Panoramic Dental X-ray



Panoramic dental x-ray uses a very small dose of ionizing radiation to capture the entire mouth in one image. It is commonly performed by dentists and oral surgeons in everyday practice and may be used to plan treatment for dentures, braces, extractions and implants.

This exam requires little to no special preparation. Tell your doctor if there is a possibility you are pregnant. Remove any jewelry, eye glasses or metal objects that might interfere with the x-ray images. You will be asked to wear a lead apron to protect the rest of your body from any radiation exposure.

What is Panoramic X-ray?

Panoramic radiography (http://www.radiologyinfo.org) , also called panoramic x-ray (http://www.radiologyinfo.org) , is a two-dimensional (2-D) dental x-ray examination that captures the entire mouth in a single image, including the teeth, upper and lower jaws, surrounding structures and tissues.

The jaw is a curved structure similar to that of a horseshoe. However, the panoramic x-ray produces a flat image of the curved structure. It usually provides details of the bones and teeth.

An x-ray exam helps doctors diagnose and treat medical conditions. It exposes you to a small dose of ionizing radiation (http://www.radiologyinfo.org) to produce pictures of the inside of the body. X-rays are the oldest and most often used form of medical imaging.

Unlike a traditional intraoral (http://www.radiologyinfo.org) x-ray where the film/x-ray detector is placed inside of the mouth, the film for a panoramic x-ray is contained inside of the machine.

What are some common uses of the procedure?

A panoramic x-ray is a commonly performed examination by dentists and oral surgeons in everyday practice and is an important diagnostic tool. It covers a wider area than a conventional intraoral x-ray and, as a result, provides valuable information about the maxillary sinuses (http://www.radiologyinfo.org) , tooth positioning and other bone abnormalities. This examination is also used to plan treatment for full and partial dentures, braces, extractions and implants.

A panoramic x-ray can also reveal dental and medical problems such as:

- advanced periodontal disease (http://www.radiologyinfo.org)
- cysts (http://www.radiologyinfo.org) in the jaw bones
- jaw tumors (http://www.radiologyinfo.org) and oral cancer (http://www.radiologyinfo.org)
- impacted teeth including wisdom teeth
- jaw disorders (also known as temporomandibular joint or TMJ disorders)
- sinusitis (http://www.radiologyinfo.org)

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How should I prepare?

A panoramic x-ray examination requires no special preparation.

You may be asked to wear a lead apron as a safety precaution to protect the rest of your body from any radiation exposure that may scatter from the panoramic x-ray beam. You may also be asked to remove your jewelry from the region being imaged, eye glasses and any metal objects that might interfere with the x-ray images.

Women should always inform their dentist or oral surgeon if there is any possibility that they are pregnant. Many imaging tests are not performed during pregnancy so as not to expose the fetus to radiation. If an x-ray is necessary, precautions will be taken to minimize radiation exposure to the baby. *See the Radiation Safety (https://www.radiologyinfo.org/en/info/safety-radiation) page for more information about pregnancy and x-rays.*

What does the equipment look like?

A panoramic x-ray machine consists of two sides. An x-ray tube is mounted on one side and the x-ray film or a detector on the opposite side. The patient's head is positioned with chin, forehead and side rests. The patient may be provided with a bite blocker to open the mouth slightly for a clearer picture.

How does the procedure work?

X-rays are a form of radiation like light or radio waves. X-rays pass through most objects, including the body. The technologist carefully aims the x-ray beam at the area of interest. The machine produces a small burst of radiation that passes through your body. The radiation records an image on photographic film or a special detector.

During a panoramic x-ray examination, the x-ray tube rotates in a semicircle around the patient's head, starting at one side of the jaw and ending at the other side.

Rather than relying on film placed inside the mouth, a panoramic x-ray machine projects a beam through the patient onto film or a detector rotating opposite the x-ray tube.

Most x-ray images are electronically stored digital files. Your doctor can easily access these stored images to diagnose and manage your condition.

The digital format also allows the dentist to adjust and change the contrast, brightness and darkness of the image for better visualization of certain structures and tissues. Images on film cannot be adjusted or changed.

How is the procedure performed?

First, you will be situated in the center of the unit where the technician will carefully position and secure your head. The unit can be adjusted to accommodate a patient standing or sitting in a wheelchair. A bite-blocker is then placed in your mouth to ensure proper alignment of the teeth. Correct placement of the teeth and head is important for obtaining a clear image.

You will be asked to remain very still while the rotating arm travels in a semicircle around the perimeter of your head and the images are being taken. This can typically last between 12 to 20 seconds.

What will I experience during and after the procedure?

A panoramic x-ray exam is painless, fast and easy to perform. It may be recommended over intraoral x-rays for patients that have a sensitive gag reflex.

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What are the benefits vs. risks?

Benefits

- No radiation stays in your body after an x-ray exam.
- X-rays usually have no side effects in the typical diagnostic range for this exam.
- Panoramic dental x-ray can provide valuable diagnostic information to guide your dentist or oral surgeon to treat your dental and oral disease.
- Panoramic x-rays can be used for very young children since the film does not have to be placed inside the mouth.

Risks

- Women should always inform their dentist or oral surgeon if there is any possibility that they are pregnant. *See the Radiation Safety (https://www.radiologyinfo.org/en/info/safety-radiation) page for more information about pregnancy and x-rays.*

What are the limitations of Panoramic X-ray?

A panoramic x-ray does not provide precise and detailed information about each individual tooth or soft tissues, such as the muscles. It is generally used as an initial evaluation of the bones and teeth. Because your mouth is curved, the panoramic x-ray can sometimes create a slightly blurry image where accurate measurements of your teeth and jaw are not possible. If your dentist or surgeon needs more information, a computed tomography (CT) scan or magnetic resonance imaging (MRI) may be ordered. This may include *Dental Cone Beam CT (https://www.radiologyinfo.org/en/info/dentalconect) ,* an imaging exam developed specifically for this part of the body.

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