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For patients

Abdominal and Pelvic MRI



Magnetic resonance imaging (MRI) of the abdomen and pelvis uses a powerful magnetic field, radio waves and a computer to produce detailed pictures of the inside of your body. It may be used to help diagnose or monitor treatment for a variety of conditions within the abdomen and pelvis. If you're pregnant, MRI may be used to safely monitor you or 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 technologist if you have any medical devices or metal in your body. Guidelines about eating and drinking before your exam vary between facilities. Unless you are told otherwise, take your regular medications as usual. Leave jewelry at home and wear loose, comfortable clothing. You may be asked to wear a gown. If you have claustrophobia or anxiety, you may want to ask your doctor to prescribe a mild sedative before the exam.

What is abdominal and pelvic MRI?

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 abdomen and pelvis is performed to evaluate:

- organs of the abdomen, such as the liver (http://www.radiologyinfo.org) , biliary tract (http://www.radiologyinfo.org) , kidneys (http://www.radiologyinfo.org) , spleen (http://www.radiologyinfo.org) , bowel (http://www.radiologyinfo.org) , pancreas (http://www.radiologyinfo.org) , and adrenal glands (http://www.radiologyinfo.org) .
- organs of the pelvis, such as the bladder (http://www.radiologyinfo.org) and the reproductive organs such as the uterus (http://www.radiologyinfo.org) and ovarie (http://www.radiologyinfo.org) s in females and the prostate gland (http://www.radiologyinfo.org) in males.
- blood vessels (including MR Angiography (https://www.radiologyinfo.org/en/info/angiomr)).
- lymph nodes.

Doctors use MRI to help diagnose or monitor treatment for conditions such as:

- tumors of the abdomen or pelvis.
- diseases of the liver, such as cirrhosis (https://www.radiologyinfo.org/en/info/cirrhosisliver) , and abnormalities of the bile ducts and pancreas.

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- inflammatory bowel disease such as Crohn's disease (https://www.radiologyinfo.org/en/info/crohns-disease) and ulcerative colitis (http://www.radiologyinfo.org) .
- abnormal blood vessels and inflamed vessels (vasculitis).
- a fetus in the womb of a pregnant woman.

Who interprets the results and how do I get them?

A radiologist, a doctor trained to supervise and interpret radiology exams, will analyze the images. The radiologist will send a signed report to your primary care or referring physician, who will share the results with you.

Follow-up exams may be necessary. If so, your doctor will explain why. Sometimes a follow-up exam is done to further evaluate a potential abnormality with additional views or a special imaging technique. Or, a follow-up exam may be to monitor any changes in a known abnormality over time. Follow-up exams are sometimes the best way to see if treatment is working or if a previous finding has changed.

What are the benefits vs. risks?

Benefits

- MRI is a noninvasive imaging technique that does not involve exposure to radiation.
- MR images of soft-tissue structures—such as the liver and many other organs— may be more likely to accurately identify and characterize disease than other imaging methods. This makes MRI an invaluable tool in early diagnosis and evaluation of many focal lesions and tumors.
- 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 might be obscured by bone 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 used for x-rays and CT scanning.
- MRI provides a noninvasive alternative to x-ray, angiography and CT for diagnosing problems of the blood vessels.

Risks

- The MRI exam poses almost no risk to the average patient when appropriate safety guidelines are followed.
- If sedation is used, there is a risk of using too much. However, your vital signs will be monitored 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 controlled by medication. 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, particularly the brain, after multiple MRI exams. This is most likely to occur in patients receiving multiple MRI exams over their lifetime for monitoring chronic or high-risk health conditions. The contrast agent is mostly eliminated from the body through the kidneys. If you are a patient in this category, consult with your doctor about the possibility of gadolinium retention, as this effect varies from patient to patient.
- Manufacturers of intravenous contrast indicate mothers should not breastfeed their babies for 24-48 hours after contrast

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medium is given. However, both the American College of Radiology (ACR) and the European Society of Urogenital Radiology note that the available data suggest that it is safe to continue breastfeeding after receiving intravenous contrast. *For further information please consult the ACR Manual on Contrast Media (https://www.acr.org/Clinical-Resources/Contrast-Manual) and its references.*

What are the limitations of abdominal and pelvic MRI?

High-quality images depend on your ability to remain perfectly still and follow breath-holding instructions while the images are being recorded. If you are anxious, confused or in severe pain, you may find it difficult to lie still during imaging.

A person who is very large may not fit into the opening of certain types of MRI machines.

Implants and other metallic objects can make it difficult to obtain clear images. Patient movement can have the same effect.

Breathing may cause artifacts (http://www.radiologyinfo.org) , or image distortions, during MRI. Bowel motion may also cause artifacts. This is less of a problem with state-of-the art scanners and techniques.

Present data show no convincing evidence that non contrast MRI harms the fetus of a pregnant woman. However, if the need for the exam is not time sensitive your doctor may delay the exam until after delivery. MRI gadolinium contrast agents are generally avoided during pregnancy except in very specific circumstances. Your doctor will discuss the benefits and risks of any MRI procedure with you. Doctors may perform MRI after the first trimester to assess the fetus for findings that are not fully evaluated by ultrasound.

MRI may not always distinguish between cancer tissue and benign tumors or other conditions, such as edema (http://www.radiologyinfo.org) .

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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