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For patients

Body MRI

Magnetic resonance imaging (MRI) of the body uses a powerful magnetic field, radio waves and a computer to produce detailed pictures of the inside of your body. Doctors may use it to help diagnose or monitor treatment for a variety of conditions within the chest, abdomen, and pelvis. If you are pregnant, the doctor may use body MRI to safely monitor your baby.

Tell your doctor about any health problems, recent surgeries, or allergies and whether there's a possibility you are pregnant. The magnetic field is not harmful, but it may cause some medical devices to malfunction. Most orthopedic implants pose no risk, but you should always tell the radiologic technologist if you have any devices or metal in your body. Guidelines about eating and drinking before your exam vary between facilities. Unless your doctor says otherwise, take your regular medications as usual. You should remove all jewelry, avoid wearing makeup, and wear loose, comfortable clothing. Most MRI facilities will ask that you change to a hospital gown. Some clothing may contain metallic fibers which cannot be worn inside the MRI. If you have claustrophobia or anxiety, you may want to ask your doctor for a mild sedative prior to the exam. If you take any relaxation medication, you should make sure you have a ride home.

What is MRI of the Body?

Magnetic resonance imaging (MRI) is a noninvasive test doctors use to diagnose medical conditions.

MRI uses a powerful magnetic field, radiofrequency pulses, and a computer to produce detailed pictures of internal body structures. MRI does not use radiation (x-rays).

Detailed MR images allow doctors to examine the body and detect disease.

What are some common uses of the procedure?

MR imaging of the body evaluates:

- organs in the abdomen—including the liver (http://www.radiologyinfo.org) , kidneys (http://www.radiologyinfo.org) , spleen (http://www.radiologyinfo.org) , bowel, pancreas (http://www.radiologyinfo.org) , and adrenal glands
- pelvic organs including the bladder and the reproductive organs
- blood vessels (this may require a specific type of MRI called MR Angiography or MR venogram)
- lymph nodes.

Physicians use an MR exam to help diagnose or monitor treatment for conditions such as:

- tumors of the abdomen or pelvis.
- diseases of the liver, such as cirrhosis, and abnormalities of the bile ducts and pancreas.
- inflammation of the bowel caused by Crohn's disease (https://www.radiologyinfo.org/en/info/crohns-disease) and ulcerative colitis or appendicitis in pregnant or younger patients
- malformations of the blood vessels and inflammation of the vessels (vasculitis).

- assessing a fetus in a pregnant person.

Who interprets the results and how do I get them?

A radiologist, a doctor trained to supervise and interpret radiology exams, will review your images. The radiologist will send a report (https://www.radiologyinfo.org/en/info/all-about-your-radiology-report) to your physician who ordered the exam. Many facilities will release a copy of your MRI report to your patient portal. However, you should always follow up with your doctor so they can share the results with you and explain what they mean.

You may need a follow-up exam. If so, your doctor will explain why. Sometimes a follow-up exam further evaluates a potential issue with more views or a special imaging technique. It may also see if there has been any change in an issue over time. Follow-up exams are often the best way to see if treatment is working or if a problem needs attention.

What are the benefits vs. risks?

Benefits

- MRI is a noninvasive imaging technique that does not involve exposure to radiation.
- MR images of the soft-tissue structures of the body—such as the liver and many other organs—are sometimes more likely to accurately identify disease than other imaging methods. This detail makes MRI an invaluable tool in early diagnosis and evaluation.
- MRI has proven valuable in diagnosing a broad range of conditions, including cancer, heart and vascular disease (http://www.radiologyinfo.org) , and muscular and bone abnormalities
- MRI can detect abnormalities that bone might obscure with other imaging methods.
- MRI allows physicians to assess the biliary system noninvasively and without contrast injection.
- The MRI gadolinium contrast material is less likely to cause an allergic reaction than the iodine-based contrast materials x-rays and CT scanning use.
- MRI provides a noninvasive (http://www.radiologyinfo.org) alternative to x-ray, angiography (http://www.radiologyinfo.org) and CT for diagnosing problems of the heart and blood vessels.

Risks

- The MRI exam poses almost no risk to the average patient when radiologic technologists follow appropriate safety guidelines.
- If the exam uses sedation, there is a risk of using too much. However, the doctor will monitor your vital signs to minimize this risk.
- The strong magnetic field is not harmful to you. However, it may cause implanted medical devices to malfunction or distort the images.
- Nephrogenic systemic fibrosis is a recognized complication related to injection of gadolinium (http://www.radiologyinfo.org) contrast. It is exceptionally rare with the use of newer gadolinium contrast agents. It usually occurs in patients with serious kidney disease. Your doctor will carefully assess your kidney function before considering a contrast injection.
- There is a very slight risk of an allergic reaction if your exam uses contrast material. Such reactions are usually mild and often resolve on their own. If you have an allergic reaction, a doctor will be available for immediate assistance. Although there are no known health effects, evidence has shown that very small amounts of gadolinium can remain in the body after multiple MRI exams.

What are the limitations of MRI of the Body?

High-quality images depend on your ability to remain still and follow breath-holding instructions while the radiologic technologist records the images. If you are anxious, confused or in severe pain, you may find it difficult to lie still during the MRI and the image quality will suffer.

A large person may not fit into certain types of MRI machines. There are weight limits on the scanners.

Implants and other metallic objects can make it difficult to obtain clear images. Patient movement can have the same effect. A large amount of ascites fluid in the abdomen/pelvis can also create artifact that results in low-quality MR images.

If you cannot hold your breath, some MRI exams may be of limited quality as the pictures will be blurry.

An MRI exam typically costs more and may take more time than other imaging exams. Talk to your insurance provider if you have concerns about the cost of MRI.

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