Dental X-ray Examinations

A guide for patients

Radiographic examinations of the mouth and teeth are important in the diagnosis and management of many dental conditions. Using radiographs, your dentist can detect problems that may not be seen during a routine examination, and sometimes before symptoms appear.

Oral cancer, cysts, infections, hidden caries, impacted teeth and bone loss due to gum disease are among the many conditions that can show up during examinations. With early detection, a problem can be treated before it becomes serious, requiring treatment that is more involved.

Radiographs are often necessary before procedures such as tooth extraction, fitting of removable prostheses, fitting of braces, placement of crowns and bridges, and root canal treatment. Information from the radiograph assists your dentist in planning the procedure.

After an injury to the teeth and jaws, a radiographic examination helps your dentist diagnose the full extent of damage.

Radiographs fall into three main categories:

▪ **BITEWINGS**, so named because you have to bite down on a piece of paper or plastic that is centred on the film. These are used mainly to detect or confirm decay in teeth and to assess the presence of gum disease between teeth. A bitewing radiograph gives a clear picture of the crowns of upper and lower teeth. Such images may show metal or acrylic crowns, fillings, surrounding bone and caries.

▪ **PERIAPICAL FILMS**, which show the entire tooth, including its root and surrounding bone. These images may be used for examining root tips of teeth, diagnosing bone loss due to gum disease, locating cysts and abscesses, and detecting inflammation of the bone due to infections within the root canals of teeth.

▪ **PANORAMIC FILMS**, which give a view of the entire upper and lower jaws. These images give the dentist an overall view of a patient's teeth. They are particularly useful for identifying:

- abnormal growths in the jawbone
- trauma to the jaws
- problems with wisdom teeth.

As panoramic films show less ail than bitewing and periapical films, bitewing and periapical films are often required in addition to the panoramic film.

Panoramic images are often used to provide an overview of developing teeth in children. They help your dentist to decide whether a child needs braces.

X-ray Imaging

The term "X-ray" refers to the radiation used to create an image on film or on a computer screen. Tooth decay changes the composition of the hard tooth structures (enamel and dentine) and allows the passage of more X-rays.

Therefore, a decayed area will appear darker on the image than healthy enamel and dentine.

Similarly, inflammation around the root tip of a tooth may destroy bone and appear as a darker area on the image.

Examination by your Dentist

Your age, dental history and symptoms determine how many, how often and what type of radiographic examination is necessary for you. If you are a new patient, your dentist is likely to want you to undergo a radiographic examination to evaluate your general oral health.

Dentists generally recommend a radiographic examination regularly. The frequency is different for each individual, depending on their oral health and the rate of tooth decay.

If you have had extensive dental treatment, you may need regular radiographic examinations m ensuing years.

With some dental conditions, children may need radiographic examinations more often than adults.

If you attend a different dentist, you may authorise copies of your records to be forwarded to your new dentist. The dentist who owns the X-ray films is entitled to recoup costs for their duplication, if required.

Always feel free to discuss with your dentist any queries you may have about radiographic examinations, including how many you have had.

Radiation Exposure

Modern dental practices have greatly reduced the risks once associated with X-rays. X-ray equipment must comply with an Australian Standard, and dentists follow strict guidelines. Every precaution is taken to minimise exposure to radiation.

High-speed films are used to limit exposure time and therefore patients' exposure to the X-rays. Special filters in the machine also help to reduce radiation.

The radiation you receive from one dental radiograph is less than you receive on any given day from background radiation (radiation from the atmosphere, the sun and the stars). It is also less than you would receive on an interstate airline flight.

Many advances have been made in recent years to reduce the levels of radiation exposure from radiographs. These are due to advances m film technology, screening procedures and digital imaging.

There is a known health risk, albeit minimal, associated with radiographs. However, as in all fields of diagnosis and treatment, it is a case of risk versus benefit.

Digital Radiographic Examinations

Digital radiography uses a sensor or phosphor plate, rather than the film used in traditional radiographic examinations. After the X-rays hit the sensor, the image is processed by a computer. The dentist and patient can then look at the images on the computer screen. The image can then be stored in digital format (for example, on a hard disk, CD or DVD).

Digital radiographic examinations generally do not use as much radiation as traditional radiographic procedures.

Dental Radiographs and Pregnancy

Be sure to let your dentist know if you are pregnant or could be pregnant. If your dental problem requires a radiographic examination, then do not worry because the dose of radiation and the risks to the unborn child are extremely low. In fact, the failure to treat oral disease may do more harm. According to the National Health and Medical Research Council, dental radiographic examinations can be done during pregnancy provided that precautions are taken to limit the foetal exposure to X-rays by the use of a lead apron.

If you are thinking of having a baby, it is a good idea to have a dental examination before you become pregnant. In this way, you will reduce or avoid the need for a dental X-ray examination during your pregnancy.

Talk to Your Dentist

This pamphlet is intended to provide you with information about dental radiographs. It does not replace advice from your dentist and should be used only in consultation with your dentist. It does not contain all known facts about dental radiographs. If you are not sure about any points discussed in this pamphlet, ask your dentist. Your dentist will be pleased to answer any questions or concerns you may have about dental radiographs.