

The radiologist or technologist may ask if you have any 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. MRI is generally avoided in the first 12 weeks of pregnancy.

### How Does the Procedure Work?

MRI is a unique imaging method because, unlike the usual radiographs (x-rays), radioisotope studies, and even CT (computed tomography), the procedure does not rely on ionizing radiation. Instead, radio waves are directed at protons in a strong magnetic field.

Typically an MRI exam consists of two to six imaging sequences, each lasting two to 15 minutes. Each sequence shows a cross section of the body in one of several planes (right to left, front to back, upper to lower).

### How is the Procedure Performed?

You will be comfortably positioned on a special table that slides into the MRI system opening where the magnetic field is created. Then the radiologist and technologist perform the MRI sequencing at the control unit in an adjoining room. You will hear tapping noises during the exam. The tapping is created when magnetic field gradient coils are switched on and off to measure the MRI signal reflecting from your body. You will be able to communicate with the radiologist or technologist at any time by means of an intercom. Also, many MRI centers allow a parent or friend to stay in the room.

Depending on how many images are needed, the exam will generally take from 30 to 45 minutes, although a very detailed study may take longer. You will be asked to remain still during the actual imaging process, but some movement is allowed between sequences. Patients generally are required to remain still for only a few seconds to a few minutes at a time.

Depending on the part of your body being examined, a contrast material may be used to enhance the visibility of certain tissues or blood vessels. For this, a small needle connected to an intravenous line is placed in an arm or hand vein. The contrast material is injected about two-thirds of the way through the exam. MRI contrast material is less likely to produce an allergic reaction than the iodine-based materials used for conventional x-rays and CT scanning.

### What Will I Experience During the Procedure?

Some patients who undergo MRI in an enclosed unit may feel confined or claustrophobic, though the more open construction of newer MRI systems has done much to reduce that reaction. If you are not easily reassured, a sedative may be administered. Roughly one in 20 patients requires medication.

MRI causes no pain, but you may find it uncomfortable to remain still during the examination. You may notice a warm feeling in the area under examination; this is normal, but if it bothers you, tell the radiologist or technologist.

If an injection of contrast material is needed, there may be discomfort at the injection site, and you may have a cool sensation at the site during the injection. Most bothersome to many patients are the loud tapping or knocking noises heard at certain phases of imaging. 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's office will tell you how to obtain your results. At some facilities, new technology also allows for distribution of diagnostic reports and referral images over the Internet.

Like other physicians, a radiologist must have graduated from an accredited medical school, passed a licensing examination, and completed at least four years of residency. Radiologists are usually board certified by either the American Board of Radiology or the American Osteopathic Board of Radiology.

A *radiologic technologist* has undergone two to four years of formal training, leading to a certificate, associate's degree, or bachelor's degree. With additional training, a technologist can specialize and work almost exclusively with specialized radiographic equipment. The American Registry of Radiologic Technologists certifies radiologic technologists.

*For additional details about MRI of the musculoskeletal system and other radiological procedures, please visit [www.radiologyinfo.org](http://www.radiologyinfo.org) or consult your physician.*



[www.adclinic.com](http://www.adclinic.com)

## What is the MRI of the Musculoskeletal System?

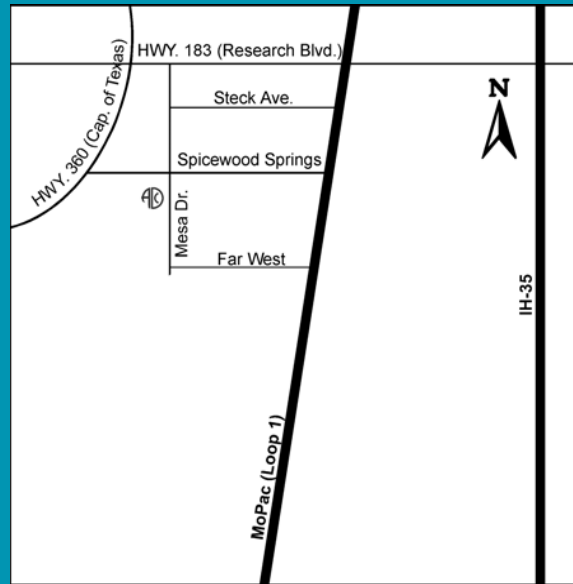
MRI uses radio waves and a strong magnetic field rather than x-rays to provide clear and detailed pictures of internal organs and tissues. The parts of the musculoskeletal system that are most frequently imaged with MR are the knee and shoulder. However, MRI has also been used to study almost every joint in the body, including the spine, hips, wrists and hands. MRI requires specialized equipment and expertise, and allows evaluation of some body structures that may not be as visible with other imaging methods.

## How Should I Prepare for the Procedure?

Because the strong magnetic field used for MRI will pull on any ferromagnetic metal object implanted in the body, MRI staff will ask whether you have a prosthetic hip, an aneurysm clip in the brain, heart pacemaker (or artificial heart valve), implanted port (brand names Port-o-cath, Infusaport, Lifeport), 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 if they have been in place for more than four to six weeks.

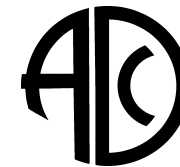
Dyes used in tattoos and permanent eyeliner may contain metallic iron oxide and could heat up during MRI; however, this is rare. You may be asked if you have ever had a bullet or shrapnel in your body, or ever worked with metal. If there is any question about internal metal fragments, you may be asked to have an x-ray that will detect any such objects.

Tooth fillings usually are not affected by the magnetic field, but they may distort images of the facial area or brain, so the radiologist should be aware of them. The same is true of braces, which may make it hard to “tune” the MRI unit to your body. You will be asked to remove anything that might degrade MR images of the head, including hairpins, jewelry, eyeglasses, hearing aids and any removable dental work.



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# MRI of the Musculoskeletal System



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