

Skeletal survey and head scans for children under 2 years of age

Introduction

This leaflet is for those with parental responsibility for children who need X-ray's and scans when there are concerns raised for a child's welfare.

Why are any tests needed in this situation?

NHS hospitals and all their employees have a duty to protect children. Staff are encouraged and expected to raise concerns if they believe the care or welfare of a child or young person is at risk.

Although this can be upsetting and difficult for those with parental responsibility, the child's wellbeing and safety comes first.

If any concerns are raised, it is important that these are investigated fully. As part of the investigation, it is essential to identify any injuries. In younger children and babies, injuries can be difficult to find. For example, bruising on the surface of the brain can occur without any apparent injury to the outside of the head. Similarly, bones may be broken without any obvious external signs. X-rays and scans can help to diagnose these injuries.

What X-rays and scans will be needed?

A young child may require a skeletal survey X-ray examination and a computed tomography (CT) head scan.

Other tests may also be necessary, which could include ultrasound, nuclear medicine or magnetic resonance imaging (MRI) scans.

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Department

Paediatrics

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**Patient
Information****First appointment**

The skeletal survey is carried out by appropriately trained paediatric radiographers who are skilled in dealing with children. They will help you and your child throughout the examination. A nurse, or other healthcare professional, will also be present to help and support you and your child.

As mentioned above, a skeletal survey is an X-Ray examination of the whole body and will involve about 20 separate X-ray images. This can take from 1 to 2 hours to perform. Your child will need to keep still for each image to be taken. You may be asked to help hold your child still, although toys and other distractions will be available.

You may want to bring your child's favourite toy or comforter to help with this. Sometimes your child will be sedated; you will be able to discuss this with the doctor looking after your child's care.

The staff present will be able to help you in holding your child safely, so as to cause as little distress as possible to both you and your child. You will need to wear a special protective apron while holding your child to prevent your own exposure to X-rays. If you are pregnant, or could be pregnant, you must tell the radiographer. You will not be allowed to hold your child in this case.

It is not unusual for a child to become grizzly or even distressed during the procedure, due to the need to be still for the images. You will be able to comfort your child between X-ray images.

The radiographers who perform the X-rays will not know the result. The images will be reported on later by a consultant radiologist and will be discussed with you by the doctor looking after your child's care. It is best practice that these images are reported on by another consultant radiologist from a different hospital and this often takes some time. Once we have received these results, they will be shared with you in a timely manner.

**Patient
Information****Second appointment**

Sometimes recent injuries are not visible and will only be seen on images obtained later. The skeletal survey is not complete until a shorter second series of images has been taken. You will be given an appointment to bring your child back for these images.

You should make sure that your child returns for the second appointment which is usually 11 to 14 days after the first series. The process of taking the images will be very similar to the first appointment.

CT brain scan

A CT scan is performed by experienced radiographers and produces images of the brain and the skull. The scan is quite quick although your child will need to lie very still. If you are not pregnant you may be able to stay with your child. Sometimes sedation may be used to help keep your child still.

The radiographers who perform the CT brain scan will not know the result. The scan will be reported on later by a consultant radiologist and the results will be discussed with you by the doctor looking after your child's care.

MRI scan

It may be necessary for your child to have an MRI scan (Magnetic Resonance Imaging) of their brain and other areas. This will be performed by experienced radiographers.

The MRI scanner looks similar to a CT scanner but the interior is more like a tunnel.

An MRI scan can take up to 1 hour and is noisy. Your child will need to be perfectly still for this and may need a general anaesthetic so that they are asleep during the scan. The anaesthetist will explain to you the details of the anaesthetic before your child has the MRI. You will be asked to provide your agreement for this procedure to be carried out.

The radiographers who perform the MRI scan will not know the result. The scan will be reported on later by a consultant radiologist and the results will be discussed with you by the doctor looking after your child's care.

Patient Information

Can I stay with my child at all times?

Those with parental responsibility may be able to stay in the room with their child during these examinations. If you are allowed to stay, the radiographer will tell you where to stand/sit and will make sure that you and your child are safe. Sometimes you may be asked to assist staff in holding your child. The radiographer will help you to do this safely.

You do not have to remain in the room if you choose not to, as there will be experienced staff present to look after your child.

In the X-ray or CT scanner room you will be required to wear a heavy protective apron to shield you from the scattered radiation.

If your child is having an ultrasound or MRI scan you do not have to wear any protective clothing.

The MRI radiographers will go through a checklist with you to make sure that it is safe for you and your child to be in close contact with the MRI magnet. If there is any possibility that you may be pregnant, please tell the radiographer.

Pregnant mother or guardian

A baby in the womb can be particularly sensitive to the radiation of an **X-ray or CT scan**. If you are, or may be pregnant, you can accompany your child to the X-ray department. You may not be allowed in the X-ray or scanner room when the images are being taken. A friend or relative may be able to accompany your child if necessary. Professional health staff will always be there to look after your child.

Risks

Radiation

We are all exposed to background radiation. This is made up of cosmic rays, radon; from some foods and from the ground. Every X-ray gives us a small additional dose of radiation.

A skeletal survey is equivalent to a few months of background radiation.

A CT head scan is equivalent to about 18 months of background radiation.

Patient Information

These extra exposures to radiation slightly increase the lifetime cancer risk but the increase in risk is very small.

Your child will not be exposed to any more X-rays and scans than is absolutely necessary to complete the examinations. Before any examination that uses radiation is carried out, the benefits of having the examination are closely weighed against the risks of the radiation itself.

All X-ray doses are kept as low as reasonably practicable to ensure that images of a high diagnostic quality are obtained without exceeding accepted doses. This is particularly the case with children as they are still growing and more susceptible to radiation. The radiographers will use techniques to try to make sure that they achieve the correct X-ray dosage first time and use various methods to keep the dose to your child as low as possible.

Your child will not be exposed to any more radiation than needed to obtain the examinations required.

Further information

NHS UK – Radiation

Website:

www.nhs.uk/conditions/Radiation/Pages/Introduction.aspx

GOV UK- Radiation: risks from low levels of ionising radiation.2008

Website: www.gov.uk/government/collections/radiation-risks-from-low-levels-of-ionising-radiation

You can also ask for further information from your radiographer.

MRI

Extensive research has been carried out into whether the magnetic fields and radio waves used during MRI scans could pose a risk to the human body.

No evidence has been found to suggest that there is a risk, which means MRI scans are one of the safest medical procedures currently available.

Not everyone can have an MRI scan. For example, they are not always possible for people who have certain types of metal implants fitted, such as a pacemaker.

**Patient
Information**

A safety check will be done by the radiographer for you and your child before an MRI scan.

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Making a choice

Shared Decision Making

If you are asked to make a choice, you may have lots of questions that you want to ask. You may also want to talk over your options with your family or friends. It can help to write a list of the questions you want answered and take it to your appointment.



Ask 3 Questions

To begin with, try to make sure you get the answers to three key questions if you are asked to make a choice about your healthcare.

1. What are my options?
2. What are the pros and cons of each option for me?
3. How do I get support to help me make a decision that is right for me?

These resources have been adapted with kind permission from the MAGIC Programme, supported by the Health Foundation

* Ask 3 Questions is based on Shepherd HL, et al. Three questions that patients can ask to improve the quality of information physicians give about treatment options: A cross-over trial. Patient Education and Counselling, 2011;84: 379-85