



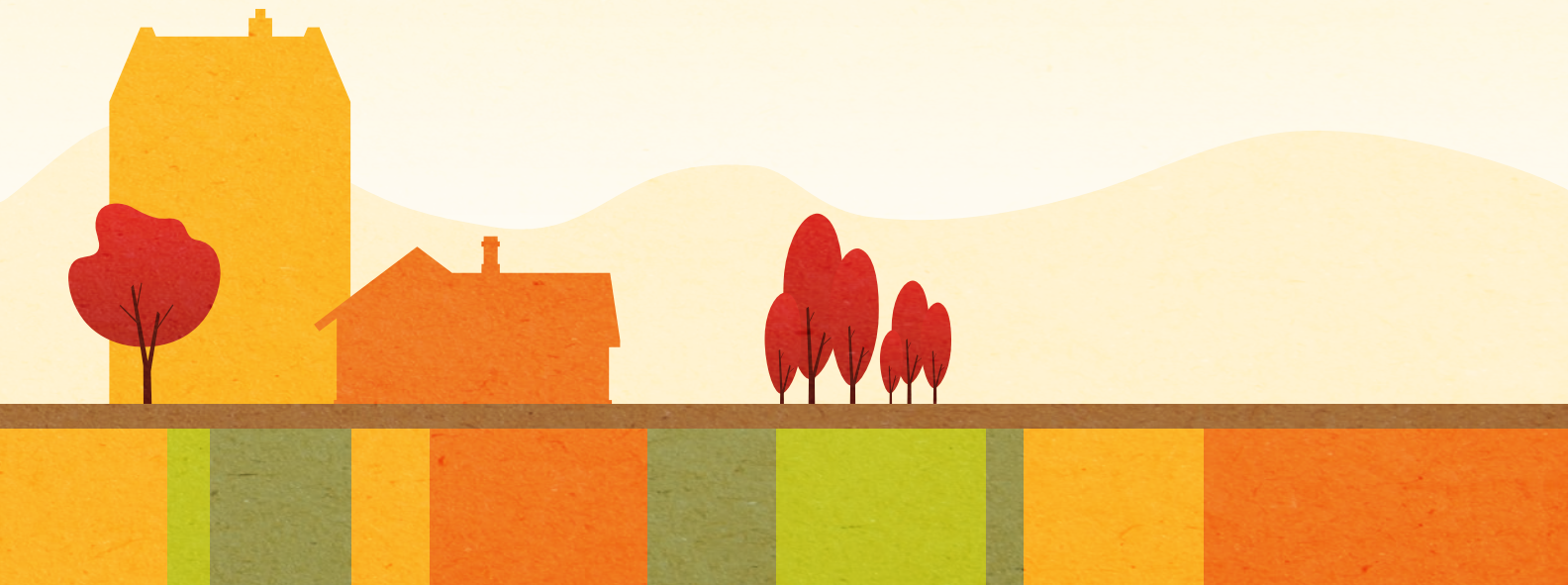
Health  
Canada

Santé  
Canada

Canada

# RADON GAS

IT'S IN YOUR HOME





## WHAT IS RADON?

Radon is a radioactive gas that occurs naturally when the uranium in soil and rock breaks down. It is invisible, odourless and tasteless. When radon is released from the ground into the outdoor air, it is diluted and is not a concern. However, in enclosed spaces like homes, it can accumulate to high levels. High radon levels can be a risk to the health of you and your family.

## WHAT ARE THE HEALTH EFFECTS OF RADON?

When radon gas is inhaled into the lungs it decays into radioactive particles that release small bursts of energy. This energy is absorbed by nearby lung tissue, damaging the lung cells. When cells are damaged, they have the potential to result in cancer when they reproduce.

**Radon exposure is the #1 cause of lung cancer in non-smokers.** Exposure to high levels of radon in indoor air results in an increased risk of developing lung cancer. The risk of cancer depends on the level of radon and how long a person is exposed to those levels.

Exposure to radon and tobacco use together can significantly increase your risk of lung cancer. For example, if you are a lifelong smoker, your risk of getting lung cancer is 1 in 10. If you add long-term exposure to a high level of radon, your risk becomes 1 in 3. As a non-smoker, your lifetime lung cancer risk at the same high radon level is 1 in 20.



## HOW CAN RADON GET INTO MY HOME?

Radon gas moves through the ground and escapes outside or into buildings.

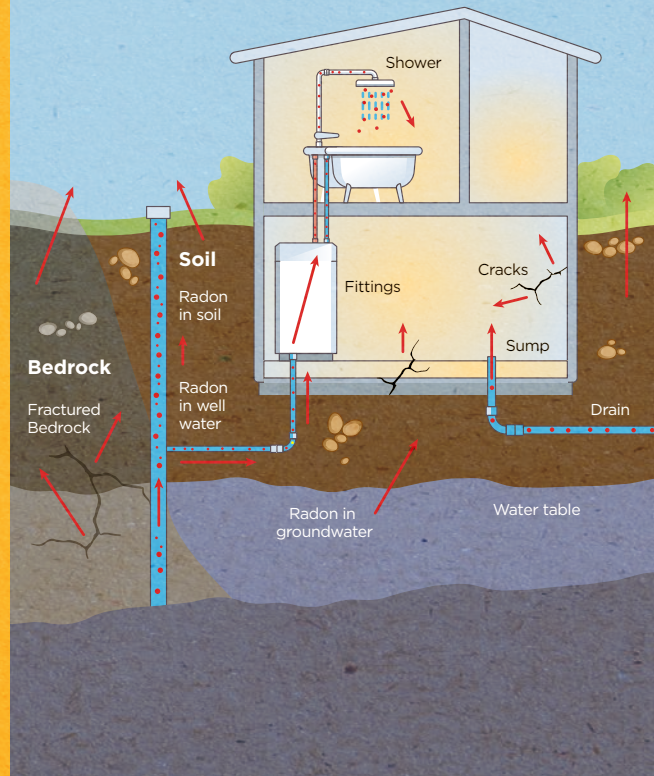
Radon can enter a home any place it finds an opening where the house is in contact with the ground: cracks in foundation walls and in floor slabs, construction joints, gaps around service pipes, support posts, window casements, floor drains, sumps or cavities inside walls.

## WHAT ARE THE RADON LEVELS IN CANADA?

**All homes in Canada have radon gas in them.** Concentrations differ greatly across the country, but are usually higher in areas where there is a higher amount of uranium in underlying rock and soil.

Radon levels will vary from one house to another, even if they are similar designs and next door to each other. **No matter the age, type of construction or where your home is located, the only way to be sure of the radon level in your home is to test.**

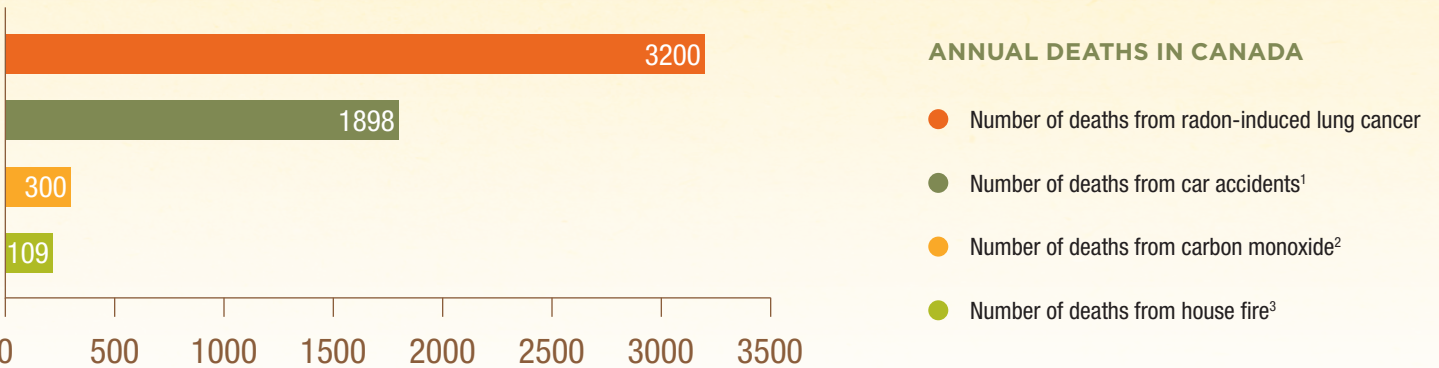
## HOW CAN RADON GET INTO MY HOME?



# WHAT IS THE CURRENT CANADIAN GUIDELINE FOR RADON IN INDOOR AIR?

The Canadian guideline for radon in indoor air for dwellings is 200 Becquerels per cubic metre (200 Bq/m<sup>3</sup>). A Becquerel is a unit that measures the emission of radiation per second. The radon level in a dwelling should not be above the guideline. While the health risk from radon exposure below the Canadian guideline is small there is no level that is risk free. It is the choice of each homeowner to decide what level of radon exposure they are willing to accept.

The chart below compares the risk of dying of radon-induced lung cancer to other better known risks such as car accidents, carbon monoxide and house fires. The risk of lung cancer from radon gas exposure is significant but preventable. The only way to know your radon level is to test and if high levels are found take action to reduce.



## REFERENCES:

- <sup>1.</sup> [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)
- <sup>2.</sup> [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)
- <sup>3.</sup> [www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510019501](http://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510019501)

## HOW DO I TEST MY HOME FOR RADON?

There are two options for testing a house for radon: purchase a do-it-yourself radon test kit or hire a radon measurement professional. If you choose to purchase a radon test kit, you must closely follow the instructions to properly complete the test.

If you choose to hire a service provider to perform the radon test in your house, it is recommended that you ensure they are certified and will conduct a long term test for a minimum of 3 months.

## WHERE CAN I GET A RADON TEST DEVICE?

Radon test kits may be purchased over the phone, on the internet or from home improvement retailers. The radon test kits include instructions on how to set up the test and to send it back to a lab for analysis once the testing period is over. The cost of testing ranges from \$30 to \$60. For information on radon testing go to:

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

## WHERE IN MY HOME SHOULD I PERFORM THE TEST?

To provide a realistic estimate of the radon exposure to your family, all measurements should be made in the lowest lived-in level of the home. That means the lowest level that is used or occupied for more than four hours per day. For some, this may be a basement with a rec room, for others it will be the ground floor. If you only use your basement once a week to do laundry, for example, there is no need to test on that level – your exposure time will not be long enough to create health effects.

## WILL HIGH LEVELS OF RADON AFFECT THE VALUE OF MY HOUSE?

Remember all homes have radon gas in them. Where a high radon level is detected, it can be successfully lowered at a cost which is usually small when compared to the value of the house. When a high radon level is found, fixing the problem can help protect the value of your home.





## HOW CAN I REDUCE THE AMOUNT OF RADON IN MY HOME?

You should fix your home if your radon test result is above the guideline of 200 Bq/m<sup>3</sup>. Techniques to lower radon levels are effective and can save lives. Health Canada recommends that you hire a mitigation professional certified under the Canadian National Radon Proficiency Program (C-NRPP) to help you find the best way to reduce the radon level in your home.

The most common radon reduction method is called sub-soil depressurization. This system works by sucking air (and radon gas) from beneath the foundation of a home and exhausting it outside. Installation of this system generally consists of a pipe installed through the foundation floor and connected to an outside wall or up through to the roof line. A small fan is attached to the pipe which draws the radon from below the house to the outside before it can enter your home.

To find a certified mitigator, visit **[www.c-nrpp.ca](http://www.c-nrpp.ca)** or call 1-855-722-6777

## HOW MUCH WILL IT COST TO REDUCE THE LEVEL OF RADON IN MY HOME?

The cost for radon reduction depends on the size and design of a home and the work that is needed. These costs typically range from \$2000 to \$4000.

## WHERE CAN I LEARN MORE?

Visit **[canada.ca/radon](http://canada.ca/radon)** or call **1-833-723-6600**,  
**TTY - 1-800-465-7735** for more information on radon.