

# Benefits and risks of radiation

Information for Clinical Imaging patients



# Who is this leaflet for?

Your doctor has referred you for a test or procedure that uses ionising radiation to help make a diagnosis or guide your treatment.

## Tests that use this type of radiation include:

- cardiac imaging
- CT scans
- fluoroscopy and interventional radiography
- nuclear medicine scans
- mammography (breast imaging)
- X-ray imaging.

## Natural and medical radiation exposure

Although you cannot see or feel it, we all receive some ionising radiation every day from radioactivity in the air, food and even from space.

The amount of radiation from your medical test can be similar to a few hours, weeks, or years of natural radiation.

Your medical exposure to radiation will be as low as possible but high enough for the test to be performed correctly.

# The benefits of your test

- Your doctor thinks that the information gained from your test or procedure is important for your diagnosis or treatment.
- The benefit to you from the test or procedure will be greater than the risk from the radiation.
- Not having the test or procedure could involve greater risk to you than the risk from the radiation.

This should have been discussed with you.

# The risk from your test

- As with natural radiation, medical ionising radiation may cause cancer many years or decades in the future.
- For most medical tests, the increased risk to you is negligible or extremely low.
- Even for tests that are similar to 10 years of natural radiation, the risk of developing cancer from your test is low (around 0.1%).
- In comparison, the natural lifetime chance of getting cancer in the general population is around 50%.
- The radiation risk to children is higher than for adults. Additional care is taken to keep their radiation exposure as low as possible.

The radiation risks for some common tests are shown in the table below.

## Radiation risks for common tests and procedures:

X-ray procedure	Equivalent natural radiation in UK	Radiation risk
DEXA Dental X-ray Limbs and joints X-rays	A few hours	Negligible
Neck X-ray Chest X-ray Ankle or knee CT	A few days	Negligible
Hip or pelvis X-ray Abdomen X-ray Spine X-ray Pacemaker insertion	A few weeks	Extremely Low
Nuclear medicine kidney scan X-ray guided catheter insertions X-ray guided feeding tube insertions Barium swallow (oesophagus imaging)	Up to 6 months	Extremely Low
Head CT Hip CT UK average natural radiation	1 year	Very Low
Nuclear medicine bone scan Colonoscopy CT Chest abdomen pelvis CT	1 to 5 years	Very Low

# Do I need to have a test that uses ionising radiation?

As there will be a benefit to you, your doctor has requested a test or procedure that uses ionising radiation.

We will check the type of test that you need. If there is something more suitable that does not involve ionising radiation, you will be offered that instead.

## Your consent is important

Before you have your test or procedure, you will be asked for your consent.

**“The test or procedure that you are having today involves ionising radiation. Do you understand the risks and benefits, and are you happy to go ahead?”**

## What if I am pregnant?

Extra care may be needed if you are pregnant.

Usually, the risk of not making a diagnosis or having a procedure is greater than the radiation risk involved.

If you are of childbearing age (12 to 55 years old) you will be asked about your pregnancy status.

**BEFORE your examination or procedure, please let us know if you are breastfeeding or you may be pregnant.**

## Can I bring someone with me?

If you think you may need someone to hold or reassure you during your test, then it may be possible for a relative or carer to help you. As they will receive a small amount of radiation, they will be asked:

- if they consent
- if they are pregnant.

For some tests, it may not be suitable for someone else to be with you. Please get in touch if you need more information.

## Further information

**IAEA Radiation protection of patients and public**

➔ Website: [iaea.org/resources/rpop/patients-and-public](https://www.iaea.org/resources/rpop/patients-and-public)

## Get in touch

### Please get in touch or speak to a radiographer if:

- you are pregnant or breastfeeding
- you need someone to be with you during your test
- you want to speak to someone for more information about your test or procedure.

Contact phone numbers, and more information about the tests and procedures that use ionising radiation, are on our website:

➔ Website: [royalcornwallhospitals.nhs.uk/services/clinical-imaging](https://royalcornwallhospitals.nhs.uk/services/clinical-imaging)



To get this information in a different format  
call **01872 252690**

Royal Cornwall Hospitals NHS Trust  
Treliske, Truro, Cornwall, TR1 3LJ.  
Switchboard: 01872 250000

For an online version of this  
leaflet please scan this QR code



Reference RCHT1755  
Revised 06/2025  
Version 4.0  
Review due 06/2028

© Royal Cornwall Hospitals NHS Trust  
Patient Information 2019

*Outstanding*  
**Care for One+All**