

Magnetic Resonance Imaging (MRI) Scan

Adult and Child/Young Person | Informed consent: patient information

A copy of this patient information sheet should be given to the patient/substitute decision-maker/parent/legal guardian/other person* to read carefully and allow time to ask any questions about the procedure. The patient information sheet should be included in the patient's medical record.

In this information sheet, the word 'you' means the patient unless a substitute decision-maker, parent, legal guardian or other person is providing consent on behalf of the patient, in which case the word 'you' means the substitute decision-maker, parent, legal guardian or other person when used in the context of the person providing consent to the procedure.



1. What is a Magnetic Resonance Imaging (MRI) scan and how will it help me?

A Magnetic Resonance Imaging (MRI) scanner uses a strong magnetic field, radio waves and a computer to produce images of the body. MRI does not use any ionising radiation or x-rays. MRI images are generally more detailed for soft tissues than x-rays and other scans.

The information from the MRI scan may provide a specific disease diagnosis and/or information on your condition.

MRI contrast

Some scans require an injection of a contrast agent. If the Radiologist (doctor) thinks it would be useful to give you MRI contrast for your MRI scan, we will ask you some questions to make sure it is safe for you to be given the contrast.

MRI contrast is a colourless liquid that is injected into your blood stream. It is used during MRI scans to allow your internal organs and structures to be seen more clearly.



Image: A radiographer prepares a patient for an MRI scan.

ID: 1503383393. www.shutterstock.com

MRI safety

- No one is permitted into the scanning room until they have answered a series of safety questions and taken off all removable metal objects from their body (e.g. jewellery, piercings, glasses and mobile phones). Your removable metal objects and personal items must be left outside the MRI scan room. You will be allocated a place to store your belongings safely.
- You will be required to change into a hospital gown.
- It is important you answer the safety questions as correctly as possible to avoid injury.
- If you have an implant, foreign body (e.g. shrapnel) or inserted medical device, MRI staff will work to determine if it is safe for you to go into the strong magnetic field of an MRI scanner.
 - » If you have an implant, foreign body or device that is not safe to go into an MRI scanner, you may not be able to have an MRI scan.
 - » If you have an implant or device that is safe to enter a strong magnetic field under certain conditions, MRI staff will determine if your device or implant is safe to go into the MRI scanner at this hospital.
 - » For some devices and implants, it may not be possible to have an MRI scan at one hospital, while it is possible at another hospital. This is because the strength of the magnetic field is not the same for all MRI scanners. The MRI scanner at one hospital might be able to meet the special conditions of your implant or device, whereas the MRI scanner at another hospital cannot.
 - » MRI safety also depends on the risk versus benefit for each individual; no one will be refused an MRI without a thorough review.



SWPI9528

Preparing for the procedure

The Medical Imaging department will give you instructions on how to prepare for your procedure. Some MRI procedures require special preparation. You will receive personalised instructions depending on:

- body part being scanned
- whether fasting is required
- whether contrast is likely to be used
- other instructions related to your personal circumstances.

Your procedure might be delayed if you don't follow all of your preparation requirements.

Please tell the staff if you are breastfeeding or pregnant, or suspect that you may be pregnant.

Some people find that being inside the lightfilled, open-ended tunnel of the MRI machine makes them feel uncomfortable. If you feel uncomfortable, let the staff know as there are many ways they can help you.

To assist in reducing the risk of thermal injuries, it is important you try and remain in the position MRI staff placed you in at the start of the scan. MRI staff will try to make sure you are positioned to avoid skin-to-skin contact (e.g. you can't have your arms or legs crossed) and they may place padding around you, so you don't touch the walls of the scanner.

For adults that are unable to lie still a mild sedative may be required or rarely a general anaesthetic. For a child/young person that is unable to lie still for their scan a general anaesthetic may be required. Sedation or a general anaesthetic would need to be organised prior to the date of your scan. Please contact the Medical Imaging department to discuss. If you are booked for an anaesthetic, please read the information sheet *About Your Anaesthetic (for adults)* or *About Your Child's Anaesthetic (for child/young person)*. If you do not have one of these information sheets, please ask for one.

For parents/guardians of a patient having an MRI scan

To prepare the patient for this procedure and to ease their concerns, tell them what they can expect to happen during the procedure. This information sheet will assist you with this.

We welcome your help and support in preparing the patient for the procedure and in explaining why it's so important to lie still.

At the discretion of the procedure staff:

- a parent/guardian/adult (unless pregnant) may be invited into the procedure room to support the patient
- MRI staff will need to determine that this support person does not have an implant, foreign object or device that is not safe to go into an MRI scan room
- if the patient is having a general anaesthetic you may be able to see them off to sleep. Once they are asleep you will be asked to leave the procedure room and wait in the waiting area.

Other children are not allowed into the MRI scan room, and they must be supervised at all times by another parent/guardian/adult.

During the procedure

If you are having contrast or intravenous (I.V.) medication, it will be administered via an I.V. cannula. An I.V. cannula is a small plastic tube inserted into a vein using a needle, usually in your hand or arm.

The MRI scan itself should not cause you any pain. You may feel some vibrations and warming during your MRI scan.

The MRI scanner is usually very noisy. You may hear thumping and knocking sounds.

You will be given headphones or earplugs to protect your hearing from the noise.

Before the scan starts, you will be given a call button which you can press if there is an urgent concern.

Peripheral Nerve Stimulation (PNS) may occur and can cause muscle twitching and tingling. These effects are temporary and will stop as soon as the scan stops or soon afterwards.

MRI staff will not be in the room during the scan, but they will be able to see you and talk to you between images.

During the MRI scan we will take lots of images. This means you will need to keep still for a long time while the images are being taken, so that they are not blurry.

The scan and all the images will take between 15 and 90 minutes, depending on the body part being scanned and the information required.

When your scan is finished, you will be taken out of the MRI scan room. If you had an I.V. cannula and it is no longer required, it will be removed.



2. What are the risks?

In recommending the procedure, the doctor/clinician believes that the benefits to you from having the procedure exceed the risks involved. There are risks and possible complications associated with the procedure which can occur with all patients – these are set out below. There may also be additional risks and possible complications specific to your condition and circumstances which the doctor/clinician will discuss with you. If you have any further concerns, please ensure that you raise them with the doctor/clinician.

Common risks and complications

- (*MRI contrast only*) minor pain, bruising and/or infection from the I.V. cannula. This may require treatment
- (*MRI contrast only*) gadolinium is the key component of the contrast material most often used in MRI scans. Small amounts of gadolinium may remain in tissues of the body, including the liver, bone and brain. These small amounts of gadolinium found in tissues of the body are called gadolinium retention. The effects of gadolinium retention are an area of ongoing research.

Uncommon risks and complications

- (*MRI contrast only*) contrast injected into a blood vessel may leak outside the blood vessel, under the skin and into the tissue. This may require treatment. In very rare cases, surgery may be required if the skin breaks down
- the MRI scan may not be possible due to medical and/or technical reasons.

Rare risks and complications

- thermal burns are extremely rare due to precautionary measures taken by MRI staff
- (*MRI contrast only*) allergic reactions rarely occur, but when they do, they usually occur within the first hour, with most happening in the first five minutes. Late reactions have been known to occur up to 1 week after the injection, but these delayed reactions are mild. The reactions vary from:
 - » mild – headache, brief nausea, dizziness, hives, rash and itching
 - » moderate – widespread hives, headaches, facial swelling, vomiting, shortness of breath
 - » severe – severe reactions are rare but include life-threatening heart palpitations, very low blood pressure, throat swelling, seizures and/or cardiac arrest
- (*MRI contrast only*) Nephrogenic Systemic Fibrosis (NSF) can occur to those who have severe renal impairment and are given MRI contrast. Please refer to the section on precautions for kidney function to learn more about NSF
- injury, severe injury or death because of an undeclared metal implant or if an implant is scanned without the necessary conditions for safety
- death because of an MRI scan is extremely rare.

Precautions

MRI contrast cannot be given to some people. If the Radiologist (doctor) thinks it would be useful to give you contrast for your MRI scan, you will be asked some questions to make sure it is safe for you to be given the contrast. If it is not safe for you to have contrast, the Radiologist might decide to do an MRI scan without contrast or they might decide to get images another way.

Kidney function

MRI contrast is removed from the blood by the kidneys through the urine. It is easily removed from the body of people who have normal kidney function.

We may need to do a blood test to find out the level of your kidney function before we consider giving you contrast.

Nephrogenic Systemic Fibrosis (NSF) is an extremely rare condition that results in scarring or thickening of the skin and tissues throughout the body. It can occur days to years following exposure to gadolinium. It is severely disabling and often fatal. As NSF has almost only ever been seen in people with severely reduced kidney function and those on dialysis, every effort is made to avoid giving gadolinium to these patients. However, sometimes there is no good alternative and contrast is required to help rapidly and effectively diagnose serious organ and life-threatening diseases so effective treatment can be started. It is safe and reasonable for almost all patients with kidney disease and those on dialysis to receive contrast in these circumstances.

MRI and contrast while pregnant or breastfeeding

There are no proven risks to pregnant people or unborn babies from MRI scans without contrast, however, your doctor/clinician may delay your scan to later in your pregnancy (if safe to do so), if you are currently in your first trimester.

Generally, MRI scans that use contrast are not done during pregnancy due to the increased risk to your baby. Your doctor/clinician will discuss this with you if you require contrast.

If you are given MRI contrast and are currently breastfeeding, there is no need to stop breastfeeding for any period of time.

What are the risks of not having an MRI scan?

There may be adverse consequences for your health if you choose not to have the proposed procedure. Please discuss these with the referring doctor/clinician.



3. Are there alternatives?

Making the decision to have a procedure requires the patient/substitute decision-maker/parent/legal guardian/other person to understand the options available. Please discuss any alternative procedure options with your doctor/clinician.



4. What should I expect after the procedure?

If given contrast, it does not impact your ability to carry out normal activities and you should be able to continue with your day as normal.

The Radiologist (doctor) will review the final images after the procedure and send the report to your treating team.

You will receive the results of the examination from your treating team at your next follow-up appointment. Please make an appointment if you do not already have one.



5. Who will be performing the procedure?

Radiographers, doctors, nuclear medicine technologists, sonographers, nurses, and medical imaging assistants make up the medical imaging team. All or some of these professionals may be involved in your procedure.

A doctor/clinician other than the consultant/specialist may assist with/conduct the clinically appropriate procedure. This could include a doctor/clinician undergoing further training, however all trainees are supervised according to relevant professional guidelines.

If you have any concerns about which doctor/clinician will be performing the procedure, please discuss this with the doctor/clinician.

For the purpose of undertaking professional training in this teaching hospital, a clinical student(s) may observe medical examination(s) or procedure(s) and may also, subject to your consent, assist with/conduct an examination or procedure on a patient while the patient is under anaesthetic.

You are under no obligation to consent to an examination(s) or a procedure(s) being undertaken by a clinical student(s) for training purposes.

If you choose not to consent, it will not adversely affect your access, outcome or rights to medical treatment in any way.

For more information on student care, please visit www.health.qld.gov.au/consent/students.



6. Where can I find support or more information?

Hospital care: before, during and after is available on the Queensland Health website www.qld.gov.au/health/services/hospital-care/before-after where you can read about your healthcare rights.

You can also see a list of blood thinning medications at www.health.qld.gov.au/consent/bloodthinner.

Further information about informed consent can be found on the Informed Consent website www.health.qld.gov.au/consent. Additional statewide consent forms and patient information sheets are also available here.

Staff are available to support patients' cultural and spiritual needs. If you would like cultural or spiritual support, please discuss this with your doctor/clinician.

Queensland Health recognises that Aboriginal and Torres Strait Islander patients will experience the best clinical care when their culture is included during shared decision-making.



7. Questions

Please ask the doctor/clinician if you do not understand any aspect of this patient information sheet or if you have any questions about your medical condition, treatment options and proposed procedure.

If you have further questions prior to your appointment, please contact the Medical Imaging department via the main switchboard of the facility where your procedure is booked.



8. Contact us

In an emergency, call Triple Zero (000).

If it is not an emergency, but you have concerns, contact 13 HEALTH (13 43 25 84), 24 hours a day, 7 days a week.

References:

- * Formal arrangements, such as parenting/custody orders, adoption, or other formally recognised carer/guardianship arrangements. Refer to the Queensland Health 'Guide to Informed Decision-making in Health Care' and local policy and procedures.