# Dental radiographs
## Benefits and safety

Dental radiographs (often called x-rays) are an important part of your dental care. Along with an oral examination, they provide your dentist with a more complete view of what's happening in your mouth.

### BENEFITS OF DENTAL RADIOGRAPHS

A dental radiograph gives your dentist a picture of your hard tissues (teeth and bones) and the soft tissues that surround your teeth and jawbones. For example, dental radiographs may help your dentist see

- caries (tooth decay) that develops between the teeth or under restorations (fillings);
- diseases in the bone;
- periodontal (gum) disease;
- infections that develop under your gums;
- some types of tumors.

Dental radiographs can alert your dentist to changes in your hard and soft tissues. In children, radiographs allow the dentist to see how their teeth and jawbones are developing. Like medical radiographs, dental radiographs allow your dentist to evaluate any injuries to your face and mouth.

Dental radiographs can help your dentist identify diseases and developmental problems before they become serious health issues. Early detection of an infection or injury also can limit or prevent further damage to other areas of the mouth.

### SAFETY OF DENTAL RADIOGRAPHS

Some people wonder if dental radiographs are safe because they expose the patient to radiation. Several factors and practices work together to make dental radiography safe.

The amount of radiation used to obtain dental radiographs is very small. For example, bitewing radiographs—two to four images of the back teeth—expose a patient to about 0.005 millisieverts (mSv) of radiation (a millisievert is a unit of measure).[1] By comparison, because radiation is part of our environment, people in the United States are exposed, on average, to 3.2 mSv every year from background sources of radiation.[1]

Dentists follow the ALARA principle, which stands for "As Low As Reasonably Achievable," when obtaining radiographs. This radiation safety principle limits your exposure by incorporating the following techniques:

- use of the fastest image receptor (that is, the fastest film speed or digital speed);
- reduction in the size of the x-ray beam to the size of the image receptor whenever possible;
- use of proper exposure and processing techniques;
- use of leaded aprons and, whenever possible, thyroid collars.

If you are seeing a new dentist, be sure to provide him or her with copies of your existing radiographs to avoid duplicating them. This also will help limit your exposure to radiation.

Your dentist will decide when radiographs are needed on the basis of your oral examination findings, any symptoms you report, a review of your health history, your risk of experiencing oral disease, your age, or any combination of the preceding. A dental staff member will place a leaded apron on your body during the procedure. He or she also may place a leaded collar around your neck to shield your thyroid gland (located in your neck) but only if its use does not interfere with the procedure. The lead in the apron and collar shields your organs from radiation exposure.

Because of the low radiation dose associated with dental radiographs, people who have received radiation treatment for head and neck cancer can undergo dental radiography safely. In fact, head and neck radiation treatment can increase the risk of developing tooth decay, making the radiographs all the more important for these patients.

If you are pregnant, tell your dentist. During your pregnancy, you may need to have radiographs taken as part of your treatment plan for a dental disease that requires immediate attention. Use of the leaded apron and collar will protect you and your fetus from radiation exposure.

To learn more about the benefits and safety of dental radiographs, talk with your dentist. ■



"For the Dental Patient" provides general information on dental treatments to dental patients. It is designed to prompt discussion between dentist and patient about treatment options and does not substitute for the dentist's professional assessment based on the individual patient's needs and desires.

1. American Nuclear Society. Radiation dose chart. "www.new.ans.org/pi/resources/dosechart/msv.php". Accessed Aug. 2, 2011.