

X-Ray

What Is It?

An X-ray is a quick, painless test that produces images of the structures inside your body — particularly your bones.

X-rays are a type of radiation that can pass through the body. They cannot be seen by the naked eye and you cannot feel them.

As they pass through the body, the energy from X-rays is absorbed at different rates by different parts of the body. A detector on the other side of the body picks up the X-rays after they have passed through and turns them into an image. Dense materials, such as bone and metal, show up as white on X-rays. The air in your lungs shows up as black. Fat and muscle appear as shades of grey. For some types of X-ray tests, a contrast medium — such as iodine or barium — is introduced into your body to provide greater detail on the images.

Procedure Advantages

- Non-invasive: An X-ray can help diagnose a medical issue or monitor treatment progression without the need to physically enter and examine a patient.
- Guiding: X-rays can help guide medical professionals as they insert catheters, stents, or other devices inside the patient. They can also help in the treatment of tumours and remove blood clots or other similar blockages
- Results are quick
- Patients do not require sedation

Preparation Before

You do not usually need to do anything special to prepare for an X-ray. You can eat and drink as normal beforehand and can continue taking your usual medications. However, you may need to stop taking certain medications and avoid eating and drinking for a few hours if you are having an X-ray that uses a contrast agent.

For all X-rays, you should let the hospital know if you are pregnant. X-rays are not usually recommended if you are pregnant unless it is an emergency.

It is a good idea to wear loose comfortable clothes, as you may be able to wear these during the X-ray. Try to avoid wearing jewellery and clothes containing metal (such as zips), as these will need to be removed.

What It Involves

During an X-ray, you will usually be asked to lie on a table or stand against a flat surface so that the part of your body being examined can be positioned in the right place.

The X-ray machine, which looks like a tube containing a large light bulb, will be carefully aimed at the part of the body being examined by the radiographer. They will operate the machine from behind a screen or from the next room.

The X-ray will last for a fraction of a second. You will not feel anything while it is carried out. While the X-ray is being taken, you will need to keep still so the image produced is not blurred. More than one X-ray may be taken from different angles to provide as much information as possible. The procedure will usually only take a few minutes.

In some cases, a substance called a contrast agent may be given before an X-ray is carried out. This can help show soft tissues more clearly on the X-ray. Types of X-rays involving a contrast agent include:

- **barium swallow** - a substance called barium is swallowed to help highlight the upper digestive system
- **barium enema** - barium is passed into your bowel through your bottom
- **angiography** - iodine is injected into a blood vessel to highlight the heart and blood vessels
- **intravenous urogram (IVU)** - iodine is injected into a blood vessel to highlight the kidneys and bladder

These types of X-rays may need special preparation beforehand and will usually take longer to carry out. Your appointment letter will mention anything you need to do to prepare.

Possible Risks

People are often concerned about being exposed to radiation during an X-ray. However, the part of your body being examined will only be exposed to a low level of radiation for a fraction of a second. Generally, the amount of radiation you are exposed to during an X-ray is the equivalent to between a few days and a few years of exposure to natural radiation from the environment. Being exposed to X-rays does carry a risk of causing cancer many years or decades later, but this risk is thought to be very small. For example, an X-ray of your chest, limbs or teeth is equivalent to a few days' worth of background radiation and has less than a 1 in 1,000,000 chance of causing cancer. X-rays are not usually recommended if you are pregnant unless it is an emergency.

What Happens After

You will not experience any after-effects from a standard X-ray and will be able to go home shortly afterwards. You can return to your normal activities straight away.

You may have some temporary side effects from the contrast agent if one was used during your X-ray. For example, barium can turn your poo a whitish colour for a few days and an injection given to relax your stomach before the X-ray may cause your eyesight to be blurry for a few hours. Some people develop a rash or feel sick after having an iodine injection.

The X-ray images will often need to be examined by a doctor called a radiologist before you are given the results. They may discuss their findings with you on the same day, or they may send a report to the doctor who requested the X-ray, who can discuss the results with you a few days later.