

How do I find out my results?

After your scan is complete, the images are permanently stored in our electronic medical record. The radiologist, a physician who specializes in the creation and interpretation of medical images, will review the study and produce a detailed report of the results. Our radiologists are board certified and subspecialty trained, each having specialty expertise in the interpretation of images from specific parts of the body.

If you have had prior imaging studies, the radiologist will compare the current MRI images to your previous exams, so we will need to have these available on the day of your scan. If your past imaging was done at Dartmouth-Hitchcock, we will have them on file; however, if your previous scans were done elsewhere, we will need to get them loaded into our medical record. Typically, results of your MRI will be available to your physician within one business day.

Questions

If you have any questions regarding the MRI procedure, please call the Dartmouth-Hitchcock Radiology Department at (603) 650-8445 and ask to speak to one of the MRI technologists. We will be happy to answer your questions and explain each step of the process.



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Magnetic Resonance Imaging

Information for Patients



201502-42



What is an MRI?

An MRI (magnetic resonance imaging) scan is a medical imaging technique that uses magnetism, radio waves and a computer to make images of body structures. The MRI scanner is a tube that contains a giant circular magnet. The patient lies down on a bed that moves into the tube. There is a strong magnetic field in the tube that lines up the protons of hydrogen atoms of the body, which are then exposed to a beam of radio waves. These radio waves briefly change the spin of the hydrogen protons, producing a faint signal that is picked up by the receiver portion of the MRI scanner. A computer processes the incoming information and creates the image.

When are MRI scans used?

MRI scans provide detailed pictures of internal organs throughout the body. They are a very accurate method of diagnosing many diseases. Your doctor may send you for an MRI when they believe that it will either confirm or rule out a particular diagnosis. For example, when a person comes to the hospital with sudden weakness on one side, the cause may be an acute stroke or a brain tumor. By interpreting the pictures from an MRI, the radiologist can determine the cause. In addition, the images will show the size and location of the abnormality.

Throughout the body, MRI can find tumors, infections, and bleeding. An MRI can also evaluate the structure of the heart and aorta to detect aneurysms or tears.

It can examine arteries throughout the body for places where they may be narrowed. When there is joint pain, MRI can show areas of damage in the joints, soft tissues or bones. When surgery is needed, MRI helps surgeons plan the operation.

High-definition MRI imaging at Dartmouth-Hitchcock

Our team uses state-of-the-art equipment for our MRI exams:

- Siemens Open Bore Skyra 3.0T
- Siemens Open Bore Aera 1.5T
- GE Discovery 750 3.0T
- GE HDxT 1.5T
- ONI Extremity 1.5T

Our technologists are certified by the American Registry of Radiologic Technologists and keep current on new equipment and techniques.

What are the risks of an MRI scan?

MRI has the benefit of not using X-ray radiation. It has no side effects other than a slight temporary rise in body temperature and the possibility of brief nerve stimulation.

However, because the strong magnetic field will interact with metal and electronics, MRI cannot be performed in people who have some types of implanted devices. Patients scheduled for an MRI must complete a questionnaire about what types of metal (such as pacemakers, shrapnel, jewelry, tattoos) they have in their body. The MRI technologist will help the patient make sure they bring no dangerous metal objects into the scanner.

When an injected contrast agent is used for the MRI, there is a slight risk of an allergic reaction. These contrast agents are also avoided in patients with severe kidney disease. Women who are pregnant, or who are trying to become pregnant, should tell their physician as well as the MRI technologist.

How do I prepare for an MRI?

When your MRI appointment is being set up, the scheduler will tell you if you need to stay away from food and liquids prior to the exam. Certain MRIs require that the patient have an empty stomach.

If you are elderly, diabetic, or have a history of kidney disease you may need to have recent blood testing of your kidney function.

If you are scheduled to have one of our nurses give you oral or intravenous medication for claustrophobia, we will ask you to arrive one hour prior to your scan time.

What happens during the MRI?

The MRI technologist will have you lie down on a table and you will slide into the scanner. The exam can last from 20 minutes to up to three hours. You will be given a squeeze ball to notify the technologist of any problem and you can communicate with the technologist at any time through a speaker. We will ask that you hold as still as possible throughout the exam. Holding still allows us to produce the best pictures possible. During the scan there is loud noise produced by the electric currents and you will be offered earplugs or earphones for the examination.

What is contrast?

Some MRI scans require an injection of a contrast agent into one of your veins using an intravenous catheter. A contrast agent helps to improve the visibility of fluids or organs in your body. Most of these contrast agents consist of the element gadolinium tightly bound to a larger organic molecule. These compounds are rapidly removed from the body via excretion by the kidneys.