NHS
The Leeds Teaching Hospitals
NHS Trust

MRI Scan for Children under General Anaesthesia

Information for parents & carers

leeds children's hospital
caring about children

Why have I been given this leaflet?

Your Doctor has asked for your child to have an MRI scan under a General Anaesthetic. This is to help with a diagnosis or to follow-up a known condition. This leaflet will explain what to expect when you come to the MRI department for the scan and how best to prepare your child.

What is an MRI scan?

MRI stands for magnetic resonance imaging. An MRI scan uses a combination of a strong magnet and radio waves to produce detailed pictures of the inside of your childs body.

Why does my child need an anaesthetic?

During the scan your child will need to keep absolutely still, lying inside the scanner. Most scans take around an hour, and the scanner is very noisy during some of the scanning sequences. Adults and many older children can manage this, but for many children an anaesthetic is needed to get clear pictures.

How long will it all take?

You should expect to be in the hospital for 3-6 hours. Before the scan your child will be weighed and have their temperature and blood pressure taken. You will also meet the anaesthetist who will check that your child is well enough for the anaesthetic, fasting instructions have been followed, explain what will happen, answer any questions and ask you to sign a consent form.

After the scan there can be big differences in the amount of time before children feel well and ready to go home. Some children have long scans, and some children are slower to recover from anaesthetic. Before you take your child home we make sure they eat and drink and feel back to normal.

On the day

Where do I bring my child?

You should bring them directly to the location at the time and date stated on your letter. We have given some very **specific fasting instructions** for your child **and it is absolutely essential** that these are followed. This is for important safety reasons involving the anaesthetic. If your child arrives and has not been fasted appropriately, we may have to reschedule your scan for another day.

There is limited space in the MRI department and there will be other children waiting for scans so if possible a maximum of two adults, one of whom is the legal guardian should accompany your child. We require the legal guardian to sign the consent form for anaesthesia so that the scan can be done.

You must not bring any other children. Remember to bring your child's favourite toy, comforter or dummy with you and you should also bring a drink and snack/milk for them to have when they wake up.

After you have been checked in, one of our staff will carry out some assessments of your childs general health, including temperature, pulse, oxygen saturations and weight. We will also ask some questions about their previous medical history, fasting times and may apply a local anaesthetic cream.

You will have a chance to talk to the Anaesthetist and we will ask for your consent for the procedure. Feel free to ask any questions if there is anything we haven't explained.

One parent or carer can come with your child to the anaesthetic room, where the anaesthetist will give the anaesthetic. One of our staff will then escort you back to the waiting room and the anaesthetist will look after your child while the scan is performed. Our staff will advise how long your childs procedure should take, so you will have time to get some refreshment for yourself.

What should I bring with me?

Your child needs to wear **something loose fitting and without zips or metal fastenings** for the scan. You may want to bring a favourite toy or comforter for your child.

Please bring a small snack and drink for your child to have after the scan

If your child is unwell the day before the scan, please call us on 0113 3922041 / 0113 3922042 between 0800 - 1700 hrs to check that we can go ahead with the anaesthetic or whether it should be rescheduled for another day.

If your child is unwell on the day of the scan and you are not coming, please phone us on the above number to let us know, so the scanner time will not be wasted and another child can have their scan.

About the MRI scan

Is the MRI scan safe?

It is a very safe test, with no known side effects, but there are lots of safety precautions because of the powerful magnet. We check everyone coming near the scanner for previous operations or accidents which may have left metal in their body. We will ask you to complete a safety checklist about your child,and ask you about metal implants before you come near the scanner. If you have a heart pacemaker you will not be able to enter the scanner area. Please bring your child to the hospital in an outfit with no zips or metal fastenings and check their pockets for any loose metal items.

How long will the scan take?

This depends on which part of your childs body is being scanned and the information that the doctor needs. The radiographer (person doing the scan) will tell you how long he/she expects your childs scan to take. Most children are asleep for about an hour, but some scans can last up to 2 hours.

Will my child feel anything?

Your child will go to sleep in a room next to the scanner, and will be moved out of the scanner to wake up in the recovery area. They will not be aware of being in the scanner.

The scanner is a short tunnel and, at times during the scanning process it makes a loud banging noise. We will give your child headphones to wear, to protect their hearing while they are asleep.

For some scans we may need to give an injection of contrast (dye). This shows up on the scan and gives us more detailed pictures, particularly of your child's blood vessels. The injection will be given through a cannula (plastic tube) which a doctor will place in a vein.

Are there any risks to having an injection of contrast?

The contrast (dye) contains gadolinium, which may, occasionally, cause allergic reactions. The most common allergic reactions (I in 10,000) are mild ones such as headaches, nausea and vomiting, sneezing, wheezing, runny nose, eye irritation, itching or skin rash. Severe reactions, are rare (1 in 70,000) Before the scan we will check whether your child has had any previous allergies.

If your child has any problems with their liver and/or kidneys please raise this with the doctors on your childs admission, as extra tests may be required before administering any contrast.

About the Anaesthetic

Is general anaesthesia safe?

In modern anaesthesia, serious problems are very uncommon. Risk cannot be removed completely, but modern equipment, training and drugs have made it extremely safe.

Most children recover quickly and are soon back to normal after their anaesthetic. Some children may suffer side-effects like sickness or a sore throat. These usually last only a short time and there are medicines available to treat them if necessary. Some younger children experience a short period of agitation and distress as they are waking up. In a small

number of children this agitation known as 'emergence delirium' lasts longer, occasionally up to 40 minutes. Although this is not harmful to your child it can be distressing for parents as it is difficult to comfort your child during this period. A member of the anaesthetic team will stay with you and your child to make sure that your child is safe and comforted.

The exact likelihood of complications depends on your child's medical condition and the type of anaesthesia your child needs. The anaesthetist can discuss this with you in detail before the scan.

For a child in good health having an anaesthetic for a scan

- 1 child in 10 might experience a headache, sore throat, sickness, dizziness or agitation on waking
- 1 child in 100 might be mildly allergic to one of the drugs that has been given resulting in a mild rash
- 1 child in 20,000 might develop a serious reaction (allergy) to the anaesthetic which would need immediate treatment
- 1 child in 100,000 might suffer serious injury or death after an anaesthetic.

Throughout the whole life, an individual is at least 100 times more likely to suffer serious injury or death in a road traffic accident than as a result of anaesthesia

The risk of death from anaesthesia for healthy children having MRI scan as a none emergency procedure is probably less than 1;100,000. Most of the deaths that occur around the time of anaesthesia are not directly caused by the anaesthetic but by other reasons connected with the health of an individual.

To read about general risks associated with having an anaesthetic or an anaesthetic procedure, please see the risk section on the royal college of anaesthetist website:

https://rcoa.ac.uk/patientinfo/risks/risk-leaflets

There is ongoing research into the possible long-term effects of anaesthesia in babies and very young children. At present there is no strong evidence that anaesthetics are harmful to development, and it is important to consider that any risk should be balanced against the overall importance of providing anaesthesia for a procedure.

Information on critical events in paediatric anaesthesia can be found online:

Incidence of severe critical events in paediatric anaesthesia in the United Kingdom: secondary analysis of the anaesthesia practice in children observational trial (APRICOT study)

https://onlinelibrary.wiley.com/doi/abs/10.1111/anae.14520

RCoA
Royal College of Anaesthetists

Association of Paediatric Anaesthetists of Great Britain and Ireland

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Patient Information Forum

Common events and risks for children and young people having a general anaesthetic

This summary card shows some of the common events and risks that healthy children and young people of normal weight face when having a general anaesthetic (GA) for routine surgery (specialist operations may carry different risks).

Modern anaesthetics are very safe. There are some common side effects which are usually not serious or long lasting. Risk will vary between individuals, and will depend on the procedure and the anaesthetic technique used. Your anaesthetist will discuss with you the risks they believe to be most significant. You should also discuss with them anything you feel is important to you.

Very common
More than 1 in **10**
Equivalent to one person in your family

- **Sore throat**
- **Agitation on waking from GA**
  Mainly ages 1–6 years
- **Sickness**
- **Temporary changes in behaviour**
  eg, anxiety, sleep problems, bedwetting

Common
Between 1 in **10** and 1 in **100**
Equivalent to one person in a street

- **Minor lip or tongue injury**
- **Discomfort at injection site**

Uncommon
Between 1 in **100** and 1 in **1,000**
Equivalent to one person in a village

- **Breathing problems**
  Needing treatment
- **Skin damage**
  Mainly longer procedures

Rare
Between 1 in **1,000** and 1 in **10,000**
Equivalent to one person in a small town

- **Need for Intensive Care (unplanned)**
  1 in **2,400**
  Risk is higher for children under 1 year
- **Injury to eye**
  eg, scratch on eye
- **Damage to teeth**

Very Rare
1 in **10,000** to 1 in **100,000** or more
Equivalent to one person in a large town

- **Anaphylaxis**
  1 in **40,000**
  Severe allergic reaction to a drug
- **Awareness during an anaesthetic**
  1 in **60,000**
- **Death as a direct result of anaesthesia**
  1 in **100,000** to 1 in a **million**
- **Long-term disability**
  Less than 1 in **100,000**

More information

Our website has more on these risks as well as short videos to help children prepare for surgery.

Scan to find out more:

rcoa.ac.uk/childrensinfo

Things we all do in normal life, such as road travel, involve higher risks than the **Very Rare** risks above.

Leave your feedback on this resource at: surveymonkey.co.uk/r/testrisk or by scanning this QR code:

Churchill House, 35 Red Lion Square, London WC1R 4SG | patientinformation@rcoa.ac.uk | March 2022

How will my child be given their anaesthetic?

If you wish, you will be welcome to stay with your child until he or she is unconscious. Older children may lie on a trolley, and younger children may sit on a parents lap when the anaesthetic is given. Your child can either have anaesthetic gas to breathe or an injection through a cannula. The anaesthetist will talk to you before the scan. The anaesthetist is well trained to make the experience of going under anaesthetic pleasant for your child.

If the anaesthetic is given by gas, it will take a little while for your child to be anaesthetised. He or she may become restless as the gasses take effect. If an injection is used, you child will normally become unconscious very quickly.

Magic Cream (EMLA or Ametop) is a local anaesthetic cream put on the skin 45 minutes before injections so that they do not hurt. It works well for about 9 out of 10 children.

A cannula is a thin plastic tube that is placed under the skin, usually on the back of the hand. A needle (injection) is used to put the cannula in, but is then immediately removed.

A cannula can be left in place so that drugs can be given without the need for further injections.

As soon as your child is asleep you will be asked to return to the waiting room. Your child will be taken into the MRI scanner. The anaesthetist will monitor your child's blood pressure, pulse, temperature and breathing closely

Throughout the procedure, ensuring that he or she is safe and fully unconscious. Anaesthetic gases and/or drugs given into a vein will be used to keep your child anaesthetised.

What happens after the scan?

When your child wakes up, we will let you in to see them as soon as possible. Once they have fully woken up, we will seat you in an area where you can give them something to eat and drink. You will be able to go home once you, the

Anaesthetist and staff are happy that your child has woken up safely. You and your child need to be driven home in a private car by a family member, friend or taxi. You will not be allowed to take your child home in public transport.

You will be given additional information on managing your child at home following a general anaesthetic

The doctor who referred you for the scan will give you the results. They will usually contact you within two weeks, or you may already have a follow-up appointment.

Will my child need to be admitted to a ward?

We may discharge children from the MRI department, but some children can be slow to recover from the anaesthetic.

It may be necessary to transfer your child to the day (ward 49) or another in patient ward for further monitoring until they are well enough to go home.

Further Information

For more information you might find these websites useful

The association of Paediatric Anaesthetists of Great Britain and Ireland:

apagbi.org.uk/guidelines

This website has activities and video link for children to help them understand the anaesthetic.

https://www.apagbi.org.uk/children-and-young-people/videos-children

Information about the general risks of having an anaesthetic for older children and young people is available on the College website:

rcoa.ac.uk/patientinfo/risk

Useful video of an older child having an awake MRI scan at Leeds Childrens Hospital.

https://www.youtube.com/watch?v=xaVGsYbEnMM

Notes

Notes

What did you think of your care?

Scan the QR code or visit **bit.ly/nhsleedsfft**

Your views matter

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