

MRI (Magnetic Resonance Imaging) uses a strong magnetic field and low energy radio waves to cause a temporary excitation of the body's protons within water molecules. The strength and manner in which this energy is re-emitted is characteristic for a particular body tissue and is used to create a 3-dimensional image in shades of grey. The anatomical detail is superior to most other imaging modalities and the sensitivity to many types of conditions is unique to this test.

Safety

Patients who have pacemakers or any electromagnetic implants are prohibited from entering the magnet or its surrounds under any circumstances. Some surgical implants may not be safe, and all patients must complete a questionnaire before the examination to ensure there are no risks to them having the scan.

To the best of our knowledge, both the magnetic and radio energy is not harmful to normal tissue, despite extensive research. However, the strong magnetic field means that any iron containing potentially magnetised metals can be drawn with extreme force to the magnet centre. Patients are asked to remove all jewellery, coins, watches, credit cards and street wear and change into a hospital gown for reasons of safety and comfort.

Pregnant patients are advised not to have the scan unless it's absolutely medically essential. Theoretically, MRI should be safer than a CT scan, where the use of ionising x-rays is known to be potentially harmful to the unshielded foetus. With cardiac scans, the patient is monitored with ECG leads to check heart rhythm. There have rarely been reported cases of electrical burns as a result of incorrect lead placement or patient positioning. Great care is taken with this and it is important to follow the radiographers directions at all times and to report any concerns. All patients are constantly monitored visually and via two way audio communication. All patients also have a rubber ball to squeeze that will set off an alarm so the scan can be aborted if necessary.

MRI Patient Information

Some procedures will require an injection of X-Ray contrast into a vein in the arm. This has a much lower incidence of allergy than other radiologic contrast agents, but it is still advised that you inform the booking staff and nurses if you've ever had a reaction to a similar compound. Occasionally scans performed are quite noisy, but appropriate ear protection will be supplied in this instance to avoid any ill effects.

Claustrophobia

Where possible, it is very helpful if patients can indicate to booking staff that there might be a problem with being confined in an enclosed space in advance. In this instance their booking will be scheduled during routine working hours so that there will be adequate nursing staff to assist with any sedation required. Usually patients can manage to complete the study with a light dose of midazolam, which is a short acting valium-like agent. Following this injection, you cannot drive for at least 6 hours, operate heavy machinery or make any legally significant decisions for 24 hours.

What to expect

The scan will take 20 to 60 minutes. Each set of pictures may only take two or three minutes, but it is important to lie very still during the acquisition of the images. The magnet will make a loud sound, somewhat like an electric guitar or drill. You may be able to bring music to listen to during the scan.

A plastic device known as the coil usually covers part of your body to be scanned as this contains a device or receiving the radio wave signals which make the pictures.

Delays

Where possible, appointment times are closely adhered to, but each patient has an individualised study to some extent, depending on the nature of their problem. Some problems are more complex than others, and unexpected long scan times may be required. If your provider is a hospital based practice, there is also the potential for emergency cases.

While bookings are set aside for these cases, it is not always possible to predict the volume of such work, and we appreciate the patience and understanding of our patients in accommodating others in this situation.

Results

Your results may not be available for 24 hours or more, particularly if the films are being couriered, but any serious findings are telephone through to your doctor. It is imperative that you bring any old films and notify our staff if the results are required urgently.

Medicare Eligibility.

Medicare will only provide a rebate for scans referred by a medical specialist and if the reason for the scan falls into one of their many strict criteria. Most scans of the brain, spine, joints and limbs are Medicare eligible.

For full details of medical eligibility and gap fees, please contact your provider.

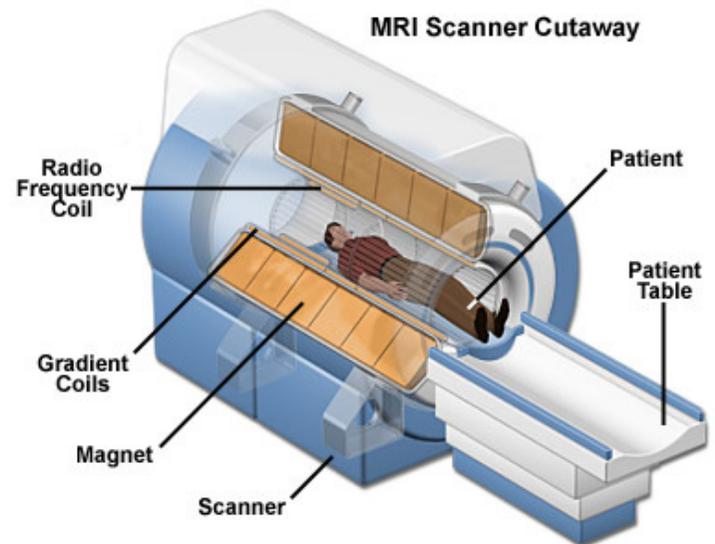


Fig.1; A Cutaway of a MRI scanner.