A decision aid for Cardiac Resynchronization Therapy with Defibrillation (CRT-D)

For patients with heart failure who getting cardiac resynchronization therapy and considering defibrillation

What is CRT?
Sometimes the heart pumps poorly. In other words, the heart beats out of sync. This can be caused by damage to the heart, age, genetics, certain medicines, and other reasons. CRT helps the heart pump normally by helping the right and left ventricles of the heart pump together. To do this, special wires are placed in the heart to pace the heart muscle in a specific way that improves the pumping function.

What is a CRT-D?
A CRT-D is a small device that combines cardiac resynchronization therapy with defibrillation. It is placed under the skin of the chest. Wires (called “leads”) connect the CRT-D to the heart. A CRT-D is designed to prevent an at-risk person from dying suddenly from a dangerous heart rhythm. CRT-Ds sense dangerous rhythms and treat them right away. The CRT-D uses pacing or an electrical shock to stop a dangerous heart rhythm and change it to a normal heart rhythm. This happens much faster than a person could get to the hospital for treatment.

Your Decision
You and your doctor can decide together if you would like to have a CRT implantation to help treat your heart failure. However, there is another important part of this decision. Patients with heart failure may be at risk for sudden dangerous heart rhythms. These heart rhythm abnormalities may be life-threatening, and in some cases can cause a cardiac arrest. The best treatment for these dangerous heart rhythms is a “defibrillator.” This is a device that can sense these heart rhythms and deliver a shock to your heart if you need it. CRT can be combined with a defibrillator. This combination is sometimes abbreviated “CRT-D.”
Is CRT with defibrillation right for me?

Hearing about dangerous heart rhythms and sudden cardiac death can be scary. It can be difficult to think about the end of our lives. You may be thinking “I've never had a dangerous heart rhythm, so why should I get a CRT-D?” This is a great question. Other people like you facing this decision have wanted more information.

CRT is an important therapy that can help some patients feel better. One big decision that some patients getting a CRT face is whether or not to also get the defibrillator. For these patients, it may be very helpful for them to think about what their life may be like with or without defibrillation. Consider two possible paths:

Path 1
You may choose to get a CRT-D. You may be feeling like you usually do, then a dangerous heart rhythm could happen. The CRT-D may help you live longer by treating a dangerous heart rhythm. You will continue to live with heart failure that may get worse over time.

“T’m not ready to die. I have so much to live for. Even if it means getting shocked, I’m willing to do anything that can help me live longer.”

Path 2
You may choose to get CRT without defibrillation. You may be feeling like you usually do and then a dangerous heart rhythm could happen. You may die quickly from the dangerous heart rhythm.

“The idea of dying quickly sounds painless. I’ve always said I hope to die in my sleep. Going through surgery and getting shocked is not something I want.”
Does getting a CRT-D require surgery?
Yes, the CRT-D is put under the skin and one or more wires (called “leads”) are put into the heart. The surgery takes a few hours. You may stay in the hospital overnight.

Will a CRT-D make me feel better?
The defibrillator will not make you feel better. However, the cardiac resynchronization therapy may make you feel better. Learn more about this on page 5.

What are the risks of getting a CRT-D?
Problems do occur:
- 4 out of every 100 patients will experience some bleeding after surgery.
- 2 out of every 100 patients will have a serious problem like damage to the lung or heart.
- About 1 out of every 100 patients will develop an infection.
- Some patients develop anxiety or depression from being shocked.

How does it feel to receive a shock?
Patients say that getting shocked is like “being kicked in the chest.” Some patients pass out before they are shocked and do not remember being shocked. Before a shock is delivered, the CRT-D will try to correct your dangerous heart rhythm.
Would I survive a dangerous heart rhythm without the defibrillator (CRT-D)?

You may survive a dangerous heart rhythm only if you are treated within a few minutes with an external shock. However, many patients die before emergency help can reach them.

Will I live longer with a CRT-D?*

**Without a CRT-D:** Patients without a CRT-D are more likely to die suddenly from a dangerous heart rhythm. Without a CRT-D, over 5 years, 36 out of every 100 patients with heart failure will die over a 5-year period.

**With a CRT-D:** Patients with a CRT-D are less likely to die suddenly of a dangerous heart rhythm. With a CRT-D, 29 out of every 100 patients with heart failure will die over a 5-year period. This means 7 more patients would live with a CRT-D over a 5-year period.

### What are the benefits of getting a CRT with defibrillation (CRT-D)

Results from a 5-year study*

<table>
<thead>
<tr>
<th></th>
<th>Number of people who live because of the CRT-D</th>
<th>Number of people who die for any reason</th>
<th>Number of people not affected</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No CRT-D</strong></td>
<td>64</td>
<td>36</td>
<td>71</td>
</tr>
<tr>
<td><strong>Yes CRT-D</strong></td>
<td>71</td>
<td>29</td>
<td>64</td>
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Benefits of CRT

CRT is being recommended to you because people with heart failure often experience shortness of breath, leg swelling, and tiredness. Studies have shown that some people with CRT experience improvement in these symptoms. For example, some people notice they can walk farther with CRT. Even with CRT, however, you still have heart failure and are at risk for sudden cardiac death.

More Considerations

Can the CRT-D be taken out?
It is best not to remove the CRT-D unless you have an infection or are having the CRT-D replaced.

Can the CRT-D be turned off?
Yes. It is possible to turn off the defibrillator of the CRT-D without surgery. You may keep the resynchronization therapy turned on. In patients who are close to death, the defibrillator is often turned off so that it will not shock them. Some patients may choose to have it turned off because they no longer want to prevent sudden death.

Your values and wishes

On a Scale...
While no one can predict the future, if you were able to choose, how would you like to live out the rest of your life? (check one box)

Die quickly (for example, dying suddenly in your sleep) and not live as long.

Live as long as possible even with an illness like heart failure that may get worse over time.
## In Summary

<table>
<thead>
<tr>
<th>FAQ</th>
<th>Implant an CRT-D</th>
<th>Implant CRT Only</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What does a CRT-D do?</strong></td>
<td>A CRT-D may stop a dangerous heart rhythm that could cause sudden death by giving an electrical shock to the heart.</td>
<td>Without defibrillation, you will have a higher risk of dying suddenly if a dangerous heart rhythm happens.</td>
</tr>
<tr>
<td><strong>What is involved?</strong></td>
<td>A CRT-D is put under the skin of your chest and wires (“leads”) go into your heart. You will probably stay one night in the hospital. In about 5–10 years, when the battery runs out, the CRT-D will need to be replaced.</td>
<td>The procedure to place a CRT is the same as a CRT-D.</td>
</tr>
<tr>
<td><strong>Will I live longer with an CRT-D?</strong></td>
<td>Patients with a CRT-D are less likely to die suddenly of a dangerous heart rhythm. With a CRT-D, 29 out of 100 patients with heart failure will die over a 5-year period. This is 7 fewer deaths than if they did not have a CRT-D.</td>
<td>Patients without a CRT-D are more likely to die suddenly from a dangerous heart rhythm. Without a CRT-D, 36 out of 100 patients with heart failure will die over a 5-year period.</td>
</tr>
<tr>
<td><strong>Will I get shocked by the CRT-D? What will that feel like?</strong></td>
<td>Over 5 years, 20 out of every 100 patients who have a CRT-D will get a shock. 80 out of 100 patients will not get shocked.</td>
<td>You will not get a shock from a CRT-D.</td>
</tr>
<tr>
<td><strong>What are the risks of getting an CRT-D?</strong></td>
<td>4 out of every 100 patients will have some bleeding. 2 out of every 100 patients will have a serious problem, such as damage to the lung, a heart attack, or a stroke. 1 out of every 100 patients will get an infection, which may require removing the CRT-D. <strong>NEED TEXT FOR THIS</strong></td>
<td><strong>NEED TEXT FOR THIS</strong></td>
</tr>
<tr>
<td><strong>Will a CRT-D improve my symptoms?</strong></td>
<td>The defibrillator itself will not improve your heart failure symptoms.</td>
<td>CRT has been shown to improve shortness of breath, leg swelling, and tiredness.</td>
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<td><strong>Are there things I cannot do?</strong></td>
<td>This depends on your heart problem. Talk to your doctor about driving limitations and other activities.</td>
<td>Even without a CRT-D, talk with your doctor about driving limitations and other activities.</td>
</tr>
<tr>
<td><strong>Can the CRT-D be taken out?</strong></td>
<td>It is best not to remove the CRT-D unless it gets infected or it is time to have it replaced when the battery runs out.</td>
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<td><strong>Can the CRT-D be turned off?</strong></td>
<td>Yes, the ICD can be turned off without surgery. This is recommended if a person is likely to die from another illness. <strong>NEED TEXT FOR THIS</strong></td>
<td><strong>NEED TEXT FOR THIS</strong></td>
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You are the expert on what is important for you. What else do you need to help you make your decision?

It may be helpful for you to talk with your family and friends. You may want to share the information in this decision aid with them. You should also share with your doctor your questions and concerns before making a final decision. It is important that you have all of the information you need to make a decision that is right for you. You have the right to make your own choices!

Questions...

What questions do you have?

Concerns...

You know what is important to you better than anyone else. Any decision about your treatment should be based on your goals and values!

Patients’ thoughts:

Jim: “The whole thing is just getting all the information from any source that you can. And take it all in and the final decision is up to you. You have to make that decision, not your doctor. And too many patients think the doctor is God, but the doctor doesn’t know your body the way you do. So the final decision is yours.”

Caroline: “First of all, I think it’s a very personal choice. I think everybody needs to make their own decision. But, I think it needs to be an informed decision.”

What else do you need to help you make your decision?

Life-size CRT-D images