



Position Statement: Dental Radiology Teaching or Training Programs

This statement pertains to programs and facilities providing formal instruction of high school, vocational, continuing education, or college students in activities involving the use of x-ray equipment. In particular, this Position Statement addresses radiation safety expectations pertaining to dental radiology teaching or training of students. It updates an earlier statement dated July, 1975.

NCRP Report #32, Radiation Protection in Educational Institutions, specifies that students under 18 years of age exposed to radiation during educational activities should not receive whole body radiation doses exceeding 100 millirem per year due to their educational activities. To provide an additional safety factor, the NCRP also recommends that each experiment or training session be so planned that no individual receives more than 10 millirem while carrying it out. We endorse the philosophy of the NCRP, not just for students under 18 but for all students. This is due, in part, to recognition of genetic concerns over unnecessary radiation dose to persons who are not beyond reproductive age. With this recognition and in conformance with the accepted radiation safety concept of maintaining radiation doses as low as reasonably achievable (ALARA), we recommend that no dental radiology student, regardless of age, receive radiation doses exceeding 100 millirem per year due to educational activities. Furthermore, no individual should receive more than 10 millirem per training session.

We are aware of the sensitivity limitations and some other limitations of existing means of personal dosimetry. Therefore, it is necessary to also subscribe to very stringent physical protection criteria rather than relying solely on procedural controls to ensure the desired radiation safety results.

Listed below are the criteria of the Radiation Safety Section for the approval of dental radiology teaching or training facilities and programs under Michigan's *Ionizing Radiation Rules*. The criteria established in this Position Statement are intended to meet the intent as well as the letter of the rules and to maintain radiation doses as low as reasonably achievable.

1. Potential radiation exposure of students under 18 years of age in a dental radiology teaching or training program shall be limited to x-ray installations that are within the teaching or training facility and that are under the immediate supervision of the individual designated in charge of radiation safety for the program. This precludes assignment of students under 18 to private dental offices for radiological experience training.
2. An x-ray installation used by a dental radiology teaching or training program shall be designed and shielded in such a manner that the x-ray machine cannot be operated from an unshielded position and that observers during classroom demonstrations or laboratory sessions will not be exposed to unattenuated primary or secondary radiation.

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3. An x-ray installation in a professional school for the practice of dentistry, even one that is used only for clinical purposes by that school, should meet the same design and shielding expectations as outlined in 2 above. However, on a case-by-case basis, alternate shielding and design expectations for such clinical installations may be individually evaluated.
4. Approval of x-ray room shielding and design by the Radiation Safety Section is necessary prior to use of x-ray equipment by students. Shielding and design evaluations prior to x-ray room construction and installation of x-ray equipment are available upon request by submission of plans and specifications to the Radiation Safety Section.
5. A brief statement of a teaching or training program's procedures for radiation safety is required with submission of an application for x-ray equipment registration. Registration of x-ray equipment with the Section is required prior to use of such equipment.
6. Students under 18 years of age participating in a dental radiology teaching or training program shall be assigned individual radiation dosimeters provided by a dosimetry supplier that is accredited by the National Institute of Standards and Technology through the National Voluntary Laboratory Accreditation Program. The program shall require and ensure that students wear their individual dosimeters during the course of x-ray machine operation within the program. Student dosimetry records shall be maintained on permanent available file at the facility.
7. X-ray exposures or films taken for demonstration or training purposes during classroom or laboratory sessions shall be made with phantoms or other inanimate objects in the beam. No student shall be permitted within an x-ray room during such exposures.
8. Intentional x-ray exposure of students or others at a teaching or training facility shall be limited to exposures specifically prescribed by and taken under the supervision of a licensed dentist. Such prescribed exposures shall be for legitimate diagnostic purposes, and if diagnostic exposures are prescribed, this practice shall be clearly described in the program's procedures for radiation safety addressed in item 5 above.

If there are questions regarding this position statement, please contact:

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