

## Education

### X-Rays

What are x-rays?

X-rays are a form of radiation (or electromagnetic energy). Visible light and microwaves are other forms of electromagnetic energy.

X-rays are able to penetrate body tissues. They are used to create pictures, or images, of body structures on film or with a computer.

Usually the images on film produced by x-rays are also called x-rays. More correct names for the pictures on film are radiographs, x-ray images, or x-ray films. However, the term x-ray is commonly used to refer to these images.

Having an x-ray exam is painless. Modern equipment produces high-quality images using the lowest possible amount of radiation. Many health care providers' offices have their own x-ray equipment.

When are they used?

X-rays are used in the diagnosis of many diseases and disorders. They can show changes in the part of the body being examined.

How do I prepare for an x-ray exam?

You will need to remove jewelry, eyeglasses, and anything else with metal, especially if it is near the area being x-rayed. Because metal shows up on x-rays, it might be in the way of what your provider is trying to see.

There are no other special preparations for most x-ray exams. If you are having a special x-ray exam that requires preparation, your provider will give you special instructions.

What happens during the procedure?

Usually you undress to expose the area being examined. You may be placed on a table (sitting or lying down). You will get in a position that gives a clear view of the part of the body being examined.

The x-ray technologist will put the x-ray machine in the proper position. The technologist will leave the room or go behind a protective screen or wall to take the x-ray image. This keeps his or her daily exposure to x-rays at a minimum.

It takes only a second for a simple x-ray film to be taken (similar to taking a photo). You must remain perfectly still while the x-ray picture is being taken. Several films may be taken for different views.

After the x-ray films are taken, they must be developed. The development takes just a few minutes. The x-ray technologist will then check the images to make sure no other pictures need to be taken before you leave.

After the technologist has checked the films, a radiologist or your health care provider will look at them and interpret them. Radiologists are doctors who have extensive training in the interpretation of x-ray films and other types of images.

Special types of x-ray exams include:

- CT scan: A scan that uses x-rays and a computer to produce cross-sectional views of specific parts of the body. Sometimes dyes (called contrast media) are injected into your body to help your provider see specific structures.
- Venography: A procedure in which a special liquid is injected into the veins. The path of the liquid as it travels through the body can be followed with a series of x-ray films. An example of this is an IVP (intravenous pyelogram), which looks at the kidneys and bladder.
- Barium enema: A procedure in which a special liquid is passed into the large intestine through the rectum. The liquid appears as an opaque or white substance on the x-ray film.
- Upper GI: A procedure similar to a barium enema except you swallow a special liquid and then x-ray films are taken of the stomach area.

What are the benefits of this procedure?

X-ray exams help your health care provider see the inside of your body and thus make a better diagnosis of your problem.

What are the risks associated with an x-ray exam?

If you have x-ray exams often, it is considered unhealthy because of the increased exposure to radiation. However, you can have many, many x-ray exams during your lifetime without significant danger to your health.

You may have an allergic reaction to the contrast dye used in CT scans or venography.

If you are pregnant, you and the baby should not be exposed to x-rays unless you discuss the matter with your health care provider first.

When should I call my health care provider?

Call right away if:

- You have any change or worsening of pain or symptoms.

Call during office hours if:

- You have questions about the procedure or its result.
- You want to make another appointment.

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