

Computed tomography (CT) neuroradiology (child patients)

Information for patients, parents and carers

This sheet aims to provide you and the child you are caring for with information about their computed tomography (CT) neuroradiology examination. If you have any other questions or concerns, please do not hesitate to speak to the team caring for them.

Confirming the child's identity

Before they have a treatment or procedure, our staff will ask you the child's name and date of birth and check their ID band. If they do not have an ID band we will also ask you to confirm their address. If we do not ask these questions, then please ask us to check. Ensuring their safety is our primary concern.



Why do I need a CT image?

Hello. I am Dr X. Ray.

I would like you to have a CT image so I can see inside your body and discover how to make you better. Lots of problems can be seen from outside the body, but not bones or organs. A CT image uses X-rays to build a 3D picture of the inside of your body.

What are X-rays?

X-rays are a type of radiation (ra-di-a-tion). This means waves of energy that move, just like sunrays. Because they have more energy, X-rays can pass through things that sunlight cannot – like our bodies.

Different parts of the body stop different amounts of X-rays. The darker an area on the X-ray picture is, the more X-rays have reached it. Bones are able to stop lots of X-rays so they show up white. The different shades help to make a picture of the inside of your body.



Natural radiation?

X-rays give your body a small dose of radiation. We get a small dose of radiation every day from nature – this is called 'background radiation'. Here are some of the ways we are naturally exposed to radiation:

- Cosmic rays come from space. Most are absorbed by the Earth's atmosphere (at-mos-phere). You get a bit more radiation from cosmic rays when you fly because the atmosphere is thinner. A flight to America is similar to having 6 chest X-rays.
- Many parts of the Earth are naturally radioactive (ra-di-o-ac-tive), which means they produce radiation. Some rocks contain a radioactive material called uranium (u-ra-nium). Some places, like Cornwall, have more rocks like this so people who live there get more background radiation.
- Bananas contain a material called potassium (po-tass-ium), which can give a tiny dose of radiation. However, potassium is also an important part of a balanced diet!

Radiation risks and doses

X-ray radiation slightly increases the risk of developing cancer many years later in life. Cancer is when the body's instructions for building new cells go wrong and cause bad cells to grow and spread. A child's growing body is more sensitive to radiation than an adult's, and because they have more life ahead of them, there is more time for cancer to develop.

The dose of radiation depends on what type of procedure you are having and your age. The risk to health also depends on your age, sex, and weight. The maximum dose of a head CT is similar to just over a year of natural background radiation. This dose is considered to have a low risk of cancer.

X-ray images are only ever taken when the benefit to health has been judged to be more important than the risk of harm. The smallest possible amount of radiation is used to produce a good picture.

What will happen during my CT exam?

You might be asked to wear a hospital gown. Normal clothes may have metal parts, like zips or buttons that will show up white on your picture. This is because they can stop a lot of X-rays. So we don't want them to get in the way.

When you go into the CT room you will meet the radiographer (radi-ogra-pher) (a person who takes X-ray photos). They will look after you during your CT exam. They will explain what the CT is for and what they will do. Then they will ask you to lie on the bed and the radiographer will sit in the control room.

A special dye might be put inside your body to help make the picture clearer.

A big ring will rotate around the table while sending X-rays through your body.

The X-rays won't hurt. And it will all be over rather quickly.

While the table moves through the big ring, you must try to stay as still as you can so that the picture is not blurry. You may sometimes be asked to hold your breath for a short amount of time to help with this.

When all the pictures are taken, they will be sent to your doctor. The doctor will then tell you what to do next.

Word search

We hope you have learnt a bit more about the CT exam you will be having. See if you can find the X-ray words below.

C	B	R	U	R	A	N	I	U	M	D	E	R	I
O	E	Y	A	A	T	T	I	P	A	A	N	R	D
O	N	S	G	M	X	O	U	A	I	Y	I	E	E
D	Y	C	O	R	O	R	A	E	N	R	S	H	T
P	P	O	T	D	E	U	A	V	O	A	M	P	E
O	R	S	P	N	T	N	T	Y	P	D	C	A	C
T	N	M	C	A	I	I	E	R	M	I	C	R	T
A	K	I	U	C	A	E	D	T	O	A	I	G	O
S	S	C	E	S	E	S	R	A	D	T	U	O	R
S	U	R	E	T	R	S	N	B	A	I	N	I	A
I	N	A	D	C	M	I	T	R	S	O	I	D	X
U	Y	Y	G	E	E	R	C	M	O	N	A	A	R
M	B	A	C	K	G	R	O	U	N	D	R	R	R
E	V	I	T	C	A	O	I	D	A	R	B	E	I

Background
Bones
Cosmic ray
CT scan
Detector
Dose
Energy
Potassium
Radiation
Radioactive
Radiographer
Uranium
X-ray

For more information, please visit

- [Patient dose information: guidance \(www.gov.uk\)](http://www.gov.uk)
- [CT scan \(www.nhs.uk\)](http://www.nhs.uk)
- [Neuroradiology \(www.kch.nhs.uk\)](http://www.kch.nhs.uk)
- [Medical radiation: uses, dose measurements and safety advice \(www.gov.uk\)](http://www.gov.uk)

Before the CT procedure

If the child has had a previous reaction to X-ray contrast injections, please let the radiographer know.

Useful contacts

If you have any further questions please ask a member of staff:

Neuroradiology department (telephone): 020 3299 1525

Sharing your information

We have teamed up with Guy's and St Thomas' Hospitals in a partnership known as King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas'. To make sure everyone you meet always has the most up-to-date information about the child's health, we may share information about them between the hospitals.

Care provided by students

We provide clinical training where our students get practical experience by imaging patients. Please tell the child's doctor or nurse if you do not want students to be involved in the child's care. The child's imaging will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. They can also pass on praise or thanks to our teams.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS

Tel: 020 3299 3601

Email: kch-tr.palsdh@nhs.net

PALS at Princess Royal University Hospital, Farnborough Common, Orpington, Kent BR6 8ND

Tel: 01689 863252

Email: kch-tr.palspruh@nhs.net

If you would like the information in this leaflet in a different language or format, please contact our Communications and Interpreting telephone line on 020 3299 4826 or email kch-tr.accessibility@nhs.net