



PATIENT INFORMATION

# YOUR RADIOLOGY EXAMINATION AND YOU



IRMER Procedur e: (i)	<b>Providing that wherever practicable, and prior to an exposure taking place, the individual to be exposed or their representative is provided with adequate information relating to the benefits and risks associated with the radiation dose from the exposure</b>
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Procedure required under IR (ME)R 2017 Regulation 6 and Schedule 2(i)

Your doctor or healthcare practitioner has referred you for an X-ray or Nuclear Medicine scan, so that they are able to make a diagnosis or monitor the progress of your treatment. This involves the use of radiation.

**It is really important that the benefits from having the examination and making the right diagnosis or providing the correct treatment outweigh the very low risk involved with the radiation itself.**

There are strict regulations and legal requirements that govern all Radiation exposures (Ionising Radiation (Medical Exposures) Regulations (IR(ME)R) 2017) .

The radiographer must be able to justify the exposure to radiation that you will receive during your examination before you are able to have the requested examination; this is usually done from the information that your doctor, or healthcare practitioner, has provided on the examination request.

Sometimes it is not justified, from the information given, that you have an exposure to radiation, and it might be that a different test is more appropriate that does not involve radiation; in this case the radiographer will discuss this with you and speak to your doctor or healthcare practitioner.

### **X-rays and Gamma radiation**

Both are a type of radiation that can pass through the body. In healthcare, this type of radiation is used to provide images to help to diagnose illness or monitor medical conditions; you cannot see these and you will not feel them during an examination.

More than one picture from different angles may be necessary to provide as much information as possible; particularly when looking for broken bones.

### **Radiation**

We all receive radiation, known as 'background radiation' every day, although mankind has successfully adapted to it over millions of years; this background radiation is due to natural causes from:

- cosmic rays reaching the Earth from space
- from certain rocks (which may be contained in building materials)
- from travel (particularly air flight)
- from naturally occurring radon gas (particularly widespread in granite areas of the country such as Devon, Cornwall and Dartmoor)

In any one year our exposure will vary according to where we've lived, where we may have flown to and what we may have eaten.

Every medical exposure we have, gives us a small additional dose of radiation; the level of dose varies with different types of examinations. Generally the amount of radiation you will receive during your examination is the equivalent of between a few days and a few years of exposure to natural 'background radiation' that you would receive from the environment.

Examinations such as Chest X-rays, X-rays of Limbs and Dental X-rays have doses that are relatively low and equivalent to less than 3 months background radiation and so carry a very low risk to you.

CT scans have doses that are a slightly higher and can be equivalent to 1 to 5 years background radiation depending on what area of the body is being scanned.

All examination doses are kept as low as reasonably practicable to ensure that images of a high diagnostic quality are obtained without exceeding accepted dose levels.

Every exposure to radiation carries a risk of causing cancer many years or decades later; however this risk is thought to be very small; a general x-ray of your chest, limbs or teeth has a less than 1 in 1,000,000 chance of causing cancer (NHS Choices, 2015).

More information on the typical doses received, equivalent periods of natural background radiation and lifetime fatal cancer risks from diagnostic medical exposures can be found on the NHS Choices website:

<https://www.gov.uk/government/publications/medical-radiation-patient-doses/patient-dose-information-guidance>

## **Age**

The risks from radiation are a little higher for children than they are for adults; this is because children are still developing and growing and have a long life ahead of them. Extra care is taken with young patients to keep their radiation exposure to a minimum. The risks from radiation are much lower for older people.

## **Pregnancy**

A baby in the womb can be particularly sensitive to the exposure to radiation.

**If you are, or think you may be, pregnant, please tell the radiographer before you have your examination.**

## **Consent**

Please feel free to ask your doctor or the radiographer if you have any further questions.

If you do not feel you have been given sufficient information then you may refuse to have your examination and go back to discuss this with your Doctor or the Healthcare Professional who has referred you.

### Typical examination dose and equivalent period of natural background radiation (UK)

Examination (Adult examinations)	Effective Dose (mSv)	Equivalent period of natural background radiation	Lifetime additional risk of fatal cancer per examination
Chest	0.02	3 days	1 in a million
Abdomen (AP)	0.7	4 months	1 in 30,000
Pelvis (AP)	0.7	4 months	1 in 30,000
Cervical spine lateral	0.08	2 weeks	1 in 200,000
Thoracic spine complete	0.7	4 months	1 in 30,000
Extremities	<0.01	<1.5 days	1 in a few million
CT Head	2	1 year	1 in 10,000
CT Chest	8	3.6 years	1 in 2,500
CT Abdomen/Pelvis	10	4.5 years	1 in 2,000
Barium swallow	1.5	8 months	1 in 13,000
Bone Scan	4	2 years	1 in 5,000
Lung ventilation	0.1	2.4 weeks	1 in 200,000
Lung perfusion	1	6 months	1 in 20,000

**If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999.**

## **Patient Experience**

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

## **Feedback**

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

## **Patient Advice and Liaison Service (PALS)**

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaints procedure.

## **How to contact PALS:**

**Telephone Patient Services: 0300 123 1732 or via email at: [wah-tr.PET@nhs.net](mailto:wah-tr.PET@nhs.net)**

## **Opening times:**

The PALS telephone lines are open Monday to Thursday from 8.30am to 4.30pm and Friday: 8.30am to 4.00pm. Please be aware that a voicemail service is in use at busy times, but messages will be returned as quickly as possible.

If you are unable to understand this leaflet, please communicate with a member of staff.