

Procedures/Diagnostic Tests

Cardiac MRI (magnetic resonance imaging)

You have been scheduled for a cardiac MRI (magnetic resonance imaging). Cardiac MRI is a type of body scan that uses magnets and computers to make detailed pictures of your heart. For people with heart disease or symptoms of heart disease, it may be a helpful part of their diagnosis and treatment. This scan enables your doctor to learn more about your heart and blood vessels. MRI uses no ionizing radiation. With proper screening, this type of scanning is quite safe.

Preparation

Your doctor or nurse will explain cardiac MRI to you. When you understand fully what will happen, you will be asked to sign an informed consent. Your doctor will sign this form, as well. You will receive a copy of this document.

You will also be asked to fill out a safety questionnaire. This questionnaire helps us find out if there are safety reasons why you should not have cardiac MRI. The scan is not advisable if you have any of the following: cardiac pacemaker, implanted defibrillator, neural stimulators, aneurysm clips, cochlear (ear) implants, other implanted devices such as pumps or infusion devices, or metal fragments in the eye. The scan is also not advisable if you are pregnant.

If cardiac MRI is found to be suitable for you, please do the following before the scan:

- Remove all jewelry and any metal items you are wearing.
 - Avoid drinking carbonated drinks for 1 to 2 hours.
 - Avoid eating a large meal.
 - For your comfort, go to the bathroom.
 - Inform your doctor or nurse if you dislike close spaces or have back pain. Your health care team will make every effort to assure your comfort during this scan.
- A slender, I.V. (intravenous) tube may be placed into one of your arm veins. This will be used to give you fluids, medications, or contrast dye.

Procedure

Your vital signs will be monitored during the scan: patches on your chest will check your heartbeat, a cuff on your arm will measure your blood pressure, a clip on your finger will show how much oxygen is in your blood, and a rubber belt around your abdomen will track your breathing.

You will lie comfortably on a stretcher. Then, this stretcher will be moved into the scanner, which looks like a large tube and contains a magnetic field. There is an intercom inside, so you will be able to talk to the staff throughout the scan. Please let us know how you are feeling during the study.

When scanning starts, you will hear thumping sounds. These sounds are made by the magnetic fields. Earplugs or headphones will be given to you to muffle these sounds.

From time to time during the scan, you will be asked to hold your breath for 10 to 20 seconds. This helps the pictures come out clearer.

You may be given a medication called gadolinium, which brightens your heart or blood vessels in the pictures. You may also be given medications that make your heart work harder. These “stress tests” help blockages show up on images of your coronary arteries.

The scan will last from 1 to 2 hours.

Side effects

Most patients feel no side effects from cardiac MRI. Some people (about one in ten) feel claustrophobic (fear closed spaces).

Some patients may feel muscle twitching in their fingers and toes. This is caused by the magnetic fields. Please inform the technologist or the doctor if you feel such symptoms.

Side effects from the contrast agent gadolinium are rare, usually mild, and last for a short time. They include the following: coldness in the arm during the injection, headache, nausea, and a brief metallic taste in the mouth. More severe reactions (shortness of breath, wheezing, or lowering of blood pressure) have occurred in an extremely small percentage of patients.

After the procedure

When scanning is over, you may continue your usual activities. A report of your scan will be available for your doctor.

Special instructions

This information is prepared specifically for persons taking part in clinical research at the National Institutes of Health Clinical Center and may not apply to patients elsewhere. If you have questions about the information presented here, talk to a member of your health care team.

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