



Nova Scotia Regulator of
**Dental Hygiene, Dental Technology,
and Denturism**

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NOVA SCOTIA REGULATOR OF
DENTAL HYGIENE, DENTAL
TECHNOLOGY, AND DENTURISM

Practice Standard for Dental Hygienists
on the Use of Ionizing Radiation
For Consultation

DRAFT APPROVED BY CDHNS COUNCIL FOR CIRCULATION FOR FEEDBACK: April 11, 2025

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1. Introduction

Dental hygienists play a critical role in preventing, diagnosing, and treating oral diseases. As part of their scope of practice, dental hygienists may order and expose dental radiographs (X-ray imaging/ionizing radiation) to diagnose conditions such as decay and periodontal disease. This practice standard outlines the requirements that dental hygienists must follow to ensure safe and competent use of ionizing radiation, adherence to best practices, regulatory requirements, and ethical obligations, including prioritizing client safety, informed consent, and professional accountability.

2. Guiding Principles

1. **Client Safety** – Dental hygienists perform radiographic procedures with attention to minimizing exposure and maximizing diagnostic value.
2. **Competence and Accountability** – Dental hygienists are (1) educated and remain competent and current in radiation safety and imaging interpretation and diagnosis¹, and (2) provide services that are within the dental hygiene scope of practice, and which they are individually competent to perform.
3. **Professional Collaboration** – When necessary, dental hygienists consult, or refer to, other health professionals to ensure appropriate interpretation and diagnosis.

3. Ordering and Justification of Dental Radiographs

Dental hygienists:

- Order dental radiographs based on a client's health history, risk factors, clinical findings, and professional judgment.
- Adhere to evidence-informed guidelines for prescribing dental radiographs
- Document the justification for radiographic imaging in the client's record.
- Take radiographs only when necessary to assist in diagnosis and treatment/care planning, avoiding indiscriminately taking of images.
- Verify the availability of previous radiographs, prior to ordering radiographs, to avoid unnecessary exposure.

4. Types of Dental Imaging (Ionizing Radiation)

Dental hygienists, who are appropriately trained and educated, use their professional judgement to determine the most appropriate imaging techniques to meet their client's needs, including ionizing radiation. Below are the two main ionizing radiation techniques used in the oral health care field:

- **Digital Radiography (2D Imaging):** Includes intraoral (bitewing, periapical) and extraoral (panoramic) imaging with digital sensors.
- **Cone Beam Computed Tomography (CBCT):** A 3D imaging technique used for detailed views of bone structures.

¹ "The use of critical decision-making skills to reach and communicate conclusions about the client's dental hygiene needs based on all available assessment data and evidence in the literature (includes referrals to a dentist or other medical professionals)" (Bowen & Pieren, 2020, p. 2).

5. Application of Dental Radiographs

Dental hygienists:

- Follow the ALARA (As Low As Reasonably Achievable) to minimize radiation exposure.
- Use proper lead shielding, collimation, and select the lowest effective radiation dose.
- Use appropriate techniques (e.g., paralleling technique) to ensure high-quality images while minimizing retakes.
- Conduct radiographic procedures following workplace and regulatory radiation safety protocols, including [Safety Code 30](#).
- Maintain records of retakes² to facilitate a radiation quality assurance program.

6. Interpretation and Diagnosis

Dental hygienists:

- May interpret radiographs to diagnose dental caries (decay) and periodontal disease.
- Ensure that the ordered image(s) are fully interpreted, by either:
 - Interpreting the image themselves; or
 - Consulting with or referring to another health professional.
- Document radiographic findings accurately, including any observed abnormalities, or atypical radiographic findings, and recommendations for follow-up.

7. Informed Consent

- Before exposing a client to radiation, dental hygienists must obtain informed consent, ensuring the client understands:
 - The purpose and benefits of the radiographic procedure.
 - Potential risks associated with radiation exposure.
 - Alternative diagnostic options, if available.
 - The right to refuse the procedure without jeopardizing other aspects of care.
- Consent must be documented in the client's record.

8. Radiation Safety and Compliance

Dental hygienists:

- comply with all applicable federal, provincial, and local radiation safety regulations, including [Safety Code 30](#).

² According to Health Canada's Safety Code 30 (2022). M9. Reject/Retake Analysis: "For both film/screen and digital dental X-ray systems, an analysis must be done of the repeat records to identify and correct any trends or errors. Repeat images are defined as images taken due to inadequate quality, [e.g., required to open a contact]. This does not include images taken for quality control purposes or images taken to acquire additional views. Repeat records must be maintained and analyzed individually for each dental X-ray system."

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- Ensure that regular equipment maintenance and radiation monitoring (e.g., dosimetry badges) are conducted.
- Maintain competency by participating in continuing education in radiography and radiation safety.

9. Record Keeping and Documentation

Dental hygienists:

- Document all radiographic procedures, including orders, exposures, interpretations, and referrals, in the client's record.
- Ensure radiographic images are stored securely and retained per legal and regulatory requirements.
- Record and review any deviations from standard protocol, including retakes, processing errors, exposure incidents, for quality assurance.

10. Quality Assurance and Continuous Improvement

Dental hygienists:

- Participate in ongoing quality assurance programs to evaluate radiographic techniques, image quality, and adherence to safety standards.
- Encourage feedback and peer review to enhance competency and professional development in radiographic imaging.

11. Document History

First approved by the CDHNS on April 11, 2025, for circulation to registrants for consultation.

Following the consultation period, the final version will be approved by the CDHNS Council to come into effect when the CDHNS transitions to the [Regulated Health Professions Act \(RHPA\)](#) later in 2025. The Initial Board for the NSRDHDT must subsequently approve this Standard, upon migration.

Approximate date of next review: 2028

12. References

1. American Dental Association (ADA). (2022). *Dental Radiographic Examinations: Recommendations for Patient Selection and Limiting Radiation Exposure*. Chicago, IL: ADA.
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3. Bowen, D. M., & Pieren, J. A. (2020). *Darby and Walsh dental hygiene: Theory and practice (5th ed.)*. Elsevier.
4. Canadian Dental Hygienists Association (CDHA). (2021). *Radiographic Guidelines for Dental Hygienists*. Ottawa, ON: CDHA.
5. College of Dental Hygienists of Ontario (CDHO). (2023). *Standards of Practice for Dental Hygienists*. Toronto, ON: CDHO.

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6. European Academy of DentoMaxilloFacial Radiology (EADMFR). (2021). *Use of Cone Beam CT in Dental and Maxillofacial Imaging: Guidelines for Clinical Practice*.
7. Provincial Dental Board of Nova Scotia. (2023). *Guidelines for Prescribing and Taking Dental Radiographs*. Bedford, NS: PDBNS.
8. Health Canada. (2022). *Radiation Protection in Dentistry: Recommended Safety Procedures for the Use of Dental X-ray Equipment – Safety Code 30 (2022)*. Retrieved from <https://www.canada.ca>
9. National Council on Radiation Protection and Measurements (NCRP). (2019). *Radiation Protection in Dentistry and Oral & Maxillofacial Imaging*. Bethesda, MD: NCRP.