

Find out how an x-ray can aid in diagnosis and what to expect during an x-ray exam.

An X-ray examination uses electromagnetic radiation to make images of your bones, teeth and internal organs. Simply put, an X-ray allows your doctor to take pictures of the inside of your body.

One of the oldest forms of medical imaging, X-ray is a painless medical test that can help your doctor in diagnosis and treatment. It's a fast, easy and safe way for your doctor to view and assess conditions ranging from broken bones to pneumonia to cancer. Many different types of X-rays, such as bone or chest X-rays, exist. The type your doctor uses depends on what part of your body is being examined and for what purpose.

Before some types of X-rays you're given a substance called contrast medium, or a "dye". Contrast mediums, such as barium and iodine, help outline a specific area of your body on X-ray film. You may swallow the contrast medium, insert it as an enema or receive it as an injection. The contrast medium appears opaque on X-ray film, providing clear images of structures such as your digestive tract or blood vessels.

If you're to receive a contrast medium before an X-ray, tell your doctor if you have a history of allergy to X-ray "dye", such as iodine.

Who is it for?

X-rays are safe and effective for people of all ages, even young children. X-rays are particularly useful for examining the chest, bones, joints and abdomen. Your doctor may recommend an X-ray for many different reasons. For example, an X-ray exam may be used to:

- Determine whether a bone is dislocated or broken (fractured)
- Diagnose and monitor the progression of degenerative conditions, such as arthritis and the bone-thinning disease, osteoporosis
- Screen for lung and heart diseases
- Diagnose the cause of persistent coughing or chest pain
- Check for broken ribs or a punctured lung
- Evaluate abdominal pain
- Locate objects that may have been accidentally swallowed by a child
- Detect scoliosis, an abnormal curvature of the spine, and other spinal defects

- Evaluate allergies or infection of the sinuses (sinusitis)
- Evaluate dental problems such as cavities, abscessed teeth, impacted wisdom teeth, and other tooth and jaw abnormalities

X-ray exams also play an important role in the detection and diagnosis of cancer. In fact, one use of X-ray in diagnosing cancer is to see whether you have lung or bone cancer or whether cancer from another part of the body has spread (metastasized) to the lungs or bone. X-rays may also be used to examine cancers of the intestines, stomach, liver, spleen, and kidneys with the use of a contrast medium. X-rays are also useful in diagnosing breast cancers (mammograms).

How do you prepare?

Different types of X-rays require different preparations. Ask your doctor or nurse to provide you with specific instructions. In general, you undress the area of your body that needs examination. You may wear a gown to cover yourself during the exam, depending on what area is

being X-rayed. You may also be asked to remove jewelry, eyeglasses and any metal objects or clothing that may obscure the X-ray image, since these objects can show up on an X-ray.

You may be asked to wear a lead apron to shield your sex organs from exposure to the X-rays. At very high doses, radiation can damage a woman's eggs or a man's sperm. Since you're exposed to a small amount of radiation during most X-rays, the lead apron is used simply as a precaution.

At high doses, radiation can be harmful to a fetus. **Always inform the X-ray technologist if there's any possibility that you might be pregnant.** Your doctor may suggest that you either forego the X-ray exam or, if one is necessary at the time, take precautions to minimize radiation exposure to the fetus.

How is it done?

An X-ray machine produces an X-ray beam using a tube that is carefully aimed and focused on the body part being examined. The machine produces a tiny burst of radiation, at a safe level, that passes through your body and records an image on film or on a specialized plate. As X-rays pass through your body, different tissues absorb different amounts of the X-rays. For example,

your bones are dense and absorb X-rays well. But soft tissues, such as your skin, fat, muscles and organs, allow more X-rays to pass through them. The result is that bones appear white on the X-ray. Your other tissues appear in varying shades of gray. Structures containing air, such as your lungs, appear dark.

Report/Results:

A Radiologist, a physician experienced in radiology exams, will interpret the images. A report will be available to physicians within 24 hours on routine exams. A signed report with the interpretation will be also be sent to the healthcare provider that ordered the test. You may check with your ordering physician for the report.



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