

## Radiology

# MRI: adult under general anaesthesia

You have been advised by your doctor to have an MRI scan. In your case, this scan will be performed under a general anaesthetic (where you are asleep during the MRI scan and unaware of the scan occurring). This leaflet will explain what the examination involves.

If you have any queries or concerns, please call the telephone number on your appointment letter. If you feel unhappy with any part of your care, please ask to speak to the superintendent radiographer.

**Please read this leaflet carefully to make sure you successfully prepare for the examination.**

- Please contact the X-ray Department if your weight is equal to or more than 133 Kg (21 stone) – You may require an alternative examination.
- If you are above the age of 65 years and you need a contrast-enhanced scan you will need to have had a blood test within 3 months of your MRI examination so that your e-GFR can be checked before the administration of any contrast media.

### **If you have not had a recent kidney function (eGFR) blood test:**

- If you have been referred by your GP, please ask your GP for an e-GFR blood request form.
- If you have been referred by a hospital consultant / clinician, please contact the department you were referred from and ask for an e-GFR blood request form.



## Patient Information

### Having a blood test

There are over 30 blood test clinic locations in and around Coventry. Most clinics have appointments you can book in advance.

Please visit [www.uhcw.nhs.uk/bloodtests](http://www.uhcw.nhs.uk/bloodtests) to find the clinic most convenient for you and to book an appointment online.

Our main Blood Test Clinics are based at:

- City of Coventry Health Centre, Stoney Stanton Road, Coventry CV1 4FS
- University Hospitals Coventry and Warwickshire, Clifford Bridge Road, Coventry CV2 2DX
- Hospital of St Cross, Barby, Rd Rugby, CV22 5PX
- George Eliot Hospital, College Street, Nuneaton, CV10 7DJ
- Warwick Hospital, Lakin Rd, CV34 5BW
- Stratford Hospital, Arden Street, Stratford Upon Avon, CV37 6NX

If you have had your blood test performed within the last 3 months at a GP practice outside of the Coventry area, **you** need to bring the e-GFR result to your appointment.

Please note: If the blood test results are not available when you arrive for your scan it is unlikely that your scan will be performed. The appointment will therefore need to be rescheduled for after you have had the blood test.

You must not bring children with you for your MRI scan appointment.

### Points to remember

- Please bring any medications, sprays, or inhalers that you are taking with you.
- If you are on medication from your doctor, please continue to take it as normal.
- We ask you to leave any valuable possessions at home.

## Patient Information

- You will receive a separate letter advising you where to arrive on the day of your scan.
- If you arrive late, we may not be able to scan you that day.
- **You will need someone to drive you home after the examination. An adult will need to stay with you for 24 hours after your general anaesthetic.**
- **You must not operate heavy machinery, sign any legal documents, drink alcohol, drive, or return to work for 24 hours after your scan if it is performed under general anaesthesia.**
- If we are unable to find out the MRI compatibility of any device which is within or attached to your body, we will not perform the scan. Your new appointment will be made once the correct information is made available to the department.

## What is an MRI?

An **MRI** is a test which uses a powerful magnet and a computer to produce detailed images of any part of the body. The MRI scanner does not use X-rays. This part of the examination will be performed by a radiographer.

## Preparation

- On the day of your scan, you can have a light breakfast before 6am
- After this you can drink **water only** up until 10am
- You must not chew gum or suck sweets after 6am on the morning of your scan
- It is important that you follow these instructions otherwise it will not be safe to perform your scan under general anaesthesia
- Please also **refrain from smoking** on the day of the MRI scan
- We recommend that you attend for your examination in clothing that contains no metal fastenings, zips, or decorations. If this is not possible, a hospital gown will be provided.
- Please complete the enclosed safety questionnaire and bring it with you to your appointment.

### **Risks of the procedure**

No short-term harmful effects have been found from MRI scans. The use of magnetic fields is not thought to be harmful, although long-term side effects are unknown.

### **Risks of the anaesthetic**

General anaesthesia on the whole is very safe, but a small proportion of patients experience side-effects. Your anaesthetist is trained to make sure that you remain as safe as possible and that these risks are reduced.

If the risk to you from having a general anaesthetic was high, then it is unlikely that we would have offered you this option.

You will see an anaesthetist on the day of your scan who will discuss the risks related with the general anaesthetic and will be available to answer your questions.

You will be required to sign a consent form stating that you accept these risks and wish to proceed.

- It is common to experience mild discomfort during the injection of any medication.
- You may wake up with a sore throat or feel sick (nausea/ vomiting).
- Some patients experience a headache, itching, blurred vision, and dizziness.
- You may feel sleepy for the remainder of the day.
- Confusion can also happen after the anaesthetic.
- You may have general aches and pains from lying still during your scan.
- As you go off to sleep or as you wake up, there is a small risk of injury to your lips, tongue, and teeth.
- There is also a small risk of damage to the cornea of your eye.
- Serious side-effects are very rare, but include: developing a chest infection, worsening of an existing medical condition, a heart attack or stroke, serious allergy to medication that is given (including any contrast media required for the MRI scan), equipment failure causing harm and awareness (becoming conscious during part of your procedure).

### **Risks of contrast**

#### **What is gadolinium contrast medium?**

- Gadolinium contrast media (sometimes called MRI contrast media or 'dye') are chemical substances used in magnetic resonance imaging (MRI) scans. When injected into the body, gadolinium contrast medium enhances and improves the quality of the MRI images (or pictures).
- The contrast medium is injected into a vein intravenously as part of an MRI scan, and removed from the body by the kidneys.
- Before the MRI scan, you will be asked about conditions that might mean a gadolinium injection would not be recommended, such as pregnancy, previous allergic reaction, and severe kidney disease. If you have any of these conditions, then you will more than likely not be given gadolinium.

#### **Why do I need to have gadolinium contrast medium?**

- Gadolinium contrast medium is used to improve the clarity of the images or pictures of your body's internal structures. This improves the diagnostic accuracy of the MRI scan. For example, it improves the visibility of inflammation, tumours, blood vessels and, for some organs, blood supply.

#### **Pregnancy, possible pregnancy and lactation**

If you are pregnant, or think you might be pregnant, please inform your doctor or radiologist before having the procedure, so that your doctor can consider and talk to you about any risks and benefits of having an MRI scan, and a possible gadolinium injection, for you and your unborn baby.

Where relevant, you will be asked about the possibility of pregnancy as part of the safety screening before any MRI scan. If you are pregnant or possibly pregnant, it is unlikely that you will have a gadolinium injection unless it is absolutely essential.

If an injection is recommended, this would be discussed with you and your doctor before giving you the injection.

## Patient Information

If you are breast-feeding, it is safe to continue normal breast-feeding after the Gadolinium contrast medium has been given. The amount received by your baby is so small it is not thought to represent any danger to your child.

### **If I have side-effects from the gadolinium contrast medium injection, when will they occur? What can be done to treat or prevent these side effects?**

Gadolinium contrast medium is generally very safe. Side effects or reactions are uncommon but can happen. The most common side-effects of headache, feeling sick (nausea) and dizziness occur in a small number of patients only, but if they do occur, they will be noticed within minutes of the injection.

- Less often, in around 1 in 1000 patients, an itchy skin rash might appear a few minutes after the injection. The rash will usually settle down by itself.
- Severe allergic (anaphylactic) reactions to gadolinium contrast medium have occurred but are extremely rare. These severe reactions, which might involve difficulty breathing and swelling of the lips and mouth, occur in around 1 in every 10,000 people who have gadolinium.
- If you have had a history of a previous allergic reaction to a gadolinium contrast injection, or a severe allergic reaction to some other material, please tell your referring doctor and/or the Radiology facility where you are having the MRI. This will affect whether a further gadolinium injection is recommended.
- If you experience any symptoms of allergic reaction during your appointment time, you will be examined by a medical doctor before being sent home.
- Nephrogenic systemic fibrosis (NSF) is a rare condition associated with gadolinium contrast medium given to patients with severe renal (kidney) disease. Its onset occurs days, weeks, or months after receiving gadolinium, with almost all cases occurring within 6 months of the last dose. Since Radiology facilities began routinely screening patients for kidney disease, and withholding Gadolinium from those with severe renal disease, NSF has become extremely uncommon.

If you do have a history of kidney disease, please be sure to tell the staff at the MRI practice, so that they can check whether the disease is

## Patient Information

severe enough to mean that you should not receive gadolinium. This might involve a simple blood test of kidney function. (eGFR)

- Recently, it has been recognised that very small amounts of at least some forms of gadolinium contrast (about 1% of the injected dose) are retained in the tissues, mostly in the bones, with tiny amounts in the brain. This seems to be more likely with the same forms of gadolinium contrast that have a higher risk for NSF. At this stage, there are no known adverse effects from these very small amounts of retained gadolinium. This finding has made radiologists more careful to recommend gadolinium contrast, only where it is likely to assist the diagnosis.

## Safety

**Patients aged 12 to 55 years:** Although the risk to an unborn child from the MRI scan itself is minimal, there are risks associated with having a general anaesthetic if you are pregnant. You will be asked to confirm that you are not pregnant before the examination can proceed.

If you are pregnant there are some circumstances where the clinical value of a scan outweighs any risk connected to the scan. This will be decided in conjunction with the referring clinicians and yourself.

It may not be possible for certain patients to have this examination due to the strong magnetic field produced by the MRI scanner.

- Patients who have a pacemaker, ear implants, surgical clips or any implants within their head or body should contact the MRI department using the telephone number on your appointment letter to check whether or not their scan can be performed.
- Patients who have had an accident involving metal fragments penetrating your eyes should contact the MRI department using the telephone number on your appointment letter. You will need to have a plain X-ray of your head to confirm there are no metal fragments remaining in your eyes. This must be arranged before your MRI scan can be safely performed.



### What will happen when I arrive?

- You will be asked to arrive onto a ward, **not directly to the MRI department**, and exactly where and when to arrive will be explained to you in **another letter**.
- On the ward, a nurse and a doctor will ask you some questions and complete some admission paperwork. You will also be seen by the anaesthetic doctor who will look after you during your scan to answer any questions about the anaesthetic.
- The scan may occur at any point during the afternoon. There is likely to be a period of waiting in the ward area. Please feel free to bring a book or magazine to entertain yourself while you wait.
- A porter will come to collect you from the ward when it is time for your scan. You will be taken to the waiting area in the MRI department.
- Please try to leave all of your valuables at home as you will not be permitted to take them into the scan room with you. Any credit cards, valuables and metal objects that are in your possession must remain on the ward.
- You will be asked to remove any spectacles, contact lenses, hearing aids and dentures before the examination.
- A radiographer and radiology department assistant will complete the safety checklists with you.

### During your examination

- You will have a tube (cannula) inserted into one of your veins which will enable the administration of anaesthetic medication and/or contrast media during the MRI scan.
- You will then be given anaesthetic medication through this cannula
- While you are asleep, the anaesthetic doctor will remain with you to make sure that you remain asleep, safe, and comfortable for the duration of your scan.
- We will continually monitor your blood pressure, oxygen levels and your heart rate and heart rhythm before, during and after the anaesthetic.
- While you are under general anaesthesia, you will be transferred into the MRI scanner, have the scan performed and then be transferred to a recovery area where you will be looked after by a nurse until you are awake enough to return to the ward.



## Patient Information

### After your examination

- You will return to the ward, and you will be discharged home once it is safe to do so
- You will stay with us a couple of hours after you initially wake from your anaesthetic
- There is a small possibility that you may need to stay in hospital overnight if you feel nauseated or remain drowsy. Please make sure you have prepared for this should it occur.
- If you have any problems after the examination, please contact your GP.

### How do I get the results?

The results will not be given to you immediately. They will be sent to the doctor who referred you to us for this examination once a formal report has been generated.

### Further information

If you have any questions or require more information, please contact the MRI Department using the contact details on your appointment letter.

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact the telephone number on your appointment letter and we will do our best to meet your needs.

The Trust operates a smoke free policy.

#### Document History

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### Did we get it right?

We would like you to tell us what you think about our services. This helps us to make further improvements and to recognise members of staff who provide a good service.

Have your say. Scan the QR code or visit:

[www.uhcw.nhs.uk/feedback](http://www.uhcw.nhs.uk/feedback)

