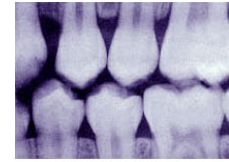




## Dental X-Ray

Approximately 100 MILLION dental x-rays are done each year in the United States. Dental x-rays provide your dentist with a vital tool that shows the condition of your teeth including roots, jaw placements, and the overall composition of your facial bones.



Bite-Wing X-Ray

In a dentist's office you are most likely to encounter radiation from a diagnostic [x-ray](#). X-rays pass more easily through the soft tissues of our bodies than through our bones and organs. After passing through our body, x-rays strike a special x-ray film, creating an image showing shadows where our bones, organs and other dense masses, like teeth, have absorbed x-rays.

Like microwaves, radio waves, and visible light, the x-rays produced by an x-ray machine are a form of [electromagnetic radiation](#). Unlike microwaves, radio waves, and visible light, x-rays are ionizing radiation, which is capable of removing electrons from atoms and damaging living cells and the DNA of those cells. However, since x-ray machines only produce radiation during operation and the amount of radiation used is small, resulting medical problems are unlikely.

Dental x-rays are usually conducted to:

- Detect problems in the mouth such as tooth decay, damage to the bones supporting the teeth, and dental injuries (such as broken tooth roots).
- Detect teeth that are abnormally placed or don't break through the gums properly.
- Evaluate the presence and location of permanent teeth growing in the jaw of a child who still has baby teeth.
- Plan treatment for large or extensive cavities, root canal surgery, placement of dental implants, and difficult tooth removals.
- Plan for orthodontic treatment, like braces.

## Who is protecting you

### The States

State radiation programs, in cooperation with the Food and Drug Administration (FDA), regulate, register, and inspect x-ray equipment used in medical, dental, and veterinary procedures.

### U.S. Food and Drug Administration (FDA)

While the states regulate *use* of x-ray equipment, FDA's Center for Devices and Radiological Health (CDRH) regulates the *manufacturing* of electronic radiation-emitting products.

### National Institute of Standards and Technology (NIST)

The mission of NIST is to develop and promote measurement, standards, and technology to enhance productivity, facilitate trade, and improve the quality of life. Although a non-regulatory federal agency, NIST makes x-ray machines safer for patients and workers by updating the technology and measurement standards upon which x-ray machines are based.

## What you can do to protect yourself

Only trained and qualified persons should operate x-ray machines. You can best protect yourself by only having x-ray procedures performed by qualified personnel. You should follow any instructions given by your dentist. To prevent any unnecessary exposures, a lead apron may be used to shield the parts of your body not being x-rayed. Tell your dentist if you are pregnant, might be pregnant, or are nursing.

Finally, before having an x-ray, if you have any concerns or questions, don't hesitate to ask your dentist.

## Resources

You can explore this radiation source further through the resources at the following URL:  
[http://www.epa.gov/radtown/dental\\_xray.htm#resources](http://www.epa.gov/radtown/dental_xray.htm#resources)

We provide these resources on-line rather than here so we can keep the links up-to-date.