

# What you need to know about CT scans for children

A resource for parents and carers



In Australia, many children have a computed tomography (CT) scan each year. CT scans provide doctors with important information to help them care for children. This brochure answers some questions you might have if your child needs a CT scan.

## What is a CT scan?

- A CT scan uses X-rays, which provide images of what is hard and soft inside a body. These X-rays are taken by a rotating ring that is moved around the body. A computer then turns all the X-ray images into 3-D images.
- These 3-D images give doctors many views of what is happening inside your child's body. They are particularly useful for investigating problems in the head, chest and abdomen, and some fractures.
- Dentists and dental specialists (such as orthodontists) sometimes use CT scans, particularly a form of CT known as cone beam CT, to help them provide better dental care. Further information on dental imaging is available at [www.safetyandquality.gov.au/ctscansforkids](http://www.safetyandquality.gov.au/ctscansforkids).
- CT scans, including cone beam CT scans, involve use of radiation.
- Further information on radiation and medical imaging choices for children is available at [nps.org.au/imaging-choices-for-children](http://nps.org.au/imaging-choices-for-children).

## Benefits of CT scans, including in emergencies

- CT scans can provide information that other types of imaging are unable to provide. A CT scan may be the best choice for your child.
- In emergency situations, CT scans are often the quickest and most accurate way to see inside the body. Your child's doctor may decide that a CT scan is needed so that they can make urgent decisions about treatment, including if there is serious trauma to the head, chest or abdomen.

## Risks of CT scans

- CT scans use higher doses of radiation than other types of imaging tests, including plain X-rays.
- Children are more sensitive to the effects of radiation because their bodies are still developing.
- Use of CT scans in children has been linked to a slight increase in the chance of developing cancer later in life. One extra case of cancer has been estimated for every 1800 CT scans, about 10 years after exposure.<sup>1</sup> For comparison, 1 in 2 men and 1 in 3 women will develop cancer in their lifetimes.<sup>2</sup> Further information is available at [nps.org.au/radiation-risks-in-children](http://nps.org.au/radiation-risks-in-children).

## Benefits versus risks

- Your child should have a CT scan if their doctor or dentist considers that the benefits of the scan are greater than the small risks.
- Your child's doctor or dentist can advise you about the benefits and risks to consider.

## What can be done to reduce radiation exposure from CT scanning?

- Let the doctor or dentist know if your child has had a CT or another type of scan before, because the results of these earlier tests may be helpful. This is particularly important if your child needs regular CT scans for an ongoing health problem.
- Take previous scans and X-rays to your child's appointments, including dental appointments.
- You can ask your child's doctor or dentist why they have decided a CT scan is necessary. If a diagnosis is not required urgently, they may consider other options, including a 'wait-and-see' approach.
- It is always okay to ask your child's doctor whether any other tests could be used that do not use radiation. The doctor may consider other types of imaging that don't use radiation, such as ultrasound and magnetic resonance imaging (MRI). However, these other tests may not give them the information they need for your child's care, or may not be readily available where you live.
- Before your appointment, ask your CT imaging service how they will keep your child's radiation dose as low as possible. If the service can't 'kid-size' the radiation dose, talk to your child's doctor or dentist.

## Preparing your child for a CT scan

- Bringing along a favourite toy can help your child keep still during the scan. CT scans are generally quick, but if your child moves or cannot hold their breath if required, it can blur the images so that a scan may need to be repeated.
- Sometimes, sedation or a general anaesthetic is needed for children who are unable to stay still or hold their breath for the scan.
- CT scans sometimes involve a contrast agent – a special drink or an injected dye. This contrast moves through the body and helps certain problems show up more clearly on the scan.
- If your child needs contrast, sedation or a general anaesthetic, you will be given further information about this to help prepare your child.
- Many hospitals have information on their websites on how to get your child ready for their CT scan and other medical procedures. These hospitals might also have a person who can help your child practise having a scan.

- If your child is to have their chest or abdomen scanned, you can help them practise holding their breath at home before the scan. You and your child can also watch a useful YouTube video, 'Having a CT scan of your chest'.

## If you still have questions, who should you talk to?

- If possible, you should first talk to the doctor or dentist who requested the CT scan. They can help you with decisions about the right test for your child.
- You can also ask questions of the person doing the scan.

## Keeping a record of CT scans

- Keep a record of the CT scans and other imaging your child has, so you can tell your child's doctor or dentist each time they suggest a new test or scan.
- If your child was born in Australia, you may have been given a health record book that is taken to the child health clinic for immunisations or health checks. A book such as this can help you and your child's doctor or dentist keep track of the imaging that your child receives. Most state and territory health departments provide these books in hard copy or electronically.
- The back of a wardrobe is one place you could store previous scans and X-rays.

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[www.safetyandquality.gov.au/ctscansforkids](http://www.safetyandquality.gov.au/ctscansforkids)

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**This information is of a general nature only and is not intended as a substitute for medical advice. If you have any questions or concerns, please ask your doctor, dentist or medical imaging staff.**

Photo is courtesy of The Royal Children's Hospital Melbourne.

### References

- 1 Mathews JD et al. Cancer risk in 680,000 people exposed to computed tomography scans in childhood or adolescence: data linkage study of 11 million Australians. *BMJ* 2013;346:2360.
- 2 Australian Institute of Health and Welfare. *Cancer in Australia: an overview 2014*. Cancer series no. 90, cat. no. CAN 88. Canberra: AIHW, 2014.