Are dental X-rays really necessary?

Posted by Constance R. Kuntupis/Ohio State University October 29, 2008 03:04AM

Many diseases, lesions and conditions can only be detected with the use of dental radiographs. It is impossible to see directly between the teeth or under the gums or bone without the use of a dental radiograph.

Many times the patient has no signs or symptoms of disease. Without the use of dental radiographs, the dentist is limited to detect only the disease which is visible in the mouth.

Dental X-rays can detect disease much sooner than the clinical examination alone. This enables the dental practitioner to identify problems early so that pain and extensive, costly treatment can be avoided. The dentist knows each patient's health history and susceptibility to oral disease and is in the best position to make this professional judgment in the interest of each patient.

How often should I have dental X-rays?

Dental X-rays are prescribed based on the needs of the individual. The dentist must weigh the benefits of disease detection against the risk of radiation exposure.

There are guidelines published by the American Dental Association that are used to aid the dentist in prescribing the number, type, and frequency of dental radiographs. However, the dentist knows each patient's health history and susceptibility to oral disease and is in the best position to make this professional judgment in the interest of each patient. For example, a patient with a high decay rate will need X-rays more frequently than a patient without such disease.

How often should children have dental X-rays?

Children with decay will need X-rays more frequently than children without decay. There is no set time interval between X-ray exposures. The radiographic exam should be based on the needs of the individual child. For example, children with decay will need X-rays more frequently than children without decay.

Can the dentist use my X-rays from my previous dentist?

If the X-rays are of good diagnostic quality and are recent enough then the dentist may use them for the oral radiographic examination. Some additional radiographs may still be necessary depending on the needs of the individual.

How are X-rays measured?

Just like there are ways of measuring distance in miles or kilometers and weight in pounds or kilograms, there are ways to measure X-ray exposure. The roentgen is a way of measuring radiation exposure. The amount of energy absorbed by tissue is termed the rad or radiation absorbed dose.

How much radiation will I receive from dental X-rays?
We are exposed to radiation every day from various sources such as; airplane travel, high altitudes, radon gases and home appliances.

<table>
<thead>
<tr>
<th>Source</th>
<th>Estimated Exposure (mSV*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental radiographs</td>
<td></td>
</tr>
<tr>
<td>Bitewings (4 films)</td>
<td>0.038</td>
</tr>
<tr>
<td>Full-mouth series (about 19 films)</td>
<td>0.150</td>
</tr>
<tr>
<td>Medical radiographs</td>
<td></td>
</tr>
<tr>
<td>Lower GI series</td>
<td>4.060</td>
</tr>
<tr>
<td>Upper GI series</td>
<td>2.440</td>
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<tr>
<td>Chest</td>
<td>0.080</td>
</tr>
<tr>
<td>Average radiation from outer space</td>
<td></td>
</tr>
<tr>
<td>In Denver, CO (per year)</td>
<td>0.510</td>
</tr>
<tr>
<td>Average radiation in the U.S. from</td>
<td></td>
</tr>
<tr>
<td>Natural sources (per year)</td>
<td>3.000</td>
</tr>
</tbody>
</table>


*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).

**Why do you use a lead apron?**

It is important that we do everything that we can to reduce the amount of radiation exposure when a patient has dental X-rays taken. The lead in the lead apron with the lead thyroid collar actually prevents the radiation from reaching the radiosensitive organs, such as, reproductive, blood forming and thyroid tissues from scatter radiation.

**Should dental X-rays be taken during pregnancy?**

The accepted cumulative dose of ionizing radiation during pregnancy is 5 rad (.05 Sv). According to the American Academy of Family Physicians, you would need 50,000 dental X-ray examinations to reach the 5-rad cumulative dose to the fetus. The decision to order films during pregnancy is a personal one. Because of the relatively low dose, it is not expected that there will be any harm to the fetus. However, many dentists elect to postpone the radiographic exposures to those needed to treat the patient during the pregnancy (symptomatic teeth or active decay).

**Why does the dental radiographer leave the room when X-rays are used?**

Dental X-rays should only be used when the benefit of disease detection far outweighs the risk of any dental X-ray exposure. The dental radiographer will not benefit from the exposure to the X-rays so the best protective measure is to maintain adequate distance and shielding.

**Can’t my dental office use one large extraoral panoramic radiograph instead of several of the smaller intraoral radiographs?**

No. A panoramic radiograph cannot be used as a substitute for a complete series of intraoral radiographs. The panoramic radiograph gives an overall view of the teeth and jaws, however it does not show as much detail as the intraoral radiograph.

**Who owns my dental radiographs?**

The dental record, including all of the dental radiographs belong to the dentist, however, the patient is entitled to a copy of the dental radiographs.

Tags: Constance R. Kuntupis, dental, Ohio State University, x-rays

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