

► RADON: A RISK IGNORED

November marks the beginning of cold weather when most of us cozy up inside and close our windows to the fresh air. This is the perfect time to begin a long-term, 90-day radon detection test kit. Radon is a colourless, odorless, tasteless, radioactive gas that can seep into your home through cracks, joints, and gaps in the foundation. Radon gas can accumulate and when inhaled can expose your lungs to alpha radiation and the products of the radon decay chain. Radon is the second leading cause of lung-cancer in Canada attributed to about 16% of all lung cancers¹.

November is also Radon Action Month. Each year a campaign is run encouraging radon testing and mitigation by government, industry, and non-governmental organizations. This includes media releases, digital campaigns, and other various events all with the intent to raise radon awareness. The increase in public attention to radon is fleeting though.

Typically, the public is risk adverse to issues like radiation, while experts are often less concerned with the perceived risks. The public's risk aversion would suggest that with the knowledge that radon may be in their home, the public would attempt to lower that uncertainty, test for radon, and reduce the risk, mitigate if high levels are detected. However, research has found that less than 30% of those who have tested for radon and found levels which are above the national radon guideline of 200 Bq/m³ have taken action to reduce the levels of radon in their home². Additionally, the experts working in the radon sphere seem to be more risk averse than the public as they realise the risk which radon poses, and the impact that testing and mitigation can have in cancer prevention.

The lack of physical cues and the long-term health effect of radon allow the risk to be largely ignored by both the public and policymakers. As radon is a naturally occurring radioactive material it is a multi-jurisdictional issue. The federal government sets standards and guidelines that the provinces and municipalities adopt and implement. The national radon guideline for this reason is advisory. It is the responsibility of the individual to reduce the risk of radon. Biases such as optimism bias, people believe they will not be the one to get radon induced lung cancer, or availability bias, people do not perceive radon as a risk because they do not know anyone affected, create barriers to taking action³. In addition to these biases, risk communication can trigger a defensive response to the information presenting another challenge to reducing the risk of radon⁴. As a policy issue, radon is a part of the health portfolio and in competition with many other pressing issues such as the novel coronavirus and the opioid crisis. Provinces want to see a cost benefit analysis before diverting funds from other health issues to address radon. This has only recently become available⁵.

Radon presents a policy challenge; how do we get action to be taken to reduce the risk of an issue which is often ignored?

Continued effort is needed, and multiple avenues pursued. First, awareness campaigns need to continue as the issue of radon persists. This should include approaches to risk communication which overcome biases, including presenting the stories of those affected by radon induced lung cancer in the media. Education of health professionals and realtors to encourage further discussions

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about the risk of radon. As well as approaches which encourage public participation, such as Evict Radon's citizen scientist approach to radon research⁶. The continued work to increase public awareness typically leads to an increase in pressure on policymakers. Second, further approaches to policy that are preventative should be pursued. For example, radon was introduced into the National Building Code in 2010, which is revised on a periodic basis. As newly constructed homes have shown to have increased likelihood of high radon levels, further measures should be taken to prevent the problem from getting worse⁷.

References

¹ <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/radon-what-you-need-to-know.html>

² <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/radiation/take-action-radon-health-canada-2016.html>

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³ <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/09/working-paper-347-Howe-Shreedhar.pdf>

⁴ Hevey, David. 2017. "Radon Risk and Remediation: A Psychological Perspective." *Frontiers in Public Health* 5. doi: 10.3389/fpubh.2017.00063.

⁵ Gaskin, Janet, Doug Coyle, Jeff Whyte, Nicholas Birkett, and Daniel Krewski. 2019. "A cost effectiveness analysis of interventions to reduce residential radon exposure in Canada." *Journal of environmental management* 247:449-461. doi: 10.1016/j.jenvman.2019.06.032

⁶ <https://evictradon.org/>

⁷ Fintan, K. T. Stanley, L. Irvine Jesse, R. Jacques Weston, R. Salgia Shilpa, G. Innes Daniel, D. Winquist Brandy, Torr David, R. Brenner Darren, and A. Goodarzi Aaron. 2019. "Radon exposure is rising steadily within the modern North American residential environment, and is increasingly uniform across seasons." *Scientific reports* 9 (1):1-17. doi: 10.1038/s41598-019-54891-8.