

Imaging – what is involved?

Your doctor may refer you for one or more of the following imaging procedures while you are in hospital.

General X-ray (for example, a chest x-ray)

This is the familiar x-ray usually used for looking at broken bones, the chest or teeth. A machine directs a beam of x-rays through the part of your body that is being examined onto a special detector.

A picture is then produced on the detector of the structures the x-rays have passed through in your body. This will be reviewed by a doctor to plan your care and then reported by the Imaging Department.

Fluoroscopy

This is sometimes called 'screening'. After passing through your body, the x-ray beam is viewed by a special camera which produces a moving picture on a TV screen.

The radiologist or radiographer performing the examination can take snapshots of any important findings, or record the whole thing on video.

Fluoroscopy is often used to look at the gut. For example, in a 'barium meal' you will be asked to swallow a drink of barium, which is shown up well by the x-rays, to give moving pictures of your stomach and intestine. The 'barium meal' may have an unusual taste.

Interventional Radiology

Interventional procedures are carried out to diagnose and where possible treat patients. This can involve the use of stents and other specialist devices. Fluoroscopy x-ray equipment is used to obtain live images while these procedures are happening. These procedures often involve the use of a colourless iodine based contrast dye.

Computed tomography or CT scan

This is a more sophisticated way of using x-rays. You lie on a narrow table which passes through a circular hole in the middle of the machine. A fan-shaped beam of x-rays passes through your body onto a bank of detectors. The x-ray source and the detectors rotate around inside the machine.

A detailed image is formed by a computer and displayed on a TV screen. You are moved slowly through the hole to take pictures of different levels of your body and sometimes to produce 3D pictures.

Nuclear medicine or isotope scan

This is another way of using radiation to produce pictures. Instead of using an x-ray machine, a small amount of radioactive material (isotope) is injected into a vein. Occasionally it is swallowed or inhaled.

The radioactive material concentrates in a particular organ or tissue, for example in the skeleton for a bone scan. It gives out gamma rays, which are a type of radiation that behaves like x-rays. A special camera detects the gamma rays coming out of your body and builds up a picture of what is happening inside you.

Magnetic Resonance Imaging (MRI)

MRI is a type of scan that uses strong magnetic fields and radio waves to produce diagnostic images of the internal organs and structures of the body. MRI scans are noisy and so ear protection is provided.

Certain types of metal are not permitted in the scanning room, so you will need to complete a safety questionnaire to ensure you are safe to have an MRI scan. The questions include asking whether you have medical devices such as a pacemaker. There will be someone to help you with the questions if needed.

MRI scan times vary according to the body part being scanned and the information needed by your referring doctor.

Ultrasound

Ultrasound uses high frequency sound waves to produce an image that is interpreted by Radiologists or specialist Health Care Professionals called Sonographers. There are no known side effects from this type of imaging and it is not painful. A small amount of ultrasound gel is applied to the area to be examined and a hand-held probe is placed on the area.

Unfortunately ultrasound is not suitable for imaging all parts of the body so you may need other investigations to aid diagnosis.

Who works in the Imaging department?

Radiographers are registered qualified staff who undertake radiography, fluoroscopy, CT and MRI examinations. Sonographers have a specific qualification to undertake ultrasound examinations. Nuclear medicine technologists/radiographers have specific training to work in the nuclear medicine department. Consultant Radiologists are doctors who have specialised in radiology. In addition there is a team of nursing staff and an administration team. The department participates in training radiography and nursing students and radiology registrars.

Important points to remember

- You should make your doctor aware of any other recent X-rays or scans you may have had, in case they make further examinations unnecessary.
- If you are concerned about the possible risks from an investigation, you should ask your doctor whether the examination is really necessary. If it is, then the risk to your health from not having the examination is likely to be very much greater than that from the radiation itself.

More information regarding specific imaging procedures is available on the Trust Website – speak with your nursing team.

<http://bit.ly/bsuhradiology>

Content from Public Health England,
<https://www.gov.uk/government/organisations/public-health-england>

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