

Magnetic Resonance Imaging (MRI)

Consumer Information

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What is Magnetic Resonance Imaging (MRI?)

Magnetic Resonance Imaging (MRI) is a completely painless scanning procedure that uses magnetism and radiofrequency pulses to gather signals from certain parts of the body. These signals are detected by a radio antenna, processed by a computer and made into images (pictures) or data. This information is read and interpreted by a specialist doctor called a radiologist.

MRI is often used to gain more information about the body where other tests such as X-rays or ultrasounds have detected a problem. MRI may be the best way of showing a problem to the doctor. There are many techniques or types of MRI scans that can be performed, depending on what your doctor has asked to look at and why. Each one of these different techniques offers the doctor and the radiologist specific information, and so those MRI techniques that will produce the pictures that best answer the medical question are chosen.

MRI does not use radiation, required for many other types of imaging, and is not known to have any long term harmful effects.

How do I prepare for Magnetic Resonance Imaging (MRI)

Often, the facility where you are having the MRI scan will mail a safety questionnaire to you to be filled in before you arrive for your scan to ensure that it is safe for you to enter the MRI machine and be exposed to the magnet.

This is because there are many implants such as pacemakers or certain wires or clips that may be in your body, or other articles such as hearing aids or devices that may be around your body that could make the test unsafe. It is important you read the questionnaire carefully and answer all the questions. If there is anything you don't understand or if you are unsure if it applies to you, please ring the hospital or private radiology practice where you are having the scan and ask for further information. You will not be scanned if you have any implants that may make the scan unsafe.

Please bring any previous X-ray or ultrasound scan films that may be relevant to why you are having the scan. The radiologist may like to compare

different information or to see if your condition has changed since your last scan.

You will be asked to lie still when having an MRI scan and so comfort is very important. Please wear or bring loose clothes that you will be comfortable wearing. It is important you do not wear any makeup or hairspray as many of these products have minute metal particles that may interfere with the scan and reduce the quality of your images or cause the area to heat up and, on the rare occasion, burn your skin.

Many MRI scanning facilities have stereos or DVD and CD players attached to the MRI scanner. You may like to bring entertainment you enjoy to help you relax while you have the scan.

You will not be able to take anything into the scan room with you and you will usually find that lockers are available. You will find it easier to bring with you only the things you need for the scan. Objects that you usually wear or have in your pockets should be left at home if at all possible. Such items include watches, jewellery, mobile phones, belts, safety pins, hair pins and credit cards.

Fasting (going without food) for a MRI procedure is rare but it may be required in some cases. When you make your MRI scan appointment you will be advised of any fasting requirements.

Take all medications as you normally would, unless you are otherwise advised.

What happens during Magnetic Resonance Imaging (MRI)?

The MRI procedure will be thoroughly explained to you before you enter the scan room. If you have any questions, please ask the radiographer as it is important you are comfortable and know what will be happening throughout the scan.

After entering the scan room, you will be asked to lie on the scan table. The part of your body to be scanned will be carefully positioned and secured so you are comfortable and more likely to remain still. This part will then have special antennae positioned around it before it is moved to the centre of the machine. Your head may be inside or outside the scanner depending on the distance between it and the body part to be scanned. Both ends of the machine are open and will not close. It is well lit inside and you may have a mirror to look out of the scanner.

When the scan begins, you will hear a very loud knocking noise. This will last for the length of each scan. You will be able to talk to the radiographer between each scan and you will be given a buzzer to press in case you are not comfortable or want to come out of the machine at any time.

The radiographer will be watching you all the time you are having the scan.

You should not feel anything during the scan. However, it is common to feel slightly warmer during scanning. The scanning process is completely painless. If you do feel anything at all it is important you tell the radiographer performing the scan.

An MRI scan may involve the injection of a special dye (called contrast) into the veins during the scan. The contrast highlights the part of the body being scanned, giving a clearer image of how that part of your body is working, identify subtle changes to the part of the body being scanned and helps to show the doctor what he or she has asked to see.

Most people find the MRI procedure a comfortable experience. Some people may not be able to have the test due to the small space inside the scanner or the patient may move too much. If this does occur to you, the radiographer will discuss giving a drug to calm you down and keep you still so that the test can be completed. Each facility offering MRI scanning has special procedures for this and will advise you what to do if this applies to you.

Are there any after effects of Magnetic Resonance Imaging (MRI)?

There should be no after effects of the MRI scan. You will be able to carry on your day as planned once the test has been completed. If you require sedation for the scan, the MRI facility will give clear instructions on what to do before and after the scan.

How long does Magnetic Resonance Imaging (MRI) take?

The test can take anywhere between 10 minutes to over an hour to complete. This depends on the part of the body being imaged and what techniques are required to give the doctor the information requested. Before the scan begins, the radiographer (the medical imaging technologist who operates the MRI machine) will tell you how long the scan takes so you know what to expect.

What are the risks of Magnetic Resonance Imaging (MRI)?

There are no known side effects of an MRI procedure, providing you do not have any implants or objects that must not go in the scanner.

Some implants including pacemakers, defibrillators, some hearing devices, drug pumps and many more, make it unsafe for the person to have the scan, as the mechanisms inside the implants may be altered and/or broken by the strong magnets. Some implants may also heat up in the scanner or be pulled and so move by the magnetic field. It is important you complete the safety questionnaire fully and contact the facility where you are having the MRI if you have any questions about implants you have. The radiographers have literature about most implants. They may ask you or your doctor for more information on any implants you have, and will find out whether it is safe for you to go in the scanner.

If you are pregnant, please discuss the scan with your doctor and tell the MRI facility before your

procedure. This will not necessarily stop you having the scan.

You may be required to have an injection of contrast medium. If you have a history of kidney disease your doctor may wish to do a blood test before the scan, to ensure that the contrast medium (known as "gadolinium chelate") if it is required, can be given safely (see [Gadolinium Contrast Medium \(MRI Contrast agents\)](#)).

The gadolinium chelate is very safe, but as with all medications, allergic reactions can occur. The hospital radiology department or radiology practice where you are having the scan is equipped to deal with this on the rare occasion that it arises.

The chance of an allergic reaction to the contrast medium is very small, but please ask the MRI radiographer about the injection to obtain more information.

What are the benefits of Magnetic Resonance Imaging (MRI)?

MRI is capable of providing your doctor with a wide range of information about your body and particular diseases or conditions you may have. This machine can image most parts of the body in any direction to obtain maximum information. It usually presents this information in very high quality, detailed sets of images and is used to show certain conditions that other tests are unable to show. Each set of images taken give accurate details about certain processes or structures within the body. MRI may also provide data or graphs to display information to the specialist doctors.

MRI uses magnets and radiofrequency pulses and so no ionising radiation or X-rays are used to obtain the information. MRI does not use radiation and therefore there are no known side-effects of this test.

Who does Magnetic Resonance Imaging (MRI)?

A [radiographer](#) (medical imaging technologist) who is specially trained in MRI is responsible for looking after you in the hospital department or private radiology practice and for taking the scans. The information is then passed to a [radiologist](#) (a specialist doctor), who interprets this information and provides a written report to the doctor who referred you for the scan. The radiologist may also speak to your doctor about the result if the test is urgent or if he or she needs more information about your medical problem before writing the report.

Where is Magnetic Resonance Imaging (MRI) done?

Most private and public hospitals and private radiology practices have MRI machines. You can contact your local hospital, radiology practice or your referring doctor for a list of places that have an MRI scanner.

When can I expect the results of my Magnetic Resonance Imaging (MRI)?

The time that it takes your doctor to receive a written report on the test or procedure you have had will vary, depending on:

- the urgency with which the result is needed
- the complexity of the examination
- whether more information is needed from your doctor before the examination can be interpreted by the radiologist
- whether you have had previous X-rays or other medical imaging that needs to be compared with this new test or procedure (this is commonly the case if you have a disease or condition that is being followed to assess your progress)
- how the report is conveyed from the practice or hospital to your doctor (in other words, email, fax or mail)

Please feel free to ask the private practice, clinic, or hospital where you are having your test or procedure when your doctor is likely to have the written report.

It is important that you discuss the results with the doctor who referred you, either in person or on the telephone, so that they can explain what the results mean for you.

Please note:

This information is of a general nature only and is not intended as a substitute for medical advice. It is designed to support, not replace, the relationship that exists between a patient and his/her doctor. It is recommended that any specific questions regarding your procedure be discussed with your family doctor or medical specialist

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