



Health  
Canada

Santé  
Canada

Canada

# RADON



## WHAT YOU NEED TO KNOW

Kelley Bush  
Manager, Radon Outreach & Engagement  
November 2024

YOUR HEALTH AND SAFETY... OUR PRIORITY.



# WHAT IS RADON?

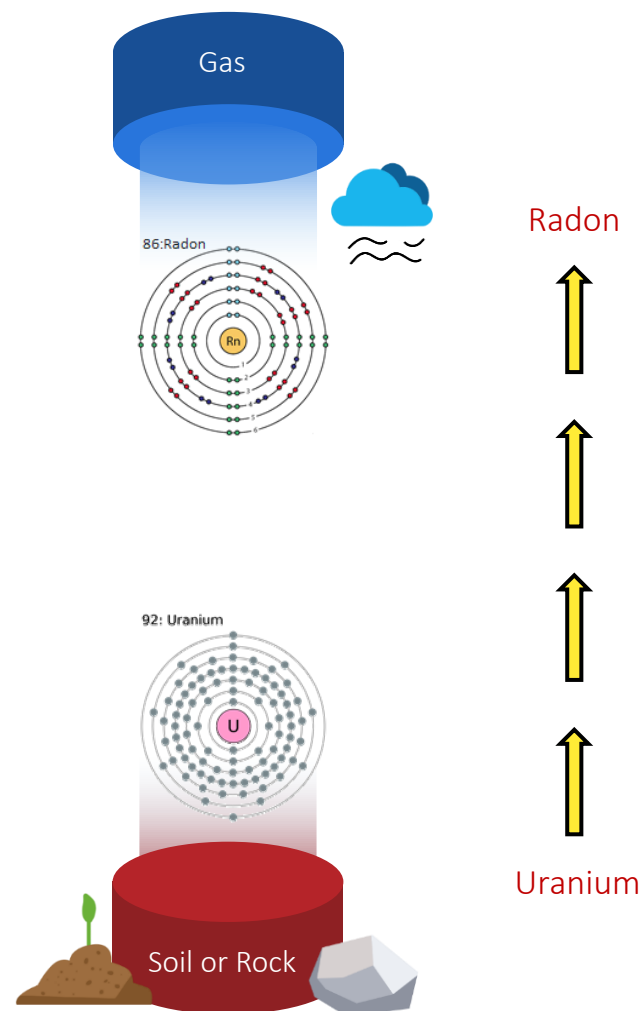
Radon is a radioactive gas that is produced naturally by the breakdown of uranium in the ground

Radon is:

Colourless

Odourless

Tasteless



# NATURAL RADIATION IS EVERYWHERE

Radon represents almost  
**50% of a person's lifetime  
radiation exposure**



# RADON IN CANADA

## 2024 Cross-Canada Radon Report - <https://crosscanadaradon.ca/>



**1 in 5 homes  
in Canada  
have high  
radon**

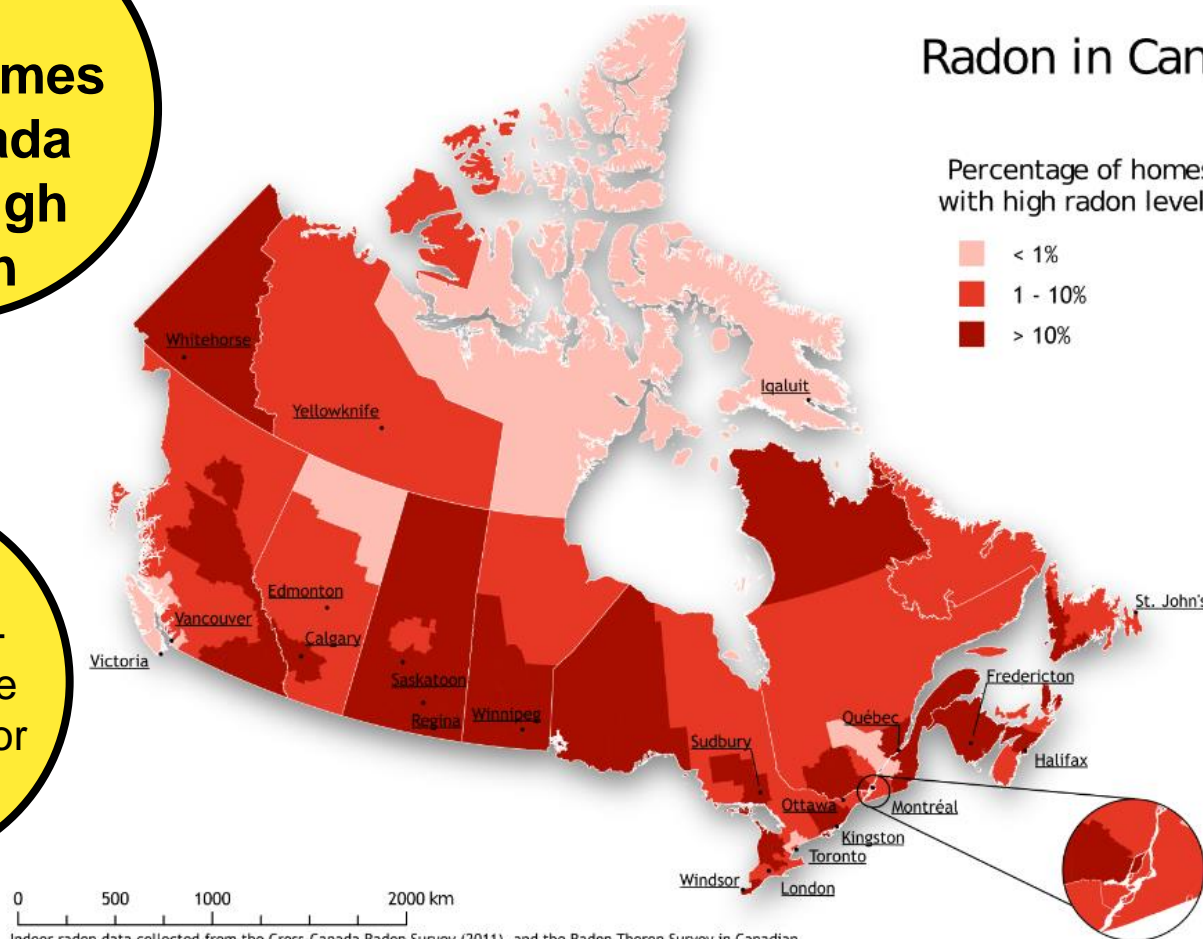
Two houses  
built side-by-  
side can have  
different indoor  
radon levels

### Radon in Canada

Percentage of homes  
with high radon levels\*



There are no  
areas of the  
country that are  
'radon free'



Indoor radon data collected from the Cross-Canada Radon Survey (2011), and the Radon Thoron Survey in Canadian Metropolitan Areas (2013). Collected information is grouped by Health Region. Boundary files sourced from Statistics Canada, 2018. Map produced by Radiation Protection Bureau, Health Canada, 2019.

\*A high radon level is defined as a radon level that is greater than the Health Canada guideline for indoor radon, 200 Bq/m<sup>3</sup>.

# WHERE CAN RADON BE FOUND?

---

Radon is in ALL buildings



## Residential Homes

The biggest risk for radon exposure is at home where we spend most of our time.



Workplace/  
Offices







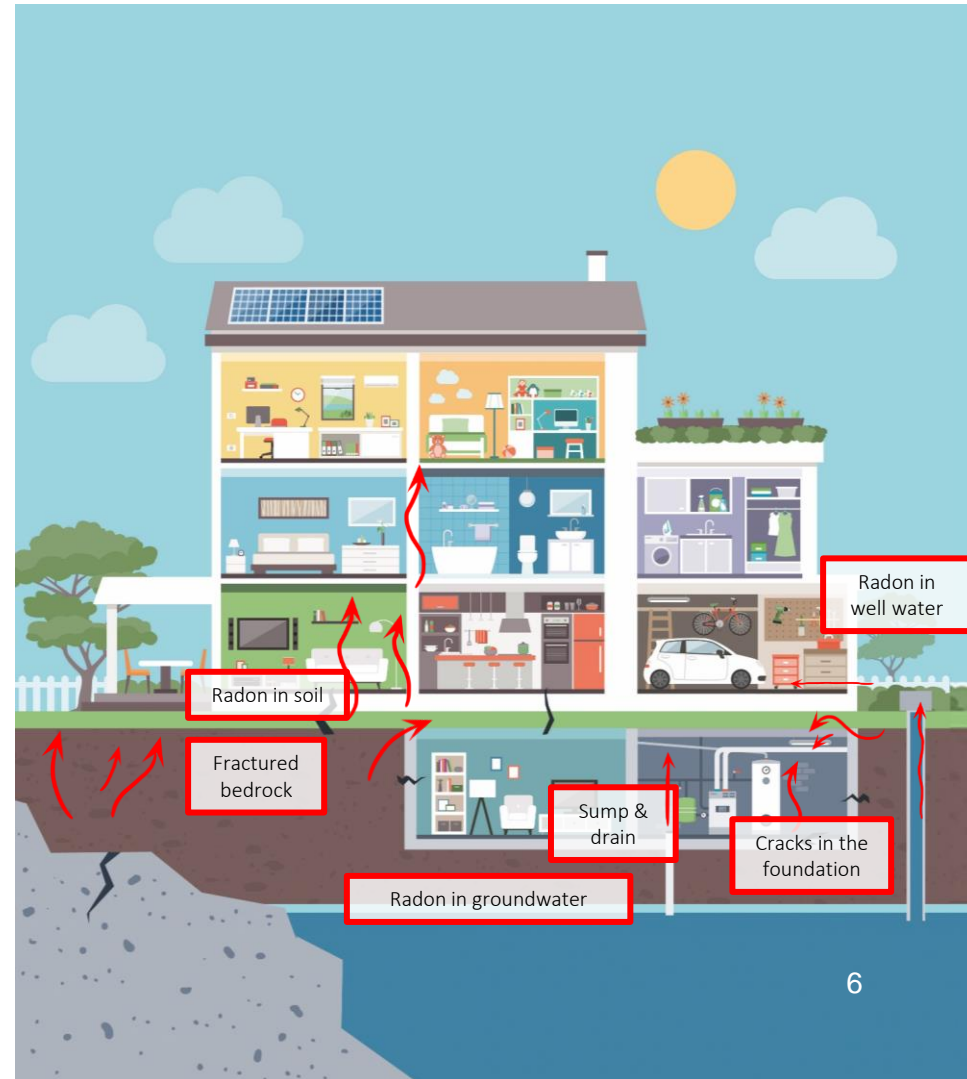
Schools/  
Daycares



Other buildings

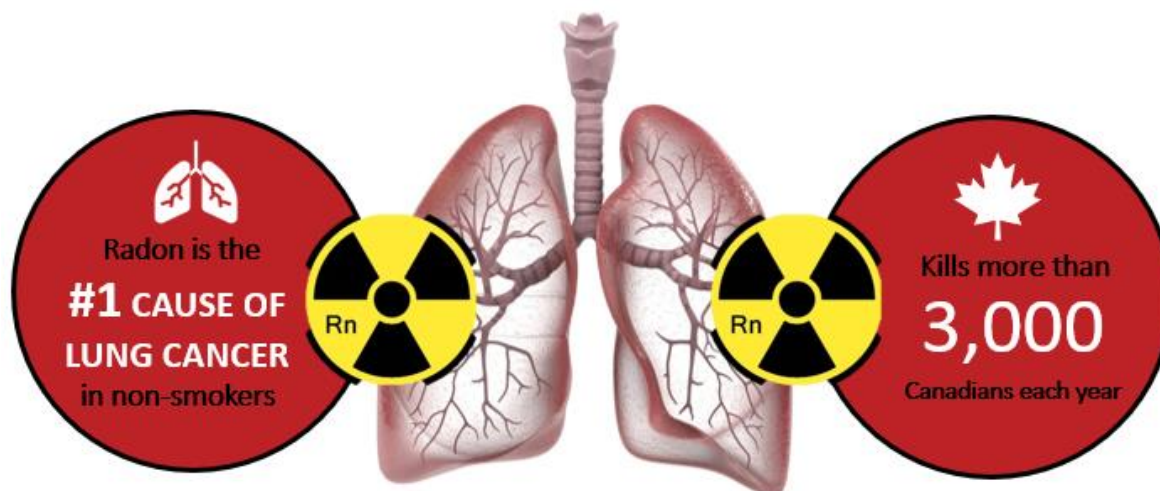
# HOW RADON ENTERS A HOUSE

-  Any cracks, opening or gaps in foundation walls or floors provide route(s) of entry into home
-  The air pressure inside a house is normally lower than the pressure underneath or around the foundation
  - Windows, wood stoves, fireplaces, ventilation units, can all affect the pressure differential
-  This difference in pressure acts like a vacuum drawing radon in through foundation cracks and other openings
-  Once inside the home, radon can build up to dangerous levels





# WHAT ARE THE HEALTH RISKS?



Radon is a known carcinogen (Group 1)

# RADON EXPOSURE RISK COMPARISON

Annual  
Deaths in  
Canada:



# of deaths from radon-induced lung cancer



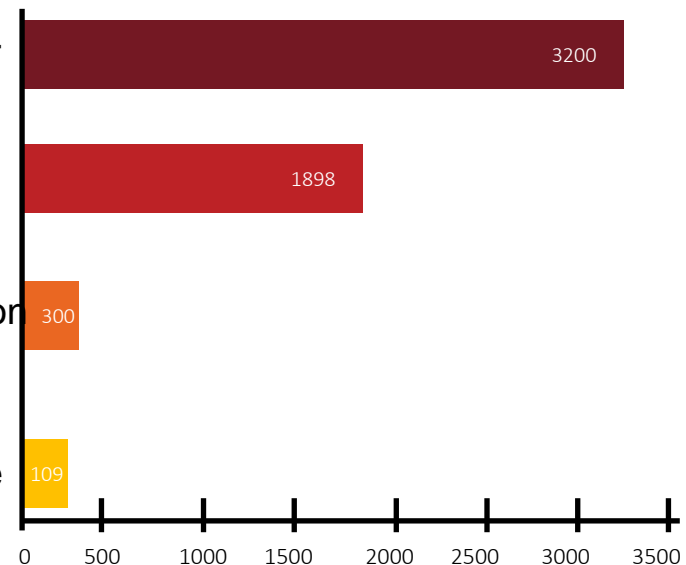
# of deaths from car accidents



# of deaths from carbon monoxide



# of deaths from house fire



## References:

[www.tc.gc.ca/en/services/road/publications/canadian-motor-vehicle-traffic-collision-statistics-2016.html](http://www.tc.gc.ca/en/services/road/publications/canadian-motor-vehicle-traffic-collision-statistics-2016.html)  
[www.injuryresearch.bc.ca/wp-content/uploads/2017/10/Carbon-Monoxide-Oct-2017-Final-UFV.pdf](http://www.injuryresearch.bc.ca/wp-content/uploads/2017/10/Carbon-Monoxide-Oct-2017-Final-UFV.pdf)  
[www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510019501](http://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510019501)



The risk of lung cancer from radon is significant but preventable.



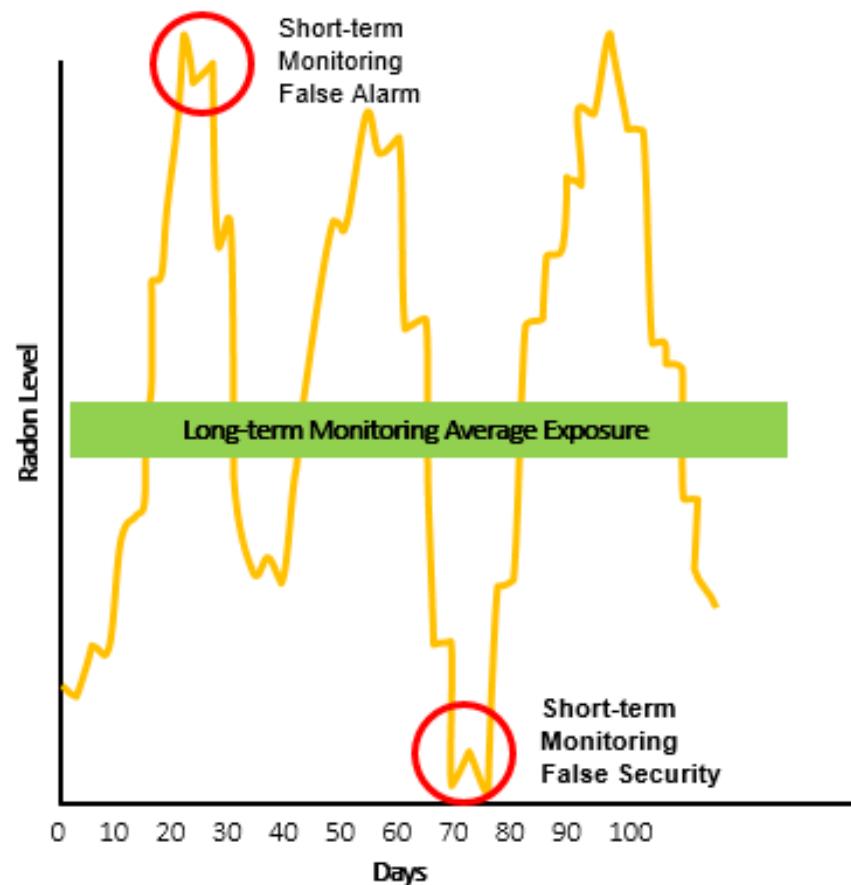
# HOW CAN YOU TEST FOR RADON?

**Option 1:** Purchase a  
Do It Yourself kit



**Option 2:** Hire a certified radon  
measurement professional

OR

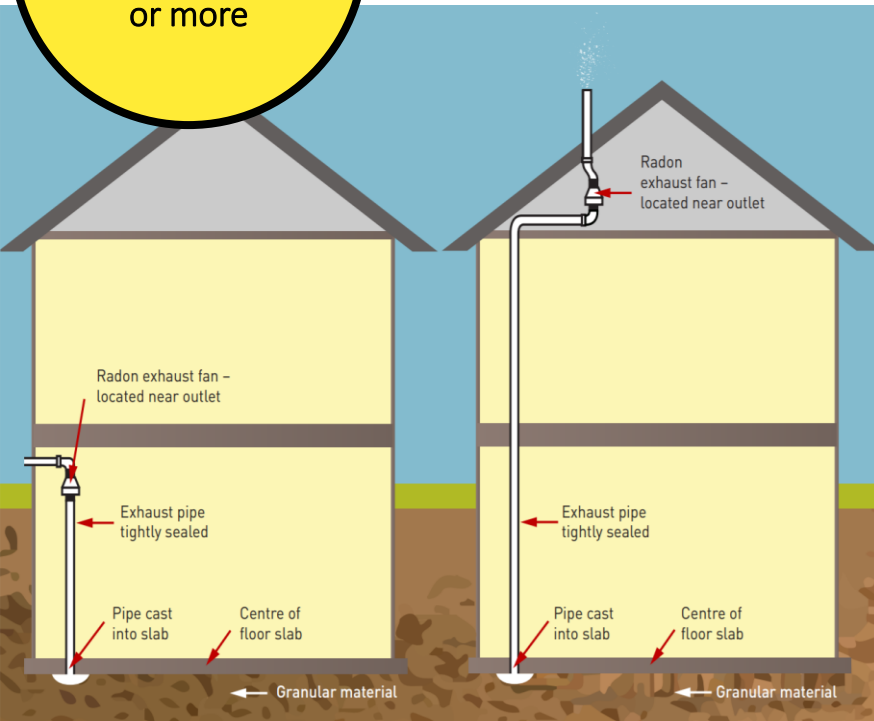


To find a radon test kit or certified measurement  
professional go to: [www.TakeActiononRadon.ca/test](http://www.TakeActiononRadon.ca/test)



# ACTIVE SOIL DEPRESSURISATION (ASD) SYSTEM

High radon levels can often be reduced by 90% or more



Installation typically costs ~\$3000 - \$4000



Also called active sub-slab depressurization



Most effective, reliable and common technique



A pipe is installed through the foundation and directed outside



A fan is attached to the pipe that is continuously run to draw radon from beneath the home and vented outdoors, where it gets diluted



ASD reverses the air pressure difference between the house and soil, reducing the amount of radon that is drawn into the home through the foundation

# HEALTH CANADA'S RADON ACTION GUIDES (RAGS)

---

- Health Canada's National Radon Program developed Radon Action Guides (RAGs)
- The RAGs:
  - Describe why radon action is important
  - Describe the regulatory and policy actions that provinces, territories, and municipalities in Canada can take
  - Include examples of radon policy and regulatory action in Canada and internationally
  - Include draft language that may be adopted



# JUSTIFICATION AND POLICY RATIONALES FOR RADON ACTION

## Provinces and Territories

- Largely have jurisdiction over buildings, public health, and air quality

## Municipalities and Regional Districts

- Powers to protect health and the environment
- Can jumpstart action on radon before, or in parallel with higher levels of government

Health  
Equity

Avoiding  
Personal  
Risk

Cost  
Effective

Consumer  
Protection

Public Health  
Across the  
Whole of  
Society and  
Built  
Environment

Environment  
and  
Sustainability

Climate  
Action  
and  
Health

Public  
Health  
Interventions  
Save Lives

Avoiding  
Legal  
Liabilities

# RAG FOR MUNICIPALITIES

**Municipalities can begin to put in place many of the core features of a Radon Action Plan, including:**

1. Delivering **annual public education and awareness campaigns** during November, Radon Action Month in Canada.
2. Conducting **community testing** to gain better understanding of local radon levels.
3. Establishing specific **bylaws and operating policies** covering Building Code enforcement, rental accommodation, municipal owned buildings, social housing and publicly accessible places.
4. Inclusion of radon in **Energy Efficiency / Green building programs** –
5. Providing **subsidies and incentives** is an important way of ensuring equity of access to radon reduction action. Studies show that lower income and marginalized populations are much less like to test and reduce radon in their homes.
6. Consider radon in **sustainability planning, housing policies, healthy built environments, healthy community strategies**

# THANK YOU

---

[radon@hc-sc.gc.ca](mailto:radon@hc-sc.gc.ca)

1-833-723-6600

[Canada.ca/radon](http://Canada.ca/radon)

[Canada.ca/le-radon](http://Canada.ca/le-radon)

[www.takeactiononradon.ca](http://www.takeactiononradon.ca)



Health  
Canada

Santé  
Canada





# ADDITIONAL RESOURCES

---

GOVERNMENT OF CANADA / HEALTH  
CANADA:

[www.Canada.ca/radon](http://www.Canada.ca/radon)

TAKE ACTION ON RADON:

[www.takeactiononradon.ca](http://www.takeactiononradon.ca)

CANADIAN – NATIONAL RADON  
PROFICIENCY PROGRAM :

[www.cnrpp.ca](http://www.cnrpp.ca)