

Cardiac MRI

What is a cardiac MRI test and why do I need it?

MRI (magnetic resonance imaging) uses radio waves and strong magnets to create images of your body tissues. During a cardiac MRI, the test takes a number of pictures of your heart. A computer combines them to create detailed pictures or movies. This test helps your doctor see if your heart is getting enough blood, if there are areas of heart muscle damage from previous heart attacks, or to diagnose other heart problems.

Cardiac MRI tests are safe and effective. An MRI test does not use x-rays, so it doesn't expose you to any radiation. Yet an MRI test may be able to provide more information than a traditional x-ray or CT scan.



During a cardiac MRI test, you'll lie on a special exam table surrounded by a large magnet. The test is painless and safe.

What do I need to do now?

Tell your doctor about:

- 1 Anything implanted in your body,** and about any surgeries or procedures you've had. This will help your doctor decide whether an MRI is right for you. An MRI test uses a powerful magnet, so surgical implants can interfere with the test or cause serious injury. Some of the implants that can cause problems include:
 - Inner ear implants
 - Some types of brain aneurysm clips
 - Nerve stimulators
 - Pacemakers or implantable cardiac defibrillators (ICDs)
- 2 Any symptoms you have during exercise,** such as heart rhythm problems, nausea, chest pain, or breathing problems.
- 3 If you feel anxious in enclosed places.** Depending on the type of MRI machine used for the test, your doctor may prescribe or give you a sedative, a medicine that helps you relax.
- 4 All the medicines you are taking.** This includes prescription medicines, over-the-counter drugs (such as allergy pills or cough syrup), patches, vitamins, and herbal remedies.

How do I get ready?

Tell the MRI technologist if you have any electronic devices or surgical implants in your body.

Take off your eyeglasses and any removable dental work, all jewelry and any other metal items, and change into a gown.

What can I expect during the test?

Depending on what the doctor is looking for, a cardiac MRI test takes about 60 minutes. Here's what you can expect:

- **You'll lie on a moveable exam table.** Pillows or straps may be used to help you remain in the correct position.
- **Patches will be attached to your chest to monitor your heartbeat.** If needed, an intravenous (IV) line will be placed in your wrist or arm so medicine and a contrast agent can be injected during the test.
- **You'll probably be alone in the MRI room during the test,** but the technologist will be able to see and hear you. If you have a question or you're uncomfortable, tell the technologist.
- **You'll need to lie as still as possible while the machine is recording images.** The technologist will tell you when you can move and when you need to lie still.
- **You will be asked to hold your breath briefly during the scan.** This helps to produce a clearer image.
- **During the scan, you will hear thumping, knocking, or humming that can sometimes be loud.** This is normal. You will be given earplugs to minimize the noise. You may also feel some warmth in the area being examined, but this is normal.

When should I call my doctor?

After the test, call your doctor if you have any of the following symptoms:

- Racing or fluttering heartbeat
- Chest pain
- Trouble breathing

For cardiac stress MRI:

You will be given medicine that will stress your heart and make you feel like you are exercising. You may also have some minor tingling, light-headedness, headache, or nausea. A healthcare provider will be in the room when the medicine is injected to make sure you are safe. **Tell them if you have chest pain, a fluttering heartbeat, trouble breathing, or sweating.** If necessary, medicine can be given to reverse any symptoms.

What happens after the test?

If you had an IV, it will be removed. If you had a sedative during the test, someone else should drive you home. You'll get the results in a follow-up appointment with your doctor.

If you are having a cardiac stress MRI:

- You will have an electrocardiogram (ECG or EKG) test to check your heart rhythm. This is a painless test that takes 5 to 10 minutes.
- The arm cuff, finger clip, electrodes, and IV line will be removed.
- You can usually go home the same day.
- You will get the results of your test in a follow-up appointment with your doctor.

What are the risks and benefits of cardiac MRI?

The table below lists the most common possible benefits, risks, and alternatives for cardiac MRI. There may be other benefits or risks in your unique medical situation. Talking with your doctor is the best way to learn about these risks and benefits. Be sure to ask any questions you may have.

Possible benefits	Risks and possible complications	Alternatives
<p>A cardiac MRI:</p> <ul style="list-style-type: none"> • Provides detailed images of your heart that can help your doctor diagnose heart problems • Does not involve radiation (x-rays) 	<p>Cardiac MRI tests are generally very safe. Potential complications include:</p> <ul style="list-style-type: none"> • Injury caused if the magnet reacts with metal in or on the body. If you have metal objects or certain types of devices implanted in your body, you may not be able to have an MRI. Tell your doctor about any surgeries or procedures you've had. • Symptoms caused by the medicine used to mimic stress on your heart. These can include facial flushing, nausea, dizziness or lightheadedness, mild headache, mild shortness of breath, fast or slow heartbeat, chest tightness, arm discomfort, or jaw discomfort. • Allergic reactions to the MRI contrast agent, if it is used. This is rare. 	<p>Alternatives to cardiac MRI depend on your situation and the information the doctor needs. They include other heart stress imaging tests, such as:</p> <ul style="list-style-type: none"> • Cardiac stress echocardiogram (heart ultrasound) • Stress electrocardiogram (ECG or EKG) • Nuclear stress test • Cardiac catheterization/angiogram • CT scan of the blood vessels that feed the heart

Where can I learn more?

You can learn more about cardiac MRI and how it is done at the following links:

- RadiologyInfo.org (radiologyinfo.org/en/info.cfm?pg=cardiacmr)
- National Heart, Lung, and Blood Institute (nhlbi.nih.gov/health-topics/cardiac-mri)
- American Heart Association (heart.org/en/health-topics/heart-attack/diagnosing-a-heart-attack/magnetic-resonance-imaging-mri)

My follow-up appointment

Date/Time: _____

Place: _____

Doctor: _____

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