GET INFORMED

What Is Radon?

Radon is a naturally produced gas that results from the decay of uranium in the Earth's crust. It is found all over the globe, so we are exposed to it on a daily basis. Radon is odourless, colourless and tasteless. **It is undetectable by the human senses.**

Radon Health Effects

Radon is harmless outdoors because it is quickly diluted into the surrounding air. However, once it enters houses, it can accumulate and reach concentrations that pose a health risk. Radon enters the lungs along with the air we breathe. It then emits radioactive radiation that can ultimately cause lung cancer. The risk of developing radon-related lung cancer depends on radon concentrations as well as the number of years of exposure.

RADON EXPOSURE FOR A SMOKER GREATLY INCREASES THE RISK OF DEVELOPING LUNG CANCER

Average radon concentration Bq/m3	Long-term risk of developing lung cancer*	
	Smokers	Non-smokers
800	30%	5%
200	17%	2%
Outside air	12%	1%

IT IS ESTIMATED THAT 16% OF LUNG CANCER DEATHS IN CANADA ARE LINKED TO RADON EXPOSURE*

RADON IS 2nd LEADING CAUSE OF LUNG CANCER AFTER SMOKING

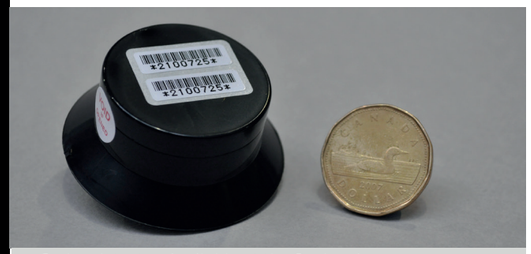
1st CAUSE OF CANCER IN NON-SMOKERS

Is There Radon in Your House?

Whether you have a new house or an old one, radon can enter it in different ways:

- Cracks in foundation walls and floor slabs;
- Crawl spaces;
- Construction joints;
- Openings around service pipes and jack posts;
- Floor drains and sump pits;
- Areaways and wall cavities.

MEASURE



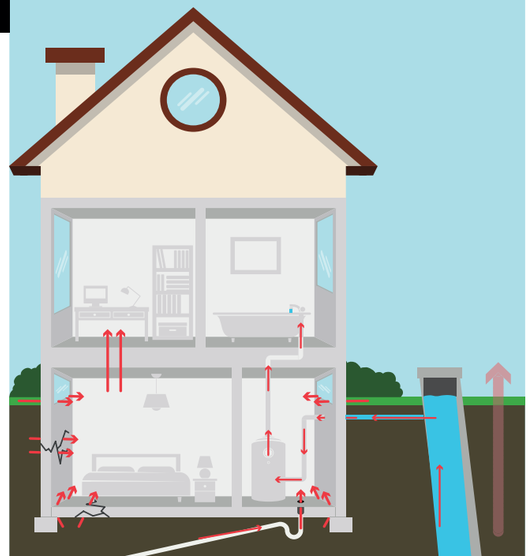
Radon detector. Available at the Quebec Lung.

Measure the Radon in Your House

The only way to determine if you have a radon problem at home is to measure its concentration in the air.

It is possible to carry out the radon concentration test yourself. You can find simple, safe and relatively inexpensive measuring devices on the market.

HOW RADON ENTERS YOUR HOME



Choose Your Detector

Radon concentrations can fluctuate considerably in a single day, and even more so from one season to the next. They are typically higher during the heating period due to the limited ventilation in the house. Therefore, Health Canada recommends the use of a detector that takes measurements over a period of at least three months, between October and April. The maximum duration of radon measurement is 12 months.

Detector Installation

Radon tends to accumulate in the lower rooms and floors of the house. The radon measuring device should be placed in a room occupied by at least one person for more than four hours a day, and at the lowest level in the house. For example: a living room on the ground floor or a bedroom in the basement.

Caution! You should not depend on the measurements of the neighbouring house or on the neighbourhood average since the amount or radon in the ground and the infiltration pathways can vary significantly from one house to another.

CORRECTIVE MEASURES

Which Concentrations Need Corrective Measures?

Although no radon concentration is considered safe, the Canadian guideline for radon concentration indoors is 200 becquerels per cubic meter of air (Bq/m3). For any concentration higher than this, it is recommended to take action to reduce radon exposure to the lowest level that can reasonably be achieved.

Since radon represents a long-term risk, the recommended time to correct it will depend on the measured concentration.

Quebec Lung Association

The Quebec Lung Association (QLA) is the only non-profit organization promoting respiratory health and fighting lung disease through education, prevention, rehabilitation, support for the people affected and their families, as well as research on respiratory diseases.

The QLA also addresses environmental factors that pose risks to respiratory health. Through its work to improve the respiratory health of Quebecers and the living conditions of people suffering from respiratory illnesses, and by encouraging them to take charge of their health, the QLA acts directly on the condition of people of all ages, which has a direct impact on public health.

Contact us by calling
1-888-POUMON9 (1-888-768-6669)
or by emailing us
info@poumonquebec.ca

Visit our website
poumonquebec.ca/en

Association pulmonaire du Québec

* These statistics come from data provided by Health Canada

For More Information

Quebec Lung Association
poumonquebec.ca/en/lung-health/environment/radon/
Tel.: 514-287-7400
Toll-free: 1-888-768-6669

Health Canada
canada.ca/en/health-canada/services/radon
Tel.: 1-800-561-3350 (in Quebec)

Ministère de la Santé
et des Services sociaux du Québec
quebec.ca/en/homes-and-housing/healthy-living-environment/residential-radon

Canadian National Radon
Proficiency Program
c-nrpp.ca

CAA-Quebec
caaquebec.com/en
1-800-686-9243

*This leaflet is also available in French

WHEN TO USE CORRECTIVE MEASURES

Correct in less than a year.

Correct in less than two years.

Although the health risk is low, no level is considered risk-free. It is up to each owner to decide what level of exposure they are willing to accept.

Radon Mitigation

As each home is unique, it should be inspected by a qualified contractor who will recommend one or more attenuation measures.

In most cases, these measures are simple, for example:

- Depressurize the ground under the house (suck up the gas) by installing a small ventilator that will draw the radon outside. This is the most effective and commonly used method;
- Improve the ventilation in your home, especially in the basement;
- Seal all cracks and openings in the foundation floors and walls, and around pipes and drains;
- Make sure there is always water in the floor drain, and that the sumps are covered and ventilated outwards;
- In the absence of a concrete slab, cover the floor of the crawl space with a plastic membrane and hermetically seal the joints and edges.

In most cases, radon mitigation work reduces the radon concentration by up to 90%. Combining several measures will give you better results. The price depends on the work to be done and ranges from 500 $ to 3000 $.

Choosing the Right Contractor

Make sure the contractor you choose is duly certified:

- At the moment, Health Canada only recognizes the certification programs provided by the Canadian National Radon Proficiency Program (C-NRPP). The contractor must undergo continuing professional training. Refer to the list of certified contractors on the C-NRPP website or on the QLA website to ensure the conformity of their certification;
- Furthermore, we encourage you to consult "Radon – A Guide for Canadian Homeowners", a document published by Health Canada.

You have already performed a 3-month radon measurement in your home during winter and your contractor would like you do to it again…

Unnecessary! However, if the radon concentration is high, it is recommended to measure again once the mitigation work is done.

? ASKING THE RIGHT QUESTIONS

	Yes	No
Have you asked for proof of their C-NRPP certification?	○	○
Have you requested at least three quotes?	○	○
Have you asked for references?	○	○
Have you checked these references?	○	○
Have you confirmed that there are no legal actions pending against the contractor? *To find it out, you can contact the OPC (Office de la protection du consommateur).*	○	○
Have you requested a written warranty that the results will be met?	○	○

Are You Buying a New House?

Before purchasing a house, you can demand a radon measurement test of at least three months. A test that is shorter than three months is never acceptable as a basis for deciding whether or not to take corrective measures.

It is possible to file an offer to set aside a sum of money until you receive the results. If the measured radon concentration exceeds 200 Bq/m3, you can then use this money to carry out the mitigation work.

Home Construction

When building a house, the radon levels cannot be predicted. It is cheaper and simpler to adopt preventive measures during the construction stage than it is to act later.

In the plans and estimate of your new house, make sure to include measures to prevent underground gas infiltration in accordance with the National Building Code of Canada or the Canadian General Standards Board.

When building the house, it is advised to install the lines needed for the subsequent installation of a radon extraction system, in all constructions, regardless of their location. Basic protective measures should also be in place, such as:

- The installation of an impervious polyethylene membrane under the concrete;
- The installation of a flexible sealant joint between the floor slab and the foundation walls;
- The installation of an adequate ventilation system.

Other corrective and preventive measures are described by Health Canada and the Canadian General Standards Board.

Please note that no company is authorized to use the Quebec Lung Association logo to sell its products. The Association does not recommend or endorse any particular company.

RADON
Are you at risk?

poumonquebec.ca/en

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