

MRI—

Magnetic Resonance Imaging

Patient Information

What is Magnetic Resonance Imaging?

Magnetic Resonance Imaging (MRI) is a medical imaging procedure that uses magnets and radiofrequency pulses to take pictures inside the body. MRI is especially helpful to collect pictures of soft tissue such as organs and muscles that don't show up on X-ray examinations.

The MRI scanner uses strong magnets and radiofrequency pulses to generate signals from the body. A computer then organises these signals to create images.

MRI is commonly used to diagnose conditions that affect soft tissue, such as:

- Soft tissue injury, such as damaged ligaments
- Joint injury or disease
- Spinal injury or disease
- Tumors
- Injury or disease of internal organs including brain and digestive organs.

At Radiology Tasmania, your MRI scan will be performed with a 3T scanner which has twice the magnetic field strength of conventional 1.5T MRI scanners and is capable of producing images with increased detail and clarity. The increase in magnetic strength also means much faster scan times which decreases the chance of the images being blurred due to patient movement.

What happens during an MRI?

MRI safety is vital, and you will be required to complete a safety questionnaire prior to the examination. This will assist us to identify if you have any metal, surgical implants or electrical devices that may not be safe to go inside the scanners strong magnetic field. Some patients with

cerebral aneurysm clips, pacemakers and certain types of implants are unable to have an MRI scan or may require the examination to be modified.

If you have, or it is suspected you may have metal in the body (ie: shrapnel or metal slivers from grinding or welding) you may need to have an X-ray examination prior to your MRI.

Once appropriate screening has been performed, you will be asked to change into a hospital gown and place your belongings in the locker provided.

The radiographer (health professional specially trained in MRI) will ask you to lie on the scan bed and position you in a comfortable position with the area of interest gently secured.

The radiographer will explain the use of the two way intercom. If at any time you become uncomfortable, a buzzer enables you to alert the radiographer who will be in the control room.

The MRI scanner is very noisy, and you will be given earplugs to reduce the noise level.

The scan bed will then be moved into the centre of the machine and the radiographer will return to the control room to commence scanning.

While the scan is being performed you will hear a variety of thumping, whirling and banging noises, this is normal, and there is no need to be alarmed.

It is important that you remain still during the scan, as movement may cause blurring of the images making assessment of your condition difficult.

It is possible you may require an injection of a special contrast called Gadolinium. This highlights the part of the body being scanned, which can give more information to the Radiologist (Specialist Doctor) assessing your images. This will be explained to you before proceeding with the injection.

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The scanning process is painless, and scan times vary from 20 minutes to an hour depending on the area being examined.

A radiologist will assess your images and a written report will be sent to your doctor within 48 hours.

What are the risks of an MRI?

Provided you do not have any objects or implants in the body that are not safe for MRI, it is a very safe procedure with no known long-term harmful effects. MRI does not use radiation.

If contrast is used, there is a small risk of allergic reaction. Our staff are well trained to deal with allergic reactions should they arise. Please notify the radiographer immediately if you notice itchy eyes or skin, or are having difficulty breathing.