

Guidelines for The Use of X-Radiation
By The Members Of
The College of Dental Surgeons of Saskatchewan

Operators:

1. All operators must know of radiation hazards and be able to adequately protect themselves, patients and others.
2. All operators must have an adequate knowledge of radiation physics, techniques and their own equipment to be able to produce radiographs of diagnostic quality with the least patient exposure practicable.
3. All operators must be of 18 years of age or older.
4. All operators must be licensed or certified according to a standard recognized by the College of Dental Surgeons of Saskatchewan.
5. Any female operator who suspects she is pregnant should inform her employers and together with him/her ensure that for the remainder of her pregnancy her duties are compatible with minimum radiation exposure.

Operators-In-Training:

All operators-in-training or inexperienced operators must work only under direct supervision of an experienced operator. Operators beginning training at an age less than 18 years must not receive an annual dose equivalent exceeding 1.5 rem (15 mSv).

Building and Equipment:

All aspects of equipment manufacture or import installation and shielding must conform to the Federal and Provincial Acts and Regulations that govern these items.

Films and Processing:

1. Films should be stored in a cool, dry place away from chemicals and radiation.
2. Films must be processed under light-tight conditions in a darkroom or daylight hood.
3. Manufacturers' directions must be followed in the preparation and use of processing chemicals, including concentration of solution, time and temperature.
4. Safelights should be installed as per manufacturers directions and compatible with all films used. Red bulbs are not acceptable. Screen film such as pantomographic films are more sensitive to light than intraoral dental films. Care must be taken to ensure that no light of incorrect wavelength reaches these films.
5. Films should be handled carefully to avoid creasing, scratching and static electricity.

Radiation Protection for Office Personnel:

The dentist has the responsibility to ensure that proper radiation hygiene procedures are understood and followed by all members of the staff.

1. A room must not be used for more than one radiographic procedure simultaneously.
2. No person whose presence is not essential must be in the room during exposure.
3. Persons other than the patient must keep as far away as practicable from the primary beam. Personnel must not be exposed to the useful beam. Deliberate exposure for training purposes only must not occur.
4. Personnel must take full advantage of the protective devices available.
5. If necessary for the operator to be in the room during special procedures, protective clothing must be worn.
6. Where possible, film holding devices should be used during exposure. If necessary the patient should hold the film. The operator should not hold the film; if this is necessary (this should not become a habit), protective clothing including gauntlets should be used.
7. If weak patients or children need support, holding devices should be used. If parents, escorts, or other personnel are required to assist, they must be provided with adequate protective clothing and be positioned outside of the primary beam. No one person should regularly perform these duties.
8. The x-ray housing must not be held by hand during operation. Housing that drifts or vibrates excessively should have their supports adjusted.
9. All operators of x-ray equipment, personnel who regularly participate in radiological procedures or others who might receive more than $1/10^{\text{th}}$ of the yearly maximum permissible doses should wear personnel dosimeters. When worn with a lead apron it must be worn under the apron.
10. Energized x-ray machines must not be left unattended in a freely accessible location.
11. Where radiation doses in excess of 25% of the maximum permissible doses are being received regularly by any one person, appropriate remedial steps must be taken to improve techniques and protective measures.

The Patient:

One of the largest contributors of man-made radiation exposure of the population is diagnostic radiology. It has been stated by some that some of this is unnecessary and should be eliminated.

It is the responsibility of the dentist and under direction from him, his staff, to ensure that patients receive no more radiation than necessary. The recommendations and procedures in this section should prove guidelines to the dental practitioner to allow him to meet these goals.

1. Radiographs should be made only after clinical evaluation and should be for the purpose of obtaining information not readily otherwise available.
2. Radiographs should not be taken on a "routine" basis, but only on the basis of the above (Item 1).
3. The dentist should check if recent films are adequate or can be used to alter the type and number of films required. They should be examined at the time of clinical evaluation.
4. When a patient transfers, or is referred from one practitioner to another, relevant films or copies should be forwarded to the new practitioner and be reviewed by him. They can be returned to the first practitioner when they have served their purpose.
5. The number of radiographs required should be kept to the minimum practicable, consistent with obtaining the required information.
6. The fastest films or screen-film combinations consistent with obtaining the required information should be used. The beam should be well collimated.
7. Repeat exposures should not be prescribed merely because the film is not of the "best" diagnostic quality if the radiograph contains the required information.
8. The quality of radiographs should be monitored routinely to ensure that they satisfy diagnostic requirements with minimal patient exposure.