat heart failure and to prevent abnormal heart rhythms.
- You're expected to live more than 1 year.
- Your ejection fraction is lower than normal.
- You have passed out from previous abnormal heart rhythms.
- You have had a heart attack.
- You have class II or III heart failure. This means that you have some trouble doing everyday activities because of your heart failure symptoms.

What are the benefits of an ICD?

An ICD can prevent sudden death from an abnormal heart rhythm. ICDs may also help people who have heart failure live longer. This benefit has been shown in people older than 65 years.

- ICDs can help lower the risk of dying suddenly from a heart problem. In studies, ICDs lowered the number of people who died because of a heart problem from about 16 out of 100 people to about 7 out of 100 people.
- ICDs might also help lower the risk of death from causes other than sudden cardiac death. In studies, ICDs lowered the number of people who died from any reason from about 30 out of 100 people to about 20 out of 100 people.
- An ICD combined with a pacemaker (cardiac resynchronization therapy, or CRT) can also help people live longer and stay out of the hospital.

What are the risks of an ICD?

There are several risks to getting an ICD. The risks are different for each person. The risk for problems associated with the implant procedure might be higher for people who are 80 years or older.

During the procedure: If problems happen during the procedure, doctors likely can fix them right away.

- Serious bleeding could occur after placement of the ICD. This happens 1 to 6 times out of 100. Serious bleeding doesn't happen 94 to 99 times out of 100.
- A lung could collapse (pneumothorax) from a buildup of air in the space between the lung and the chest wall. But a pneumothorax can be treated, and people recover well. This happens less than 1 time out of 100. This doesn't happen 99 times out of 100.

After the procedure: Problems after the procedure can be minor, like mild pain, or serious, like an infection. Your doctor can solve most of these problems and most people do not have long-term effects.

- Pain, bleeding, or bruising soon after the procedure.
- The leads that attach to the heart may break or stop working right. This can happen between 2 and 15 times out of 100, after 5 years of having the ICD. So, it does not happen about 85 – 98 times out of 100. But, the risk of a lead breaking or not working right appears to increase over time. One long-term study found that after 10 years, 20 out of 100 leads had problems. This also means that 80 out of 100 leads didn't have problems. If a lead does break or no longer works, you would need surgery. The surgery would be more complex than that needed to replace an ICD battery.
- You could get an infection where the ICD is placed. This happens about 1 to 2 times out of 100. So, there is no infection about 98 to 99 times out of 100.
- The ICD could shock the heart when it shouldn't. There is no way to know if or when this could happen. It may never happen.
- There is also a chance that manufacturer may recall an ICD for a problem. If this were to happen, you might need surgery to take out the ICD and leads.

Daily precautions: Some activities and situations can interrupt the signals sent by the ICD to the heart. You may need to adapt some of your activities. If you have an ICD, follow your doctor's specific instructions about care and precautions.

What follow-up do you need after getting an ICD?

You will need regular monitoring and check-ups with your doctor to make sure that the ICD is working.

It is important to keep taking medications for heart failure. You will need to follow a healthy lifestyle to treat heart failure. This may include watching how much fluid you consume, eating healthy foods that are low in sodium, and not smoking.

If the ICD gives you a lot of shocks, your doctor may prescribe the rhythm-control medicine, amiodarone. This medicine helps prevent abnormal heart rhythms and may keep the ICD from sending shocks too often. Your doctor may also suggest catheter ablation to lower the number of times the ICD shocks you. Catheter ablation can lower the chance of

some abnormal heart rhythms, such as atrial fibrillation or ventricular tachycardia. These rhythms can cause the ICD to shock you.

ICDs run on a battery that lasts from 5 to 8 years. To replace the battery, you will need minor surgery.

If you get an ICD, you may have to be careful not to get too close to some devices with strong magnetic or electrical fields. These include MRI machines, battery-powered cordless power tools, and CB or HAM radios. Most everyday appliance are safe.

COMPARE:		
	Get an ICD	Don't Get an ICD
What is usually involved?	<ul style="list-style-type: none"> Your doctor will numb the area with local anesthesia You probably will spend the night in the hospital, just to make sure that there are no problems You would need to have minor surgery to replace the battery after 5 to 8 years You keep taking your heart failure medication and follow a healthy lifestyle 	<ul style="list-style-type: none"> You keep taking your heart failure medication and follow a healthy lifestyle In some cases, you may be able to have a catheter ablation to fix an abnormal heart rhythm You may take a rhythm-control medication to prevent abnormal heart rhythms
What are the benefits?	<ul style="list-style-type: none"> An ICD may lower the risk of sudden death in people who have heart failure An ICD can fix a heart rate that is too fast or too slow without using a shock You may have peace of mind that a dangerous heart rhythm could be fixed right away 	<ul style="list-style-type: none"> You avoid the risks of surgery You won't worry about when the ICD might shock you
What are the risks and side effects?	<ul style="list-style-type: none"> Problems can happen during or soon after the procedure to place the ICD – Examples include a lead tearing the heart or a lung collapsing The manufacturer could recall an ICD for a problem – If this were to happen, you might need surgery to remove the ICD and leads The shock from an ICD hurts briefly If the ICD gives you too many shocks, you may also need to take a rhythm-control medication or have catheter ablation 	<ul style="list-style-type: none"> You could have an abnormal heart rhythm that could cause sudden death