

Magnetic Resonance Imaging

What is a MRI?

Magnetic Resonance Imaging (MRI) is a medical imaging technique that looks inside the body without using surgery or radiation. The MRI scanner is a large and powerful magnet open at both ends. It uses a strong magnetic field, radio waves and a computer to produce very detailed views of the body, particularly soft tissues, such as the brain, spinal cord and muscles.

Can anyone have a MRI scan?

No. There are some patients on whom we cannot perform the test. Patients with certain types of cardiac pacemakers and cochlear implants cannot undergo MRI scans. Other metallic implants may prohibit patients from having an MRI scan. This includes people with certain types of cerebral aneurysm clips, vascular stents, infusion pumps and neurostimulators. That is why we ask you to complete the MRI questionnaire, and why it is important that we know of any of the following conditions/circumstances:

- Metal implants of any kind, e.g. joint replacements
- Have worked with metal
- Significant claustrophobia
- Pacemaker or neurostimulator implant
- Renal impairment
- Adverse reaction to a contrast injection given for a previous MRI scan

If you are a nursing mother you will need to contact the MRI unit 2 days prior to your appointment. MRI scans are not usually conducted in the first trimester of pregnancy unless it is deemed by the referring doctor or radiologist that it is absolutely necessary to do so.

What preparation is required?

You will be asked to change into the examination gown provided. Do not wear undergarments that contain metal thread. The following items cannot be taken into the scan room because of the strong magnetic field (a locker is available for any valuables): watches, scissors, removable jewellery, shoes, pens, pencils, wallet, coins, credit cards, keys, dentures, wigs, hairclips, mobile phones, clothing with metal attachments, e.g. bra, jeans or pants with a zip, etc.

If you are having a head scan do not wear eye makeup.

For head, spine, bone and joint MRIs no specific preparation is required.

For abdomen MRIs a 6 hour fast prior to the procedure is required.

What you need to tell us prior to your appointment?

At the time of arranging your appointment, please advise us if you are pregnant or could be pregnant. MRI is usually avoided in the first trimester of pregnancy unless the diagnosis cannot wait and your doctor considers the MRI to be the best medical imaging scan.

The scan occurs in an enclosed space, so if you are claustrophobic or feel anxious, please inform us in advance.

Instructions for diabetics having abdominal scans

Please inform booking staff if you are a diabetic and they will advise you of any special arrangements.

Please inform booking staff if you have renal function impairment or are on dialysis.

What will happen during the procedure?

The radiographer will guide you onto the MRI scan table. Some equipment may be placed around the body part we will be scanning. You will be positioned on a padded table (usually on your back) and you will slowly be moved into the scanner.

The scan will not hurt. You may get warm during the scan as energy turns into heat – this is quite normal. You will hear a very loud sound, rather like a vibration, and hearing protection (such as headphones) will be provided. It is important to keep your body very still as movement will degrade the quality of the image. You will be in the scanner for about 30 minutes. If you wish, you can listen to music via the headphones provided.

The MRI scanner is air-conditioned and well lit. You will be able to hear and talk to the radiographer via an intercom system at all times. As an additional safety measure, you will be provided with a buzzer.

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What will happen during the procedure? Cont...

You can press this buzzer at anytime should you feel anxious or if you experience uncomfortable sensations. The scan will be terminated at this point in time and you will be immediately attended to by our staff.

Most MRI scans do not involve any medication. Some patients undergoing an MRI scan may require an injection of an intravenous (IV) contrast known as Gadolinium. The MRI IV contrast is injected into your bloodstream by an intravenous cannula, which is placed into a vein in your arm by our trained staff. The IV contrast is not radioactive. MRI contrast is not actually a dye and it does not stain the inside of your body. It is used during MRI medical procedures to allow your organs to be seen more clearly.

How long will the procedure take?

MRI examinations usually take up to 30 minutes to complete. This time is broken into a series of scans each of 5 minutes on average.

What can you expect after your examination?

There should be no ill effects after the examination. The MRI scan is not a treatment. It is a test to diagnose the cause of your illness or symptoms.

Are there any risks?

MRI does not utilise ionising radiation which is used in x-ray and CT scanning. The magnetic field and radio frequency pulses used in clinical MRI are believed not to produce any long-term side effects. Given this, it is still important to advise the MRI staff if you are, or suspect you are pregnant.

As for all medical procedures, there are risks associated with the administration of any substance, including MRI IV Contrast. In recommending the administration of MRI IV Contrast, the benefits to you from having this injection exceed the small risks of suffering the side effects involved. The risks and complications with injecting MRI IV Contrast can include but are not limited to the following:

Common risks and Complications:

- No known common risks.

Less Common risks and complications:

- Injected contrast may leak outside of the blood vessel, under the skin and into the tissues. This may require treatment. In very rare cases, further surgery may be required if the skin breaks down.
- The injection may not be possible due to medical and/or technical reasons.

Rare risks and complications:

- Allergic reactions occur within the first hour with mostly happening in the first 5 minutes such as:
 - Mild/Moderate - headache, brief nausea, dizziness, facial swelling, hives sneezing, rash and itching;
 - Severe - severe reactions are rare but include : a rapid or slow heart rate, low blood pressure, an asthma attack, fits and/or cardiac arrest.
- Nephrogenic Systemic Fibrosis (NSF) (a potentially life threatening condition) for severe renal impaired patients only.
- Death as a result of MRI Contrast is very rare, occurring in 1 in 10 million.

A patient who becomes allergic will usually develop their symptoms within 10 minutes and will be on our premises where assistance and medical treatment may be provided.

If you have Renal Impairment or are on Dialysis, please tell the radiographers as Gadolinium can affect renal function in rare cases in such patients.

What happens with the images and report?

The images will be reviewed by the Radiologist who will forward the images and a report to your referring doctor. This can take 1 to 2 working days. Your referring doctor will then discuss the results with you.

We store digital copies of all studies and reports on our secure patient information system in accordance with relevant privacy laws.

For branch contact details and other services, please visit our website ncrg.com.au