

Magnetic Resonance Imaging (MRI)

Magnetic Resonance Imaging (MRI) is a painless non-invasive diagnostic procedure that allows physicians to see detailed images of the internal structure of your body without using x-rays. This technology uses a large magnet, radio waves and a computer to scan your body.

What are some common uses of the MRI procedure?

Since MRI can give such clear pictures of soft-tissue structures near and around bones, it is the most sensitive exam for spinal and joint problems. MRI is widely used to diagnose small tears of ligaments and muscles in sports-related injuries. In addition, MRI of the heart, aorta, and blood vessels is a fast, non-invasive tool for diagnosing circulation and heart problems. Organs of the chest and abdomen (liver, kidney, spleen, pancreas and vessels) – can also be examined in high detail with MRI, enabling the diagnosis and evaluation of tumors and functional disorders. MRI is growing in popularity in breast imaging. Since no radiation exposure is involved, MRI is often the preferred diagnostic tool for examination of the male and female reproductive systems.

How should I prepare for the procedure?

MRI does not require any special preparation unless you are having an abdominal or pelvic study done. If you are having any part of your abdomen or pelvis examined you should not eat or drink anything six (6) hours before your exam. You may find it easier to relax if you avoid drinking coffee or other caffeinated beverages before the exam.

Because the strong magnetic field used for MRI will pull on any ferromagnetic metal object implanted in the body, MRI staff will ask **you to fill out a screening form** on arrival to find out whether you have metal implants 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 six weeks. Tattoos and permanent eyeliner may also create a problem. You will be asked if you have ever had a bullet or shrapnel in your body or ever worked with metal. If there is any question of metal fragments, you may be asked to have an x-ray that will detect any such metal objects. The magnet usually does not affect tooth fillings. If you might be pregnant, this should be mentioned. Please ensure that you answer the questions carefully and accurately. **It is absolutely imperative that you do not enter the scan room if you have a heart pacemaker.**

You will be asked to remove hairpins, jewelry, eyeglasses, hearing aid, any removable dental work and any other metal objects. You will be asked to change into a hospital gown.

If you have a fear of confined places (claustrophobia), please inform your doctor so he/she can prescribe some medication that will relax you. Please bring this medication (mild sedative) with you to the MRI appointment. If taking sedation, please arrange an escort to accompany you home.

Is an MRI safe?

Magnetic Resonance Imaging is very safe. There are no health risks associated with the magnetic field or the radio waves used by the machine. However, there are some contraindications that will affect the MRI scan. Your physician upon ordering of the scan will review the patient screening with you.

If you have ever had metal fragments in your eyes due to a penetrating injury of working with metal at high speed, you will require an x-ray of your eyes to ensure there are no particles still remaining. Even small fragments of metal can be pulled strongly by an MRI magnet. Please note that time elapsed since any metal related injury makes no difference; metal fragments can remain unchanged in the body for years.

Female patients: Please advise us beforehand if you are pregnant.

Recent Surgery? Let us know if you have had surgery within the last 6 weeks – just to ensure that we can check the safety of any implanted devices, stents, etc.

What is the Exam Like?

The exam usually takes 20-45 minutes. It consists of several scans lasting 2-5 minutes each. The technologist will provide you ear plugs and help you lie down on the cushioned table. A device called a coil will be placed over or under you. It helps the MRI system create a clear picture of your body. When you are comfortably positioned, the table will move into the magnet. The technologist will then step into the control area, while staying in constant contact with you both visually and through an intercom. As the exam proceeds, you will hear a muffled thumping sound for several minutes at a time. Other than the sound, the MRI creates no bodily sensation. Relax and try to lie as still as possible. Any movement during this time will blur the picture. When the exam is done, the technologist will help you off the table.

Depending on the part of the body being examined, a contrast material- a dye- (usually gadolinium) may be used to enhance the visibility of certain tissues or blood vessels. A small needle connected to an intravenous line is placed in an arm or hand vein.

What will I experience during the MRI procedure?

MRI causes no pain but some patients can find it uncomfortable to remain still during the examination. Others experience a sense of being “closed in”, though the more open (at both ends) construction of the newer MRI systems has done much to reduce that sensation.

You may notice a warm feeling in the area under examination; this is normal but if it bothers you, the technologist should be notified.

If a contrast injection 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.

If you have any questions? Please ask one of our knowledgeable MRI staff.

Graciously, Your GGH MRI Team ☺