

# Root of The Matter: Dental Radiography Equipment – Amended Health Canada Regulations: Information for Those Registrants Who Own Radiography Equipment

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In May 2018, the consultation period ended and the regulations amending the Radiation Emitting Devices Regulations (Dental X-ray Equipment) from the Government of Canada were implemented. Dental radiography is a widely used and valuable tool that supports the diagnosis and treatment of dental health concerns.<sup>1,2</sup> Due to the risks associated with the exposure of radiographs and x-radiation, careful management of dental x-ray equipment imported, sold and leased in Canada is imperative.<sup>1,2</sup>

The Amended *Radiation Emitting Devices Regulations* were recently updated to align with the international standards of the International Electrotechnical Commission (IEC) 2012.<sup>1,2</sup> To strengthen Canada's regulatory system, amendments were made to:<sup>1,2</sup>

- Strengthen radiation safety requirements to more effectively protect operators and patients;
- Incorporate additional types of dental X-ray equipment due to advancements in technologies; and,
- Require manufacturers, importers or distributors to provide more information to support optimized equipment use (i.e. lowest dose possible).



The amended requirements affecting dental X-ray equipment (conventional wall-mounted and mobile dental X-ray equipment, panoramic equipment, cephalometric equipment, CBCT equipment and mobile dental X-ray equipment) are as follows:<sup>1,2</sup>

- *Information and labelling requirements for dental X-ray equipment:* The amendments require manufacturers to provide more extensive instructions including quality control procedures and dosimetric information. This will allow for operators to protect themselves and the client from unnecessary radiation exposure.
- *Construction standards:* To reduce the radiation risk that the patient and operator are exposed to during operation of x-ray devices, features such as increasing minimum tube voltage setting (from 50kV to 60kV), decreasing exit field size for intra-oral devices (maximum diameter from 7cm to 6cm), radiation absorbing filters (increasing minimum attenuation requirements for extra-oral devices), X-ray field limitations, and focal spot to skin distance (increased to 20cm for intra-oral devices) have been amended.
- *Functioning standards:* Criteria for x-ray equipment to function within parameters that improve the loading factors accuracy and restrict leakage radiation will protect operators and patients from unnecessary exposure to doses of radiation.

These amendments provide greater protection to the public and operators. They also permit the importation and sale of transportable hand-held dental X-ray equipment, with safety requirements specific to these hand-held devices.<sup>1,2</sup> Of note, hand held devices are not meant to be used in a store front independent dental hygiene practice, rather for use when a fixed or mobile unit is not feasible. In addition to this, hand-held equipment must have backscatter shielding and a mount to support the equipment. This is to ensure the operator is not holding the x-ray equipment during a radiography exposure.<sup>2</sup>

The College of Dental Hygienists of BC requires registrants who own or lease their own radiography equipment to be familiar with the Radiation Protection Program and Safety, and to comply with the federal and provincial safety regulations.<sup>3</sup>

### References:

1. Government of Canada. Regulations Amending the Radiation emitting Devices Regulations (Dental X-ray Equipment). Updated November 15, 2017. Retrieved from: <http://www.gazette.gc.ca/rp-pr/p2/2017/2017-11-15/html/sor-dors228-eng.html>
2. Regulations Amending the Radiation Emitting Devices Regulations (Dental X-ray Equipment). Canada Gazette Part II, Vol. 151, No. 23, p. 34-52. Ottawa, Canada. November 15, 2017. Retrieved from: <http://www.gazette.gc.ca/rp-pr/p2/2017/2017-11-15/pdf/g2-15123.pdf#page=34>
3. The College of Dental Hygienist of BC. Radiation Protection Program and Safety. November 2015 pgs. 3103-3133. Retrieved form : <http://www.cdhbc.com/Practice-Resources/Interpretation-Guidelines/Radiation-Protection-Program-and-Safety.aspx>