

For Our PATIENTS

U C L A Healthcare

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Cardiac MRI (MRI of the Heart, Great Vessels and Adjacent Structures)

What is a Cardiac MRI?

MRI (magnetic resonance imaging) uses radio waves and a strong magnetic field rather than X-rays to provide remarkably clear and detailed pictures of internal organs and tissues. The procedure is valuable in diagnosing a broad range of conditions in all parts of the body, including heart and vascular disease, stroke, cancer, and joint and musculoskeletal disorders.

What are some common uses of the procedure?

Magnetic resonance imaging is becoming very important in the initial diagnosis and subsequent management of coronary heart disease. MRI can help physicians to look closely at the structures and function of the heart and major vessels quickly and thoroughly, without the risks associated with traditional, more invasive procedures. Using MRI, physicians can examine the size and thickness of the chambers of the heart, and determine the extent of damage caused by a heart attack or progressive heart disease.

How should I prepare for the procedure?

Because the strong magnetic field used for MRI will pull on any iron-containing object in the body, MRI staff will ask whether you have a heart pacemaker or implanted defibrillator, implanted port, infusion catheter, intrauterine device (IUD), or any metal plates, pins, screws or surgical staples in your body. In most cases, surgical staples, plates, pins and screws pose no risk during MRI. Red dyes used in tattoos and permanent eyeliner may contain metallic iron oxide and could heat up during MRI; however, this is rare. You will be asked if you have ever had a bullet or shrapnel in your body, or ever. The radiologist or technologist may ask about drug allergies and whether you have undergone any surgery in the past. If you are or might be pregnant, mention it to the MRI staff.

What to expect — the day of your procedure:

The patient is placed on a sliding table and positioned comfortably for the MRI examination. The technologist will clean three small areas of your chest and place small, sticky electrode patches on these areas. (Men may expect to have their chest partially shaved to help the electrodes stick). The electrodes are attached to an electrocardiograph (ECG) monitor, which charts the heart's electrical activity during the test.

Then the radiologist and technologist leave the room and the individual MRI sequences are performed. The patient is able to communicate with the technologist at any time using an intercom. Also, many MRI centers allow a friend or, if a child is being examined, a parent to stay in the room.

Depending on how many images are needed, the exam will generally take from 15 to 45 minutes, although a very detailed study may take longer. You will be asked not to move during the actual imaging process. For examination of the heart, contrast material may be used to enhance the visibility of the heart's chambers and major vessels. A small needle connected to an intravenous line is placed in an arm or hand vein.

What will I experience during the procedure?

MRI causes no pain, but some patients find it uncomfortable to remain still during the examination. Others experience a sense of being closed in, though the more open construction of many new MR imaging systems has helped reduce that reaction. You may notice a warm feeling in the area under examination; this is normal, but tell the radiologist or technologist if it bothers you. If a contrast injection is used, there may be discomfort at the injection site, and you may have a cool sensation at the site during the injection. The loud tapping or knocking noises heard at certain phases of the imaging exam disturb some patients; earplugs may help.

Who interprets the results and how do I get them?

A radiologist, who is a physician experienced in MRI and other radiology examinations, will analyze the images and send a signed report with his or her interpretation to your primary care physician. Your physician will discuss the findings with you.