

Problem Solvers 33 X-Rays in General Dentistry

Synonyms: Radiographs,films,x-rays

Dental x-rays can show important information to a dentist such as cavities between the teeth that cannot be seen clinically, infection around a root surface, how close a cavity may be to the living pulp tissue in the middle of the tooth, and many other valuable pieces of information involved in making a proper diagnosis.

What are the different types of dental x-rays used for and why are they important?

For adults, a full mouth series of dental x-rays, includes 18 different views. These are the standard x-rays in a dental office used to diagnose cavities in between teeth. They can also help diagnose cavities beneath other fillings, severity of cavities, bone level around your teeth, infection, gum disease, root canal treatments, and other important every day oral health problems. A full series is usually taken at least every 3 years with supplemental films taken as needed. A patient with high risk for oral health problems or a younger patient may need x-rays to be taken more often.

Panoramic x-rays are one large x-ray that gives a full view of a patients mouth. These x-rays are useful for looking at development of teeth and impacted wisdom teeth, as well as infections. However, these are less diagnostic for problems such as cavities

An occlusal view x-ray is used least frequently and would be taken to analyze skeletal and/or pathologic conditions of the floor of the mouth of the palate.

Are dental x-rays safe?

Dental x-rays are safe. The amount of radiation one is exposed to is negligible. It is equivalent to a few days of background radiation one encounters on a regular basis or an airplane flight. It has been noted that a full set of dental x-rays taken weekly would not equal the exposure to natural radiation at high altitudes.

The apron that is used in most dental offices to protect from this radiation is mostly for the patients to feel safe but is not fully necessary. It does help shield some radiation from the abdomen and thyroid, however the amount of radiation encountered is consistent with many other activities in life.

The ALARA principle is used in dental x-rays. ALARA is an acronym for "as low as reasonably achievable," This means that it is a dentist's responsibility to make every reasonable effort to keep exposures to radiation as far below the dose limits as practical.

Overall dental x-rays pose a much bigger benefit than risk.

What are the differences between traditional photographic film x-rays and digital x-rays?

The most significant difference is that the digital x-rays are much quicker. One does not have to wait for the time it takes to develop the x-rays. They also make it easier to have patient's charts available on computers. In case of digital dental x-ray, the picture can be enlarged to get a better view, color can be contrasted, and the image can be zoomed or manipulated to a targeted area. Studies have also shown that up to 80% radiation exposure for digital x-rays.

Drawbacks are that the sensors for digital x-rays are often larger and thicker than traditional x-ray sensor plates. This can cause discomfort in a patient's mouth or inability for a patient to close properly. Also, it has been argued that the digital x-rays are not quite as diagnostic yet as the traditional method.

What do I do if I am pregnant and need x-rays to be taken?

The untreated problem could cause a health risk to the mother and the unborn child. The radiation from dental x-rays is low as previously discussed and every precaution is taken to make sure that ALARA is achieved (As Low As Reasonable Achievable). If it is feasible, your dentist will most likely wait until the third trimester to take any x-rays. If the problem is of a minor nature, the dentist may avoid all x-rays until after the baby has been delivered.

How do dental x-rays compare to medical x-rays in terms of radiation?

Dental x-rays usually give off 0.7 to 1 milli roentgen per exposure. For a set of 18 that is taken once every 3 years, it will total around 18 milli roentgens. In comparison, a typical medical x-ray will be about 20 milli roentgens. In a year, it has been estimated that one will be exposed to 100 milli roentgens of radiation from the sun alone.

What are CAT scans (CT scans) used for in dentistry?

CAT (computerized axial tomography) scans can give a doctor a three dimensional image of the inside of an object. CT scans are very useful in placing dental implants to get a full picture of a patient's underlying bone, tissue, and nerves. Implants are very technique sensitive and it is important to have this information that is more specific than your average two-dimensional dental x-ray. CT scans can also be used for accurately diagnosing endodontics, orthodontics, and TMJ analysis. They can help assess tumors, growths and fractures that may not be visible in any other fashion.

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