



ensuring that there is a clear medical benefit for every child that is X-rayed. The radiation dose is also kept as low as possible without compromising the diagnostic quality of the X-ray.

Babies- a baby in the womb may also be more sensitive to radiation than an adult, so we are particularly careful about X-rays during pregnancy. An X-ray to the hand/foot or chest of a pregnant woman is considered safe if necessary, as the radiation is not near the baby. However special precautions are required for examinations where the womb is near or in the beam of radiation or when a radioactive injection could reach the baby through the mother's blood.

This is why for certain examinations, Radiographers and Doctors will ask ladies of child bearing age the date of their last menstrual period and if there is any possibility of them being pregnant. Ladies are then required to fill out this data on to a form and sign it to consent to proceed with the examination.

If there is a possibility of pregnancy, your case will be discussed with the Doctor looking after you to decide whether or not to recommend postponing the examination.

There will be occasions when diagnosing and treating your illness is essential for your health and your unborn child. When this health benefit clearly outweighs the small radiation risks, Doctors, after discussing with you, will decide that the X-ray or scan may go ahead.



### TO PUT RADIATION IN PERSPECTIVE.

Table below lists common x-ray examinations and the period of background radiation that gives approx the same radiation dose:

X-ray Examination	Equivalent period background radiation
Chest	A few days.
Dental	
Arms/legs	
Skull/head/neck	A few weeks.
Breast	A few months to a year.
Hips	
Spine Abdomen	
CT scan head	A few years.
CT scan Chest	
CT scan Abdomen	
PET scan	



## RADIATION / X-RAY

INFORMATION FOR PATIENTS



Galway Clinic,  
Doughiska,  
Co. Galway,  
H91 HHTO, Ireland

Email: [info@galwayclinic.com](mailto:info@galwayclinic.com)

Tel: 091 785 000

WHAT MATTERS IS YOU



**Patients are sometimes concerned about the possible harmful effects of X-rays and scans in Hospital. This leaflet will explain the risks and put them in perspective. X-rays and scans are only ordered and done if the benefit to the patient outweighs the small risk involved.**

### **WHAT IS RADIATION?**

Radiation is the emission or transmission of energy in the form of waves through space or through a material. It can come from natural sources like the sun, earth, and the air. Radiation can also be created artificially by a variety of sources such as microwave ovens, ultraviolet lamps, X-ray machines or radioactive sources. It is measured in units called microsieverts.

### **IS IT POSSIBLE TO AVOID BEING EXPOSED TO RADIATION?**

No. We are all exposed to radiation from the sun, from materials in the earth or from gases like Radon in the air we breathe. This is sometimes called 'background radiation'.

On average a person in Ireland gets 4037 microsieverts a year from all sources of radiation. Approx. 86% of this comes from natural sources.

People who travel by aeroplane get an additional 5 microsieverts of radiation for every hour of the flight.

### **IS BACKGROUND RADIATION DIFFERENT FROM ARTIFICIAL RADIATION?**

No. Natural radiation and manmade radiation cause identical effects in the body.

### **IS RADIATION DANGEROUS?**

Exposure to large amounts of radiation can be harmful to the body e.g. people exposed to large amounts of radiation are more likely to develop some forms of cancer. There is no direct evidence that low exposures to radiation are harmful but it is considered sensible to limit exposures to the lowest amount possible.

### **WHAT ARE THE BENEFITS OF HAVING AN X-RAY?**

Using x-rays and scans for diagnosis can bring real benefits to patients. It is the duty of Doctors who order scans, and Radiology staff who carry out the scans to ensure that the X-rays/scans are justified. This means that staff must ensure that when X-rays are used, the benefits from making the right diagnosis and consequently giving you the right treatment outweigh any small risk involved.

If treatment decisions depend on findings, then the risk to patient health from not having the X-ray/scan is likely to be much greater than that from the radiation itself.

All staff involved in the medical exposure of patients are highly trained to ensure radiation dose is as low as reasonably achievable.

### **IS THERE SOME OTHER WAY TO MAKE THE DIAGNOSIS?**

Before deciding to send you for this X-ray, your Doctor will have considered the other types of test available. X-rays are used when they are judged to be the most suitable method of assisting diagnosis.

### **WHY SHOULD I ACCEPT ANY RISK?**

Just about everything we do in life carries a level of risk. We tend to regard activities as being 'safe' when the risk of something unpleasant happening falls below a certain level.

The benefit from having an X-ray or scan should usually outweigh the small radiation risk. It should be remembered that the higher dose examinations are normally used to diagnose more serious conditions when a greater benefit to the patient is to be expected.

Make sure your doctor is aware of other X-rays or scans you have had, in case they make additional examinations unnecessary.



### **ARE RISKS THE SAME FOR EVERYONE?**

No. As you get older you are more likely to need an X-ray examination. The risks from radiation for older people tend to be lower than for others. This is because there is less time for a radiation induced cancer to develop, so the chances of it happening are greatly reduced.

Children however, with most of their life still ahead of them, may be at twice the risk of middle aged people from the same X-ray examination. This is why particular attention is paid to