



MDwise

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You may want to have a say in this decision, or you may simply want to follow your doctor's recommendation. Either way, this information will help you understand what your choices are so that you can talk to your doctor about them.

Heart Failure: Should I Get a Pacemaker (Cardiac Resynchronization Therapy)?

Here's a record of your answers. You can use it to talk with your doctor or loved ones about your decision.

1. Get the facts
2. Compare your options
3. What matters most to you?
4. Where are you leaning now?
5. What else do you need to make your decision?

1. Get the Facts

Your options

- Get a pacemaker for heart failure.
- Don't get a pacemaker for heart failure.

A pacemaker for heart failure is used for cardiac resynchronization therapy (CRT). This type of pacemaker is different from pacemakers used to treat other heart rhythm problems, such as bradycardia. This topic is only about pacemakers for heart failure. You might hear it only called cardiac resynchronization therapy, or CRT.

Key points to remember

- A pacemaker for heart failure, also called cardiac resynchronization therapy or CRT, can help you feel better so you can do your daily activities.
- A pacemaker can slow down the progression of heart failure. It may help keep you out of the hospital and help you live longer.
- If you get a pacemaker, you still need to take medicines for heart failure. You'll also need to follow a healthy lifestyle to help treat heart failure. This may include watching how much fluid you drink, eating healthy foods that are low in salt, and not smoking.

- Heart experts have guidelines about who might need a pacemaker. Talk to your doctor about the reasons that you might need one. For example, a pacemaker may be a good choice if you have moderate or severe heart failure and your heart's ventricles don't pump at the same time.
- A pacemaker sends electrical pulses to your heart to help it work better. You can't feel the pulses.
- There can be problems from having a pacemaker placed in your chest. The wires (called leads) that connect the pacemaker to your heart can move from the spot where they were placed. You could get an infection where the pacemaker was placed. Or the pacemaker or leads might not work.

FAQs

How does the pacemaker work?

When you have heart failure, the lower chambers of your heart (See figure 1 in appendix) (the ventricles) aren't able to pump as much blood as your body needs. Sometimes, the ventricles also don't pump at the same time.

Cardiac resynchronization therapy (CRT) uses a special type of pacemaker called a biventricular pacemaker (See figure 2 in appendix) (say "by-ven-TRICK-yuh-ler") to treat heart failure. This pacemaker sends electrical pulses to make the ventricles pump at the same time. This can help the heart pump blood better.

The pacemaker connects to three thin wires, called leads. The leads go into different chambers of your heart. If there is a problem with your heartbeat, the pacemaker sends a painless signal through the leads to fix the problem. The pacemaker also can speed up your heart if it is beating too slowly.

In some cases, you may get a pacemaker for heart failure that is combined with a device to shock your heartbeat back to a normal rhythm if it is dangerously fast. The device is called an implantable cardioverter-defibrillator, or ICD. It can prevent sudden death.

How is the pacemaker placed?

Your doctor will put the pacemaker 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 cut (incision) in your upper chest. In some cases, the pacemaker can be placed lower in the chest. This would allow you to wear clothing with a lower neckline and still keep the scar covered. The doctor puts the leads in a vein and threads them to the heart. Then your doctor connects the leads to the pacemaker. Your doctor puts the pacemaker in your chest and closes the incision. Your doctor also programs the pacemaker.

It can take about 2 to 3 hours to place the pacemaker.

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. But sometimes the procedure is done as an outpatient procedure, which means you don't need to stay overnight in the hospital.

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

Who can have a pacemaker for heart failure?

Whether a pacemaker for heart failure is right for you depends on many medical facts. Your doctor will check many things including:¹

- How bad your symptoms are and if you have trouble doing everyday activities. Heart failure is grouped—or classified—according to symptoms. Your doctor will probably talk about your heart failure "class" number, which will be between I and IV.
- Your ejection fraction. This is a measure of how much blood your left ventricle pumps.
- Your heart's electrical system. You will likely have tests to check for heart rhythm problems.

What are the benefits of having a pacemaker for heart failure?

A pacemaker can help your heart pump blood better. It may help you feel better so you can be more active. It also may help keep you out of the hospital and help you live longer.

A pacemaker can slow the progression of heart failure. It can do this by helping the heart's electrical system work well and by changing the shape of your heart. In heart failure, the left ventricle often gets too big as it tries to make up for not pumping well. The pacemaker can slow down this change in your ventricle. It might even help your ventricle go back to a more normal size.

- A large study found that 19 out of 100 people who were treated with a pacemaker for heart failure had to go into the hospital during the study because of heart failure. But 27 out of 100 people treated with medicine alone had to go into the hospital for heart failure.²
- In the same study, 13 out of 100 people who got a pacemaker for heart failure died during the study, compared with 16 out of 100 who got only medicine.²
- The combination of a pacemaker and an ICD (implantable cardioverter-defibrillator) can also help people live longer and stay out of the hospital.³

What are the risks of having a pacemaker for heart failure?

There are several risks to getting a pacemaker. But risks vary for each person.

You will see your doctor regularly to check your pacemaker and make sure you don't have any problems.

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

- A lung could collapse (pneumothorax). This happens if air builds up in the space between the lung and the chest wall. But a pneumothorax can be treated and people recover well. This might happen about 1 time out of 100. So about 99 times out of 100, no problems happen.⁴

- The pacemaker might not be able to be implanted for several reasons, such as when a vein near the left ventricle is too small, too wide, or too hard to reach to allow a lead to be placed. Sometimes the chest or heart may be too big to place a lead. The chance that a doctor can't place the pacemaker is about 8 out of 100. That means the pacemaker can be placed 92 times out of 100.⁴
- Problems during and after the procedure might happen about 4 times out of 100. That means problems do not happen about 96 times out of 100.²

After the procedure. Problems after the procedure can be minor, like mild pain, or serious, like an infection. But your doctor can solve most of these problems. And most people do not have long-term issues with their pacemakers.

Problems include:

- Pain, bleeding, or bruising soon after the procedure.
- Infection in your chest near the pacemaker. An infection might happen about 1 time out of 100. This means that about 99 times out of 100 there is no infection.⁶
- The pacemaker or leads might not work. Within one year of getting the pacemaker, these problems might happen about 5 to 7 times out of 100. So 93 to 95 times out of 100 the problems do not happen, and the pacemaker and leads do work.²

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

2. Compare your options

	Get a pacemaker	Don't get a pacemaker
What is usually involved?	<ul style="list-style-type: none"> ▪ The doctor will numb the area so you won't feel pain. (This is not open-chest surgery.) ▪ It can take up to 2 to 3 hours to place the pacemaker. ▪ You may spend the night in the hospital to make sure that the device is working and that there are no problems. ▪ You will need regular checkups to make sure that the pacemaker is working and to adjust the pacing, if needed. ▪ You still need to take medicines for heart failure. ▪ You still have to eat healthy foods and exercise as your doctor advises. You also may need to limit salt and fluids. 	<ul style="list-style-type: none"> ▪ You take medicines for heart failure. Your doctor may change the type or dose of your medicines. ▪ You have to eat healthy foods and exercise as your doctor advises. You also may need to limit salt and fluids. ▪ You may have to see your doctor often to check your symptoms and how your medicine is working.
What are the benefits?	<ul style="list-style-type: none"> ▪ A pacemaker can slow the progression of heart failure. ▪ It can help you feel better so you can be more active. ▪ It can help keep you out of the hospital and help you live longer. 	<ul style="list-style-type: none"> ▪ You won't have the risk of infection or other problems from the surgery. ▪ You won't have to think about safety around devices that could stop your pacemaker from working.
What are the risks and side effects?	<p>The risks from surgery are usually low. But they may be different for each person. Here are some possible risks:</p> <ul style="list-style-type: none"> ▪ Problems can happen during the procedure to place the pacemaker or soon after the procedure. One example is a lung collapsing. ▪ The doctor might not be able to place the pacemaker. For example, a vein could be too small to place a lead. 	<ul style="list-style-type: none"> ▪ Your symptoms could get worse. This would limit your ability to do your daily activities. ▪ If your heart failure gets worse, you may have to go into the hospital a lot. ▪ You might not live as long as you could if you had a pacemaker.

	<ul style="list-style-type: none">▪ There might be problems with the pacemaker. Examples include an infection or leads that don't work.▪ Some devices with strong magnetic or electrical fields could stop the pacemaker from working. You need to avoid MRI machines (unless your pacemaker is safe for an MRI), battery-powered cordless power tools, and CB or ham radios. But most everyday appliances and electronic devices are safe.▪ You will need surgery to replace the battery, which lasts 8 to 10 years.	
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Personal stories

Personal stories about getting a pacemaker for heart failure

These stories are based on information gathered from health professionals and consumers. They may be helpful as you make important health decisions.

"I have a hard time getting my chores done around the house or going grocery shopping. I get really short of breath after walking for a few minutes. My doctor says a pacemaker could help me feel better."

— Jack, age 66

"I had a heart attack a while ago, and now I have heart failure. My doctor says that a pacemaker might help me in the long run. But I don't really have symptoms. I can still work and take my daily walks with no problem. I'm more worried about having the device in my body. So I don't want it right now."

— Serena, age 55

"My girlfriends and I go on a big trip every year. We visit museums and take long walks. I want to keep doing these trips for a long time. So I'm getting the pacemaker. I want to do everything I can so that my heart failure doesn't get worse anytime soon."

— Patty, age 72

"My heart failure is getting a little worse. I can't play a whole round of golf anymore. My doctor and I talked about a pacemaker. But I'm scared of having one of those. I don't like the idea of wires in my heart. I told my doctor that I want to keep taking my medicine and follow my diet to see if that helps. If my heart failure gets worse, I'll look again at getting a pacemaker."

3. What matters most to you?

Your personal feelings are just as important as the medical facts. Think about what matters most to you in this decision, and show how you feel about the following statements.

Reasons to get a pacemaker				Reasons not to get a pacemaker			
I want to do everything I can to slow down this disease.				I'm afraid of having problems with the device later on.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More important		Equally important				More important	
I have a lot of symptoms from heart failure. I want to feel better and be able to do more.				I feel pretty good, and I'm not having too much trouble doing my daily activities.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More important		Equally important				More important	
I don't mind having a device in my chest.				I don't like the idea of having a device in my chest.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More important		Equally important				More important	
I'm not worried about risks from surgery.				I don't want to take a chance that something could go wrong during surgery.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More important		Equally important				More important	
My other important reasons:				My other important reasons:			

More important	Equally important				More important	

4. Where are you leaning now?

Now that you've thought about the facts and your feelings, you may have a general idea of where you stand on this decision. Show which way you are leaning right now.

Getting a pacemaker	NOT getting a pacemaker					
Leaning toward	Undecided				Leaning toward	

5. What else do you need to make your decision?

Check the facts

1. I don't need a pacemaker if I have mild heart failure and can still do my daily activities.

- True
- False**
- I'm not sure

That's right. A pacemaker might be right for you even if you have mild symptoms. The pacemaker may slow the progression of heart failure. Your doctor can help you know if a pacemaker might help you.

2. A pacemaker could help me stay out of the hospital and live longer.

- True**
- False
- I'm not sure

That's right. A pacemaker for heart failure can help you stay out of the hospital and live longer.

3. If I get a pacemaker, I still need to take medicines for heart failure and follow a healthy lifestyle.

- True**

False

I'm not sure

You're right. You still need to take your medicines for heart failure and follow a healthy lifestyle. This may include watching how much fluid you drink, eating healthy foods that are low in salt, and not smoking.

Decide what's next

1. Do you understand the options available to you?

Yes

No

2. Are you clear about which benefits and side effects matter most to you?

Yes

No

3. Do you have enough support and advice from others to make a choice?

Yes

No

Certainty

1. How sure do you feel right now about your decision?				
Not sure at all		Somewhat sure		Very sure

2. Check what you need to do before you make this decision.

I'm ready to take action.

I want to discuss the options with others.

I want to learn more about my options.

Use the following space to list questions, concerns, and next steps.

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Credits

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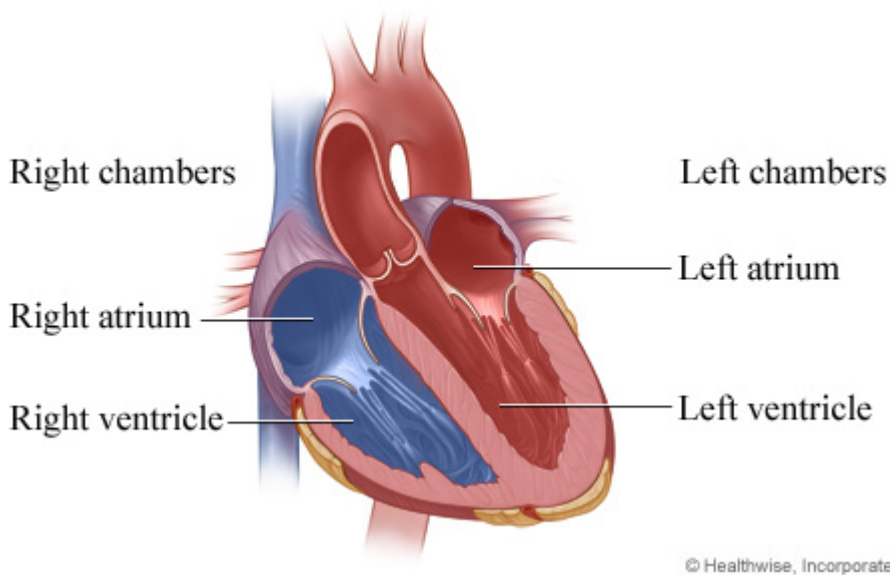
Note: The "printer friendly" document will not contain all the information available in the online document some information (e.g. cross-references to other topics, definitions or medical illustrations) is only available in the online version.

Appendix

Topic Images

Figure 1

Chambers of the heart

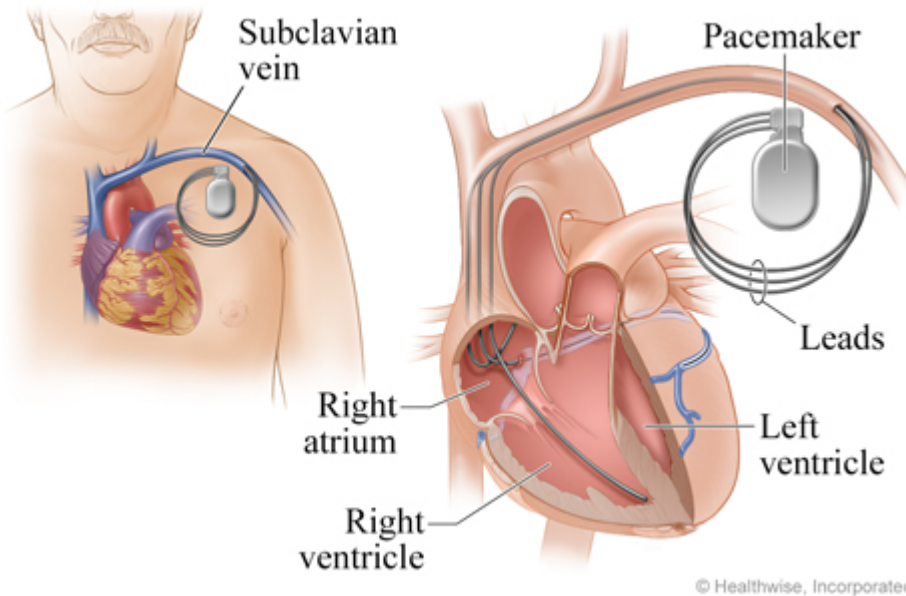


The heart has four chambers: two atria and two ventricles.

- The right atrium receives oxygen-poor blood from the body and pumps it to the right ventricle.
- The right ventricle pumps the oxygen-poor blood to the lungs.
- The left atrium receives oxygen-rich blood from the lungs and pumps it to the left ventricle.
- The left ventricle pumps the oxygen-rich blood to the body.

Figure 2

Biventricular pacemaker for heart failure (cardiac resynchronization therapy)



A pacemaker for heart failure, used for cardiac resynchronization therapy (CRT), sends electrical pulses to the heart to keep the lower chambers (the ventricles) pumping together. This type of pacemaker is also called a biventricular pacemaker.

A doctor places the pacemaker in the chest. The pacemaker has three wires, or leads, that connect to the

heart through the subclavian vein. One lead is in the right atrium (upper chamber). A second lead is in the right ventricle. The third lead is in a vein on the outside of the left ventricle. This vein is called the coronary sinus branch vessel.



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