I-MED Radiology Network

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Plain Radiography/X-rays

Patient Information

What is Plain radiography/X-rays?

Radiography is the imaging of body structures using X-rays, which are a form of radiation similar to visible light, radiowaves and microwaves. X-radiation is special because it has a very high energy level that allows the X-ray beam to penetrate through the body and create an image or picture.

The image is created due to the X-ray beam being absorbed differently by different structures or parts in the body. A dense structure like bone absorbs a high percentage of the X-ray beam (which appears light grey on the image), whilst low density structures like soft tissues absorb a small percentage (which appears dark grey on the image). The body has many different structures of varying densities and this difference creates a picture or image.

How do I prepare for Plain radiography/X-rays?

For a plain X-ray there are no specific preparation instructions. You must however bring the X-ray request form or referral letter from your doctor, as no X-ray examination can be performed without it.

- Please inform the radiographer who is performing the X-ray if there is any chance you may be pregnant. Safety of the patient and unborn child is the number one priority so a different approach or test may be needed. As some clothing can make it difficult to see the images clearly, be prepared to wear a gown
- Be prepared to remove certain items like watches, necklaces and certain types of clothing that contain metal objects such as zips, as these items may interfere with the quality of the image.

What happens during Plain radiography/X-rays?

The radiographer (a trained X-ray technologist) will call your name and escort you through to an examination room. They will explain the procedure and prepare you accordingly.

Depending on the part of your body being examined you may be asked to stand, sit or lie down while the X-ray is taken. The number of X-rays taken and the speed of the test will also depend on this. It is important that you stay completely still when the radiographer instructs you to, as any movement may create a blurred image.

After the X-rays have been performed, the radiographer has to process each X-ray and check the results for quality. This can sometimes take several minutes. Sometimes there will be a need for additional images to be taken to obtain more information to help the radiologist (a specialist doctor) make a diagnosis. There is no need for concern if this happens as it is quite common.

The radiographer will instruct you when the procedure is finished.

The radiologist then carefully assesses the images, makes a diagnosis and produces a written report on the findings, which is sent to your referring doctor.

The entire process is straightforward and you will not feel anything strange or feel any different during the examination. You are welcome to ask questions at any stage.

How long do Plain radiography/X-rays take?

It usually takes less than 15 minutes for an entire X-ray procedure. This obviously depends on the number of parts of your body being examined and your mobility and your general health. In most cases, the area being examined needs to be viewed from different directions to obtain enough information to make the diagnosis and this may require you to move into different positions.

For example, a simple chest X-ray on an able and willing patient could take less than one minute. However, a distressed patient needing a full spine, pelvis, both shoulders and both legs X-rayed could take 45 minutes.

People with disabilities and children will also take longer, particularly if they find it difficult to keep still or to cooperate with or understand instructions given by the radiographer .

What are the risks of Plain radiography/X-rays?

Generally, the benefit of the X-ray procedure is far more important than the small estimated risk. At the radiation dose levels that are used in diagnostic radiography there is little or no evidence of health effects.

The two major risks to health that occur as a result of exposure to medical ionizing radiation (which is the kind of radiation in X-rays) are:

- Cancer occurring many years after the radiation exposure
- Health problems in the children born to people exposed to radiation because of damage to the reproductive cells in the body.

To put this into perspective, a patient would need to have approximately 38 chest X-rays to receive an amount of radiation similar to that of normal background radiation that everyone receives for one year from the environment.

Who does the Plain radiography/X-rays?

A radiographer or medical imaging technologist is a health professional who performs diagnostic radiography. A radiologist is a specialist medical doctor who reviews and interprets the images and provides a written report of the test to your referring doctor.

How do I get my results?

Your doctor will receive a written report on your test as soon as is practicable.

It is very important that you discuss the results with the doctor whom referred you so that they can explain what the results mean for you.

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What happens during an Ultrasound?

Before you have the examination, the sonographer (technologist), will ask you questions about why you have come for the ultrasound scan. They will then explain the procedure you are having in detail and answer any questions you have.

You are normally asked to lie down on a bed and the area to be examined is exposed while the rest of the body is covered. Clear gel is applied to the area of your body which is being imaged. The sonographer will then place the "transducer" (a smooth hand held device) onto this area using gentle pressure. The transducer is moved across the area with a sliding and rotating action to allow the image to project onto the screen.

The sonographer takes still photographs from the moving images on the screen.

During the examination you may be asked to perform some simple movements to improve the quality of the imaging. These movements you will be asked to perform will be simple, for example:

- 'Taking a bigger breath' to assist during an abdominal ultrasound and allow the areas underneath the rib cage to be clearly viewed
- During an obstetric examination you may be asked to roll around to encourage the foetus or unborn baby to roll into a position appropriate for imaging
- In musculoskeletal ultrasound, the transducer moving over any painful areas often provides valuable insights into the true source of the pain

However, if any of these movements cause you concern or discomfort, you should let the sonographer know immediately.

Are there any after effects of an Ultrasound?

It is rare to have after effects from an ultrasound examination. Occasionally, a little tenderness is reported in the area that has been examined, but this is uncommon and rarely persists.

How long does an Ultrasound take?

Typically, an ultrasound examination will take about 30 minutes. However, some examinations, may take longer than this because of the detailed imaging that is required and the number and size of the organ/s being examined.

Ask us when making your appointment how long the type of ultrasound you are having normally takes.

What are the risks of an Ultrasound?

Ultrasound is a safe examination which provides excellent imaging without any significant risk.

What are the benefits of an Ultrasound?

Ultrasound provides excellent imaging of the soft tissues of the human body and is often the best and most appropriate diagnostic test.

It is a safe procedure which does not have the risks associated with imaging that uses radiation. There are no proven harmful effects of sound waves at the levels used in ultrasound performed in our clinics.

Ultrasound can be performed with patient movement so is ideal for imaging babies and children. Imaging movement is also very valuable in musculoskeletal (muscles, bones and joints related), gynaecological (women's health, especially of the reproductive organs) and vascular (blood vessel related) ultrasound. Dynamic imaging (moving pictures) provided by images using ultrasound sound waves gives the opportunity for looking at the inside of the body in positions or with movements where there is pain or movement restriction.

Ultrasound does not require an injection of contrast medium (a small amount of material used with some X-ray scanning to detect certain types of diseases or problems in the body). Ultrasound is mostly non-invasive, provides accurate imaging tests of the human body, is readily available and relatively inexpensive.

Who does the Ultrasound?

The ultrasound examination is performed by a **sonographer**, a health professional specialised in performing ultrasound examinations. They have a graduate qualification and are fully qualified to perform the examination. The sonographer performs the examination and provides an interpretation of the images on the screen to a **radiologist (medical specialist)**, who will review the sonographer's interpretation and discuss the images with them, before providing a report on the findings to your doctor.

Sometimes, it will be necessary for the radiologist to attend the examination, as it may be important to see the images on the screen rather than just the still photographs and discuss your symptoms.

How do I get my results?

Your doctor will receive a written report on your test as soon as is practicable.

It is very important that you discuss the results with the doctor whom referred you so that they can explain what the results mean for you.

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