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## Contact Details

**Radiology Department Reception: 021 4935 275**
**Radiation Protection Officer: 021 4935 176**
**Mercy University Hospital: 021 4271 971**

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# Radiation Information for Patients



## Welcome to the Radiology Department

The Mercy University Hospital Radiology (X-ray) Department offers a diverse range of diagnostic and interventional radiology services including X-rays, Ultrasound, CT and Nuclear medicine scans. We cater for in-patients, out-patients, GP referrals and emergencies.

We use state of the art medical equipment and have a dedicated team of staff including Clerical, Health-care attendants, Nurses, Radiographers and Radiologists.

## What will I Learn from this Information Leaflet?

Patients are sometimes concerned about the possible harmful effects of radiation, so this leaflet will explain about radiation, its use and its risks.

## Use of Radiation in Medical Imaging

Most imaging examinations, apart from ultrasound and MRI scans, use ionising radiation (X-rays or Gamma rays). These radiation passes through the body and a picture is produced which allows the Radiologist to give a diagnosis.

## Is it Safe to do these Medical Imaging Tests?

We are all exposed every day to radiation from our environment, food we eat and even from outer space. Generally the amount of radiation used for medical imaging is very low.

Using radiation for imaging has benefits as it helps us provide a diagnosis so we can give you the correct treatment. The benefit far outweighs the radiation risk involved. As you can see from the table opposite the risks are indeed quite low.

This table compares the radiation levels for these common examinations to radiation exposure from natural background radiation.

| Common Procedures | Comparable to Natural Background Radiation | Estimated Lifetime Additional Risk of Cancer per single Examination |
|---|---|---|
| Extremities | 3 Hours | 1 in 100 Million |
| Chest X-Ray | 2 Days | 1 in 1 Million |
| Pelvis X-Ray | 1 Month | 1 in 70,000 |
| Abdomen X-Ray | 2 Months | 1 in 50,000 |
| CT Head | 6 Months | 1 in 12,000 |
| CT Chest | 2 Years | 1 in 2,800 |
| CT Abdomen and Pelvis | 2.5 Years | 1 in 2,400 |
| Nuclear Medicine Bone Scan | 1 Year | 1 in 5,700 |
| Lifetime risk of cancer NOT caused by Radiation | | 1 in 3 |

## Annual Background Radiation Dose in Ireland (3.5mSv)

**Medical Exposure Radiation Unit 2013: Information on Patient Radiation Dose, Ireland.**

www.icgp.ie/speck/properties/asset/asset.cfm?type=LibraryAsset&id=74CD10C3-48CA-463A-BE7DF2C3FA294A50&property=asset&revision=tip&disposition=attachment&app=icgp&filename=014A579D-9393-A2B4-49A243FF262DDBE5.pdf

## Are the Risks the Same for Everyone?

Radiation risks for children tend to be higher than for adults. This is because children live longer, so the chance of a radiation effect happening in their lifetime is higher compared to an adult who had the same test.

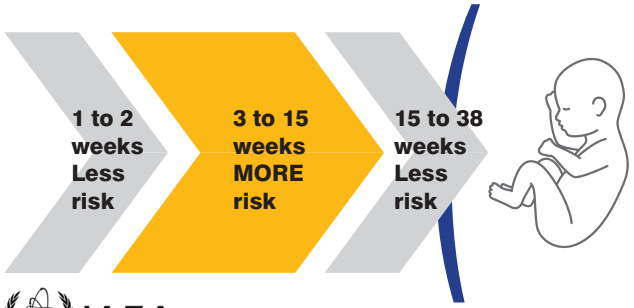
As a result, we ensure that there is a clear medical benefit for every child who is imaged and the radiation dose is also kept as low as possible.

The benefits and risks of having a radiology test will be discussed with you before it is recommended. If you have any concerns, talk to your doctor or radiographer about the potential risks beforehand.

## Radiation Exposure During Pregnancy

Research shows that unborn babies growing in the womb are quite sensitive to radiation. As a result of this a number of radiology tests are not recommended during pregnancy.

## Risk Levels and Age of Pregnancy




If you are a woman of child bearing age 12-55yrs, depending on the type of test you have been referred to have; the radiographer may check with you if there is any chance of you being pregnant before proceeding with the test, and you will be asked to complete and sign a form as part of our safety checks.

Please inform us when you attend if you are unsure of your pregnancy status.