



White Paper: Radon at HOMES/OFFICES: Protecting Community Health Through Testing, Awareness, and Mitigation

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Proactive radon testing at YOUR HOME/OFFICE is a low-cost, high-impact step to protect community health, align with global best practices.

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Glossary of Terms

ALARA	As Low As Reasonably Achievable
Bq/m³	Becquerels per cubic metre
BCCDC	BC Centre for Disease Control
EPA	United States Environmental Protection Agency
EU	European Union
IARC	(International Agency for Research on Cancer
UBC	University of British Columbia
WHO	World Health Organisation





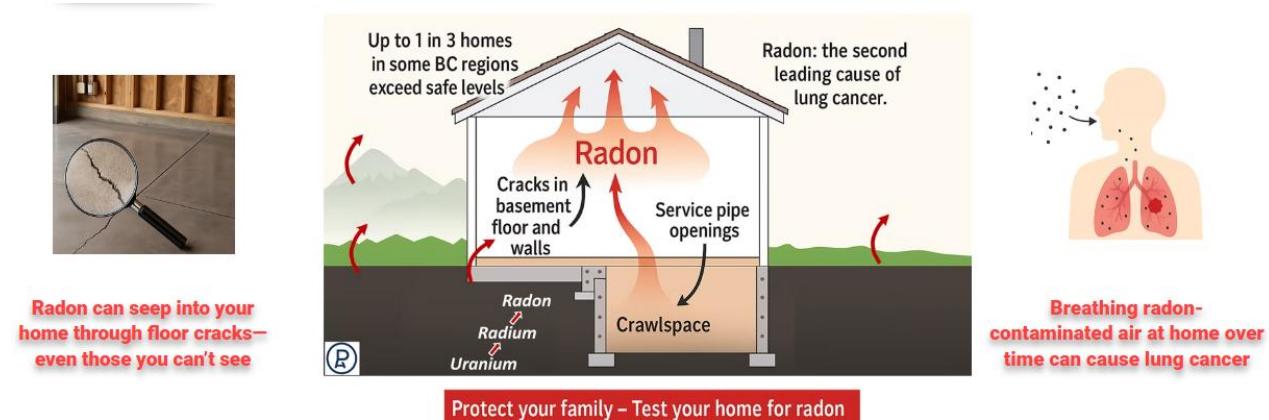
1. Executive Summary

Radon is the second leading cause of lung cancer after smoking, responsible for over 3,000 deaths annually in Canada (Health Canada). Family members (home residents) live 24/7 in their homes and office staff may spend decades working long hours on their work place—conditions that increase cumulative exposure risk if radon levels are elevated. Many HOME/OFFICE buildings—residences, laboratories, classrooms, and offices—are older or partially below grade, making them especially vulnerable to radon entry and accumulation.

Testing for radon is universally recommended: all major health agencies,—including WHO ([Link](#)), US CDC ([Link](#)), US EPA ([Link](#)), and the EU ([Link](#)), recommend radon testing in all homes, schools, indoor workplaces, and long-term care facilities. Health Canada ([Link](#)) & Canadian Cancer society ([Link](#)) recommend universal testing and BCCDC explicitly states: “*Testing is recommended in all homes* ([Link](#)). While Canada and BC have not yet mandated radon testing in workplaces or residences, international and U.S. regulations show a clear trend toward stricter requirements for homes, schools, and workplaces. Acting now is both ethically compelling and aligned with global best practices. By adopting a systematic program of testing, awareness, and mitigation, HOME/OFFICE can safeguard community health, anticipate regulatory change, and demonstrate leadership consistent with its mission and values of sustainability, accountability, and societal impact.

2. What is radon?

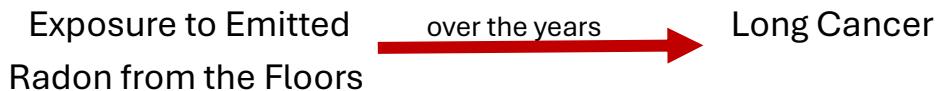
Radon is a naturally occurring radioactive gas released from the decay of uranium in soil, rock, and water. Because it is invisible, odourless, and tasteless, the only way to detect it is by testing ([Health Canada](#)). It enters buildings through cracks, joints, and gaps around pipes, and can accumulate to harmful levels in enclosed spaces, especially basements and below-grade areas ([US EPA Link](#); [Health Canada](#))





3. What are the health risks related to radon?

Radon is classified as a Group 1 human carcinogen by the International Agency for Research on Cancer and is the second-leading cause of lung cancer after smoking ([IARC](#)). In Canada, it is linked



to about 16% of lung cancer cases, causing over 3,000 deaths annually ([Health Canada](#)). Radon + Smoking = dangerous combination! Smoking dramatically increases the risk Radon induced lung cancer ([Health Canada](#)). There are reasons to believe children (higher breathing rates, developing lungs, longer future lifespan) and pregnant women, where minimizing exposure follows radiation protection principles might be more at-risk population. The risk is dose- and time-dependent—higher concentrations and longer exposures significantly increase cancer risk ([EPA Link](#)).

4. Does radon exist at YOUR HOME/OFFICE?

Yes. All buildings contain some level of radon—the concern is how high the concentration is. National surveys show that about 7% of Canadian homes exceed Health Canada's guideline of 200 Bq/m³ ([Health Canada](#)). In British Columbia, levels are higher in some regions, with 6–30% of homes in Interior and Northern BC above the guideline ([HealthLinkBC](#)).

5. Why is radon testing more important at YOUR HOME/OFFICE?

- Many YOUR HOME/OFFICE buildings are old and have structural features associated with radon entry and accumulation, such as foundation cracks and service penetrations.
- Many HOME/OFFICE facilities—including offices, laboratories, classrooms, and student rentals—are located on main floors or in basements, where radon concentrations are typically highest ([Health Canada](#)).
- Because lung cancer risk depends on both concentration and duration of exposure, work office setting presents unique vulnerabilities: office staff may spend decades working an average of seven hours a day in the same offices and labs, while families live continuously (24 hours a day) in campus housing.
- Some residents and staff may smoke, which increases the lifetime risk of lung cancer from about 2% for non-smokers to ~17% for smokers at 200 Bq/m³.
- Sensitive groups—including children, pregnant women, older adults, and individuals with pre-existing lung disease—might be at even greater risk.
- These risks are heightened for long-serving staff who may spend decades in the same offices, and families living 24/7 in campus housing, and for sensitive groups such as children, pregnant women, and those with chronic lung disease.
- Although Canada and BC have not yet mandated radon testing in workplaces or residences, acting now is both ethically compelling and consistent with global best practices.





- Proactively testing for and addressing radon exposure reflects your commitment to excellence in engagement, while safeguarding the health of your family. It aligns with the values of sustainability, accountability, and academic societal impact ([UBC Vision and Values](#)).

6. Is measuring radon at HOME/OFFICE “recommended” or “mandatory”?

- **Yes. Testing is universally recommended:** All major health agencies—Canadian and international—including WHO ([Link](#)), US CDC ([Link](#)), US EPA ([Link](#)), and the EU ([Link](#)), recommend radon testing in all homes, schools, indoor workplaces, and long-term care facilities. Health Canada ([Link](#)) & Canadian Cancer society ([Link](#)) recommend universal testing and BCCDC explicitly states: “*Testing is recommended in all homes* ([Link](#)).
- **Mandatory testing:** Regulations vary internationally. Although Canada and BC have not yet mandated radon testing in workplaces or residences, acting now is both ethically compelling and consistent with global best practices. International and U.S. policies already demonstrate a clear trend toward stricter requirements in homes, schools, and workplaces.
 - **For Homes - Mandatory:** Montgomery County, Maryland requires testing before home sales “a single-family home located in the County must be tested for radon before completing a sale of the home.” (County Code – Section 40-13C [Link](#)); Maine requires residential rental property testing and disclosure within 12 months of the occupancy of the building by a tenant (14 M.R.S. §6030-D [Link](#)).
 - **For Schools - Mandatory:** Colorado requires radon testing in schools, with retesting after construction or renovation (6 CCR 1010-6.8 [Link](#)). Florida mandates testing in all public and private school buildings or school sites housing students in kindergarten through grade 12, state-licensed 24-hour care facilities (Fla. Stat. §404.056, 2025 - [Link](#)). Iowa requires every public school district establish a radon plan and perform at each attendance center at least once by July 1, 2027, and at least once every five years thereafter (Iowa Code §280.32 [Link](#)). New Jersey mandates radon testing in all K-12 public schools at least once every five years (N.J. Stat. §18A:20-40 [Link](#)).
 - **For Workplace – Mandatory :** The UK requires workplace radon assessment under the Ionising Radiations Regulations 2017 (IRR17 [Link](#)). Ireland mandates radon testing if the workplaces is underground or on the ground floor or basement level in high radon areas (S.I. No. 30 of 2019 ([Link](#))).

7. What can we do about radon at HOME/OFFICE?

Given the health risks, HOME/OFFICE’s institutional priorities and vulnerabilities, and both federal and provincial recommendations, it is highly advisable to develop a roadmap that integrates education, awareness, systematic testing, and mitigation measures.

- **Testing:** Developing a roadmap for proactive testing would align HOME/OFFICE with global best practices (US, EU, Health Canada, Canadian Cancer Society, BCCDC), protect community health, and demonstrate institutional leadership. In BC, testing follows certified processes.





Short-term tests are inexpensive, while long-term tests provide the most reliable measure of annual exposure ([HealthLink BC Link](#)).

- **Awareness:** Providing information packages, workshops, and education sessions for residents and staff on radon risks and practical steps to reduce them—such as quitting smoking—will support informed decision-making and encourage proactive testing & mitigation.
- **Mitigation:** If radon levels exceed Canadian guideline values, a range of proven mitigation strategies can be applied. When properly implemented, these measures can reduce concentrations by more than 80% (Health Canada).

8. Call to Action

HOMES/OFFICES have the opportunity to protect the health of their families and staff. By adopting a proactive radon testing and mitigation program, HOME/OFFICE can mitigate a hidden risk. The cost of testing is low; the benefits are significant.

Acting now will safeguard the family, anticipate future regulatory requirements, and demonstrate your commitment to a healthy and sustainable healthy environment.

- ✓ Connect With an Expert for More Details

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