

Information for patients

My X-ray

What you need to know about radiation.....

This information has been approved by clinical and scientific staff from the following hospitals:

County Durham & Darlington NHS Foundation Trust

Gateshead Health NHS Foundation Trust

Newcastle Upon Tyne Hospitals NHS Foundation Trust

South Tees Hospitals NHS Foundation Trust

The purpose of this leaflet is to explain the potential risks from the kind of radiation used in X-ray imaging. It does not apply to other kinds of imaging such as ultrasound imaging and MRI imaging. This is a new initiative following changes in radiation safety laws.

Why am I having an X-ray?

X-ray examinations have many uses including

- To help find out what is wrong with you
- To check on progress of an illness or injury
- To help carry out an internal procedure as part of your treatment
- To provide your doctor with other clinical information

Your healthcare team have recommended that an X-ray will be of benefit to you, and the request has been checked by specially trained staff that it is the right one for you and your condition. When deciding on whether an X-ray is required (and what kind), the healthcare professionals involved always check that the benefit of having the X-ray is greater than the risk.

X-ray examinations use a beam of electromagnetic radiation to see inside your body. The radiation does not stay inside you or make you radioactive. It is the same radiation as light and radio waves, but has a higher energy and is capable of causing a process known as ionisation.

Are there any risks in using ionising radiation?

Ionising radiation can cause cell damage that may, after many years or decades, turn cancerous.

We are all at risk of developing cancer during our lifetime. The normal risk is that this will happen to about 50% of people at some point in their life (1 in 2). We are also all exposed to background radiation every day. The table below tells you how much radiation you are likely to get from different types of X-ray examination, compared to other every day activities, and how this may affect your cancer risk.

Further risk comparisons can be found at <https://www.gov.uk/government/publications/ionising-radiation-dose-comparisons/ionising-radiation-dose-comparisons>

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Type of X-ray examination/scan	Typical equivalent background radiation	Number of people who may be affected	Risk level
Dental X-ray /DEXA scan Chest or limb/extremity X-ray	< 1 day 1-2 days	Fewer than 1 in 1,000,000	Negligible
Abdomen/Pelvis X-ray CT scan of head or limb Contrast X-ray procedure where an 'X-ray dye' is used (such as a barium study or angiogram)	1-2 months 3-6 months 6-12 months	Fewer than 1 in 10,000	Very low
Interventional X-ray examination (such as a stent insertion) CT scan of body	1-2 years 1-4 years	Fewer than 1 in 1000	Low

In comparison to the following:

Hit by lightning		Fewer than 1 in 1,000,000	Negligible
Transatlantic flight Accident on the railway	10 days	Fewer than 1 in 100,000	Minimal
UK average annual radiation dose Accident at home	1 year	Fewer than 1 in 10,000	Very low
Average annual radon dose to people in Cornwall Accident on the road	1-4 years	Fewer than 1 in 1000	Low
All natural causes (age 40)		Fewer than 1 in 100	Moderate

What if I may be pregnant?

Exposure of an unborn baby to ionising radiation may cause a slight increase in their cancer risk. For this reason, X-ray examination of the abdomen or pelvic area are usually avoided when pregnancy is possible or confirmed, unless the risk of not performing the X-ray is greater. You should tell your healthcare team if there is any possibility of being pregnant.

X-rays of parts of the body well away from the abdomen (such as limbs and dental X-rays) do not give any increased risk to an unborn baby

What about children?

Long term effects from ionising radiation can take many years to come about. The risk of long term effects is increased slightly in younger people because they have more time left for them to develop. The healthcare team take account of this when deciding if a child needs an X-ray examination, and the amount of radiation used is kept as low as possible.

What if I don't have the examination?

The risk of not having the examination is that it may not be possible to find out what is wrong with you, or how best to treat you. You should discuss any concerns with your healthcare team.

What if I have more questions?

Please talk to your doctor or any of the team carrying out your X-ray if you would like to discuss any of this information further.