

Information for Patients and Carers

Magnetic Resonance Imaging (MRI) Scan under Anaesthetic for Children

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What is an MRI scan?

Magnetic Resonance Imaging (MRI) is the name given to a technique which takes very detailed pictures of the inside of your body. It uses a powerful magnetic field and radio waves, together with an advanced computer system to build up a series of images.

The scanner is an open-ended tube, surrounded by a large circular magnet.

Important information

It is very important to contact us before coming for your appointment if your child has or has had any of the following:

- A pacemaker or implanted defibrillator
- A neuro-stimulator
- A cochlear implant
- An aneurysm clip
- A shunt in their head
- A penetrating eye injury with metal fragments
- A shrapnel injury
- Any surgery which involved placing metal implants or clips
- A recent endoscopy procedure involving clips or swallowing a capsule

Or if any of the following apply:



- You need an interpreter. Please tell us this when you receive your child's appointment so that we can arrange an official interpreter for you
- Your child has had a previous allergic reaction to MRI contrast agent Gadolinium (dye)

If you fail to inform us of any of the information above, we may not be able to perform the scan on the day of the appointment.

Information regarding the anaesthetic

Why does your child require an anaesthetic?

During the MRI scan we need your child to remain completely still as any movement can reduce the quality of the images. An anaesthetic enables the scans to be completed while your child is asleep allowing clear, still pictures to be taken.

What is an anaesthetic?

- An anaesthetic consists of a combination of medications given either as a gas to breathe or as an injection or both together
- These drugs will send your child to sleep for the duration of the scan so your child is unaware of the scan, not frightened and is able to remain still
- The anaesthetic will be given by an anaesthetist (a doctor) who is medically trained for this role

Are there any special preparations required?

Your child will have to follow some restrictions to eating and drinking prior to the anaesthetic being administered. It is important your child follows the starving instructions shown below:

- Your child can have their last solid food, milk or formula milk, six hours prior to the scan appointment time. Your child's stomach must be as empty as possible of food and milk as this reduces the risk of vomiting during and after the scan

- Your child can have their last breast milk feed four hours prior to the scan appointment time (this does not include cow's milk or formula milk)
- Your child may continue to have clear fluids only for up to 2 hours prior to the scan appointment time. Clear fluids include water, diluted squash or cordial or clear fruit juices (without pulp or particles). If necessary, wake your child to give them a drink of clear fluid. This reduces the chances of them being sick after the scan and helps them to recover

Please continue with your child's medication as normal. Please follow the above instructions completely as failure to do so may mean we cannot proceed with the scan.

What happens when I arrive at the department?

When you arrive at the MRI department you should go to the reception desk where you will be booked in and asked to have a seat in the waiting area.

You and your child will be taken to an interview room where a radiographer will check some details with you.

The radiographer will also complete a safety questionnaire for you and your child to make sure you are both safe to enter the MR area. This is because the scanner has a strong magnetic field.

Upon leaving the waiting room and entering the MR area, you will be asked to remove anything that may contain metal, such as jewellery, hair grips and body piercings.

You will be provided with a locker to put your belongings into whilst you accompany your child.

The anaesthetist and an anaesthetic assistant will explain the anaesthetic procedure to you and answer any questions you may have. You will then be asked to sign a consent form for the anaesthetic.

Sometimes, a local anaesthetic cream is applied to the back of your child's hand. This cream numbs the area and so it helps to reduce the cannula hurting when it is put in. A cannula is a thin plastic tube that is placed under the skin into a vein. A needle is used to put the cannula in but is removed immediately and the plastic tube secured in place. Your child may be able to go to sleep using a mask and gas or with an injection through a cannula.

Please feel free to discuss this with the anaesthetist. If your child is very anxious a pre-medication may be given. This is a small drink of medicine that calms and relaxes your child. This takes roughly 30 minutes to work.

Going into the MRI room

If gas is used, the anaesthetist will either cup a hand or hold a mask over your child's nose and mouth. Your child may become restless as they go to sleep.

If an injection is used, the anaesthetic medication is injected into the cannula, and your child will go to sleep quickly.

Some parents may find this part of the procedure unsettling. Please be assured that our staff will be there to support you.

You will then be asked to leave your child in the care of the anaesthetic and MRI team. The radiographer will then perform the MRI scan.

What will happen during the MRI scan?

During the scan your child will be asleep and lying on the scanning table. Equipment known as coils will be placed over or on the area being scanned. The purpose of the coil is to improve the quality of the MRI images.

The radiographer will ensure your child is comfortable with the use of pads and pillows. The scanner is very noisy whilst it acquires the images and ear protection is always provided for your child.

Your child's breathing and heart will be closely monitored by the anaesthetist throughout the whole procedure, which will take approximately 60 minutes, or longer depending on the area(s) of the body being scanned.

During the scan your child may require an injection of a contrast agent (dye) called Gadolinium. This can give the radiologist more information about the body area being scanned. We will use the cannula already placed by the anaesthetist to inject the dye.

What happens after the MRI scan?

The images will be checked to ensure they provide all the information required. The anaesthetist will then wake your child up and they will be allowed to recover in our recovery bay.

At this stage you will be invited back to be with your child as they recover. When our anaesthetic team are satisfied that your child has recovered sufficiently you will either be taken to the children's ward for a further recovery period or discharged from the MRI department after a full recovery.

Please be prepared to be on the ward or in the MRI department for up to 4-5 hours.

The anaesthetist will decide where your child recovers depending on the type of anaesthetic administered and the length of time the examination has taken.

Some children do feel nauseous or are sick after an anaesthetic. Anti-sickness medicine can be given. The anaesthetic staff or the nursing staff on the ward will let you know when your child is ready to go home. Most children only stay for a few hours after the scan. Some may need to stay overnight.

When will I get the scan results?

The radiographer will not be able to give you your results on the day of your scan as the MRI images will need to be interpreted carefully by a

Radiologist. The results will be sent back to the person who referred you for the scan.

Are there any risks to having the MRI scan?

The MRI scan poses no risk when appropriate safety guidelines are followed. All members of staff follow appropriate safety measures before, during and after the scan.

There is a very rare risk of an allergic reaction if the contrast agent Gadolinium is injected. Such reactions are usually mild and easily controlled.

If your child experiences symptoms of an allergic reaction, the anaesthetic team and radiographers will be available for immediate assistance.

It is known that small amounts of Gadolinium may remain in the brain or other tissues after an injection of it, although there is currently no evidence that these small amounts cause any harm.

If your child requires an injection of Gadolinium, a radiographer will go through a checklist with you to make sure this is suitable for your child.

How safe is anaesthesia?

Modern anaesthetics are generally safe, and serious problems are rare. Most children recover quickly after anaesthesia.

Common minor side effects (affecting more than 1 in 10 children) include:

- Headache or sore throat

- Nausea or dizziness

- Agitation

- Other changes in behaviour e.g. anxiety

Short-term discomforts like sickness or sore throat usually resolve quickly and can be treated with medication.

Risk of complications cannot be removed completely; however, the Anaesthetist can discuss this with you in more detail when you attend for your child's scan.

Further information on anaesthetic risks is available at:

<https://www.rcoa.ac.uk/patients/patient-information-resources/anaesthesia-risk>

Caring for your child at home

After the anaesthetic, some children may be unsettled. This is a common reaction, and children usually return to normal within 3-4 hours.

Contact details

If you have any worries or questions about your child relating to their recovery, please phone Ward 8 (24 hours) if your child recovered there, or the MRI department (8am-8pm), who will contact the relevant anaesthetist with your concerns so we can provide you with advice.

- Ward 8: 01772 522398 (24 hours)
- MRI department: 01772 523999/01772 522014 (8am-8pm)

Sources of further information

www.lancsteachinghospitals.nhs.uk

www.nhs.uk

www.accessable.co.uk

www.patient.co.uk

www.lancsteachinghospitals.nhs.uk/veteran-aware

<https://www.rcoa.ac.uk/patients/patient-information-resources/anaesthesia-risk>

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www.lancsteachinghospitals.nhs.uk/patient-information-leaflets

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If you want to stop smoking, you can also contact Smokefree Lancashire on Freephone 08081962638

Please ask a member of staff if you would like help in understanding this information.

This information can be made available in large print, audio, Braille and in other languages.

Our patient information group review our leaflets regularly, if you feel you would like to feedback on this information or join our reading group please contact on email address:

patientexperienceandinvolem@LTHTR.nhs.uk

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