

Radiology Department

MRI: Cardiac

Introduction

You have been advised by your doctor to have a MRI scan. This leaflet will explain what the examination involves. It may not answer all your questions, so 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 three 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 blood test:

If you have been referred by your GP then please ask your GP for an e-GFR blood request form.

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

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.



Patient Information

Please visit www.uhcnhs.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 then **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.

- If you have to bring children requiring supervision with you for your MRI scan appointment please make sure that they have someone to supervise them whilst you are having your scan. Staff within the department are unable to help with the supervision of young children. In these instances you may be asked to rebook your appointment to a time more suitable for you to have childcare arrangements in place.

Points to remember

- Please bring with you to your appointment any sprays or inhalers that you are taking.
- If you are on medication from your doctor please continue to take it as normal (unless it is listed below).

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- Please arrive in the department **at least 20 minutes before** your appointment time so that we have time to go through your safety questionnaire and you will have time to change for your examination if appropriate.
- If you are late for your appointment there is a possibility that we may not be able to scan you, if this happens you will be sent another appointment.
- 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 a MRI?

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

- It is recommended that you attend for your examination in clothing that contains no metal fastenings, zips or decoration. A hospital gown will be provided to wear so we can attach ECG tabs to you.
- Please complete the enclosed safety questionnaire and bring it with you to your appointment.
- **Stop taking any products which contain caffeine for 24 hours before the test (for example tea, coffee, chocolate or any fizzy drinks). This includes decaffeinated products as well.**
- If you have asthma or known allergies to medication please let us know.
- Please bring a list of the medication that you are taking with you.

Risks of MRI

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 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 intravenously (into a vein) as part of an MRI scan, and eliminated from the body through the kidneys.
- Before the MRI scan, you will be asked about conditions that might mean a gadolinium injection would not be recommended (e.g. 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.
- 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 minority 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, as 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 severe enough to mean that you should not receive gadolinium. This might involve a simple blood test of kidney function.
- 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

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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 help the diagnosis.

Safety

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.
- If you have had an accident involving metal fragments penetrating your eyes or you are or have ever been a metal worker, you should contact the 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.

Patients aged 12-55 years: Although the risk for the unborn child is minimal, 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.

What will happen when I arrive?

- On arrival at the Radiology/ X-Ray Department, please report to the reception desk where you will be directed to the MRI department.
- If necessary you will be asked to undress and put on a suitable gown. Please feel free to bring your own dressing gown.
- 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. You will be asked to remove any credit cards, valuables and metal objects that are in your possession and they will remain with the radiographers whilst they perform the examination.
- You will also be asked to remove coloured contact lenses and hearing aids before the examination.

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- A Radiographer or Radiology Department Assistant will go through the safety checklists with you.

During your MRI examination

- You will be asked about your medical history. An ECG tracing of your heart will be performed
- The radiographer will help you onto the MRI scanner table which will move into the open ended MRI scanner. The radiographer operating the scanner can see you throughout the scan. It is important that you remain very still to ensure good quality images
- A tube (cannula) will be inserted into your arm.
- Before the scan is commenced, a blood pressure cuff will be applied to your arm for monitoring purposes
- The entire scan will take around one hour. If a stress cardiac scan has been requested, this is where we 'exercise' the heart with a special drug to test the heart arteries and blood flow into the heart [plumbing of the heart]. Here, after the initial pictures are taken, the drug will be administered through the cannula in your arm to exercise the heart. The drugs that we use for this are either adenosine or regadenoson, or in very rare cases dobutamine. These are all safe and well-established drugs that have been used routinely for this purpose across the world for many years.
- The medicine is given either as a short injection or as a drip (infusion) for up to 6 minutes, during which time you may experience facial flushing, shortness of breath, chest discomfort, light-headedness, headache or nausea. These are all normal to experience and are very short-lived and resolve very shortly after stopping the drug.
- During the scanning you will hear rhythmic tapping sounds which may become quite loud; this is normal. You will be given headphones or earplugs to protect your ears from the noise.

After your examination

- Once the examination is complete you can get dressed and go home;
- If you have any problems after the examination please contact your GP.

Patient Information

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.

To give feedback on this leaflet please email feedback@uhcw.nhs.uk

Document History

Department:	Radiology
Contact:	27122
Updated:	June 2021
Review:	June 2023
Version:	5.1
Reference:	HIC/LFT/1928/15