

Medical imaging tests for children

This fact sheet will inform you and your child of what to expect when you arrive for a medical imaging test. Please read this fact sheet and other **more specific fact sheets** before your child's test. If you have any questions, ask your doctor.

It is important to partner with your doctor in the care of your child. When there is a concern or the condition of the child is uncertain, **parents should not be afraid to ask questions to learn more about the tests.**

Ask your doctor the following questions.

- Does my child really need this test or procedure?
- What are the risks? Will there be side effects? How accurate is this test? Will there be more tests needed?
- Are there simpler, safer options?
- What happens if we don't do anything?
- What are the costs?

Tests should be performed only when necessary and at the lowest possible radiation dose. This increases the benefits of these tests and decreases any potential risks. In Australia, medical imaging staff follow the ALARA principle (As Low As Reasonably Achievable) when doing tests.

Patient safety has been improved. For example, modern CT scanners are using lower and lower radiation doses. The individual dose depends on the age, gender, size and shape of the child, the test they will have and the equipment used.

Medical imaging – radiology

Medical imaging tests done in a radiology department include those using radiation such as plain x-rays, fluoroscopic x-rays (moving images), CT (or CAT scans) and some interventional procedures like a minor operation.

For children, it is worth discussing with your doctor things like MRI and ultrasound, which do not use radiation; however, they may not always be the most suitable test.

Medical imaging – nuclear medicine

Tests done in a nuclear medicine department include PET scans and bone scans. They use small amounts of radioactive material. This is injected, swallowed or breathed in and gives off gamma rays (similar to X-rays) to build a picture of what's happening inside the body.

The procedure

You will be given instructions on how to prepare for your child's scan. All imaging tests are different. It will also be useful to read the specific fact sheet for the test your child is going to have.

Your child will be most comfortable if you stay and support them through the test. This may not be possible if you are pregnant, so consider another familiar person to support your child.

Some imaging tests can be hard for your child to manage, so you and your doctor should discuss using medication (either sedation or a general anaesthetic) to help your child keep still or calm. Gentle hand-held restraint may be used for shorter examinations. For some tests, you and your child may be able to listen to music.

Some children might need to have an injection of a contrast to more clearly highlight what the doctor wants to see (see *Iodinated contrast* fact sheet).

Your child may need to change into a hospital gown or remove their outer layer of clothing. If this is the case, let them know this so they are prepared. They can change back into their normal clothes as soon as the examination is finished.

After the procedure

In most cases, you and your child will be able to leave as soon as the test is finished.

If your child has had sedation or general anaesthetic, you will need to stay long enough for your child to be fully awake and able to have something to eat and drink.

A specialist doctor looks at the pictures, and results are given to your referring doctor who will discuss them with you.

Risks involved

X-rays and CTs use a small amount of radiation with a small risk usually outweighed by the benefits of having the examination to your child's future health. There is a slight increase in the lifetime risk of cancer if your child has lots of these scans. If they have an ongoing illness or condition which requires a lot of imaging, it is important that you keep track of the number and type of scans they are having.

Contrast might be used in fluoroscopy, CT or MRI and this has some risk (see *Iodinated contrast* fact sheet).

There are risks involved with a general anaesthetic which will be discussed with you by the doctor if you require this for the procedure.

For more information

Choosing Wisely Australia: www.choosingwisely.org.au/resources/consumers/5-questions-to-ask-your-doctor

The Alliance for Radiation Safety in Pediatric Imaging: www.imagegently.org

InsideRadiology by the Royal Australian and New Zealand College of Radiologists: www.insideradiology.com.au

The Australian Radiation Protection and Nuclear Safety Agency: www.arpansa.gov.au

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