AMERICAN DENTAL ASSOCIATION

X-rays

Frequently Asked Questions (FAQ)

How do dental X-rays work?

When X-rays pass through your mouth during a dental exam, more X-rays are absorbed by the denser parts (such as teeth and bone) than by soft tissues (such as cheeks and gums) before striking the film. This creates an image on the radiograph. Teeth appear lighter because fewer X-rays penetrate to reach the film. Cavities and gum disease appear darker because of more X-ray penetration. The interpretation of these X-rays allows the dentist to safely and accurately detect hidden abnormalities.

How often should X-rays be taken?

How often dental X-rays (radiographs) should be taken depends on the patient's individual health needs. It is important to recognize that just as each patient is different from the next, so should the scheduling of X-ray exams be individualized for each patient. Your dentist will review your history, examine your mouth and then decide whether you need radiographs and what type. If you are a new patient, the dentist may recommend radiographs to determine the present status of the hidden areas of your mouth and to help analyze changes that may occur later.

The schedule for needing radiographs at recall visits varies according to your age, risk for disease and signs and symptoms. Recent films may be needed to detect new cavities, or to determine the status of gum disease or for evaluation of growth and development. Children may need X-rays more often than adults. This is because their teeth and jaws are still developing and because their teeth are more likely to be affected by tooth decay than those of adults.

What are the benefits of a dental X-ray examination?

Many diseases of the teeth and surrounding tissues cannot be seen when your dentist examines your mouth. An X-ray examination may reveal:

_ small areas of decay between the teeth;
_ infections in the bone;
_ abscesses or cysts;
_ developmental abnormalities;
_ some types of tumors.

Finding and treating dental problems at an early stage can save time, money and unnecessary discomfort. It can detect damage to oral structures not visible during a regular exam. If you have a hidden tumor, radiographs may even help save your life.

How do dental x-rays compare to other sources of radiation?

We are exposed to radiation every day from various sources, including outer space, minerals in the soil, and appliances in our homes (like smoke detectors and television screens).

Source	Estimated Exposure (mSV*)
Dental radiographs x	
• Bitewings (4 films)	0.038
• Full-mouth series (about 19 films)	0.150
Medical radiographs x	
• Lower GI series	4.060
• Upper GI series	2.440
• Chest	0.080
Average radiation from outer space In Denver, CO (per year)	0.510
Average radiation in the U.S. from Natural Sources (per year)	3.000

Source: Adapted from Frederiksen NL. X-Rays: What is the Risk? Texas Dental Journal. 1995;112(2):68-72.

*A millisievert (mSV) is a unit of measure that allows for some comparison between radiation sources that expose the entire body (such as natural background radiation) and those that only expose a portion of the body (such as radiographs).