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Radon

Updated: September 2012

Original: March 2002

# IT'S YOUR HEALTH



## Radon

### THE ISSUE

Recent scientific studies have linked an increased risk of developing lung cancer to exposure to radon at levels found inside some Canadian homes. The only way to know if you have a radon problem is to test your home.



### RADON GAS

Radon is a gas produced naturally by the breakdown of uranium in soils and rocks that occurs naturally in the environment. You can't see, smell or taste radon. The Canadian guideline for radon in indoor air was revised in 2007. It recommends that:

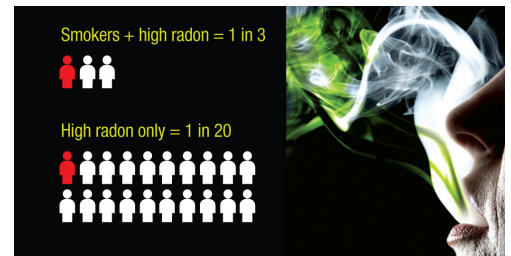
- You should take steps to lower levels of radon in your home if the average annual level in the normal living areas exceeds 200 becquerels per cubic meter.
- The higher the radon level, the sooner you should take action.
- When action is taken, the radon level should be reduced as much as possible using methods that are cost-effective.

- The construction of new dwellings should use techniques that will minimize radon entry and facilitate post-construction radon removal, if needed later.

### THE HEALTH EFFECTS OF RADON

When radon gas escapes from the ground outdoors it gets diluted and does not pose a health risk. However, in some confined spaces, like homes, radon can accumulate to relatively high levels and become a health hazard.

Long-term exposure to high levels of radon in the home may increase the risk of developing lung cancer. For smokers, the combination of smoking and exposure to radon can significantly increase the risk of lung cancer. Radon exposure is linked to roughly 16% of lung cancer deaths in Canada, and is the second leading cause of lung cancer after smoking.



## RADON IN THE HOME

Some amount of radon gas can be found in almost all homes that are in contact with the ground.

Radon can seep into a home through:

- dirt floors
- cracks in foundation walls and floors
- sumps
- gaps around pipes
- basement drains

Radon moves easily through concrete-block walls because they are so porous. Also, radon trapped in water from wells can be released into the air when the water is used.

Health Canada conducted a [cross-Canada survey](#) of 14,000 homes in 2009 and 2010. Results showed that:

- About 7% of homes in Canada have radon levels above the Canadian guideline.
- Radon levels vary quite significantly across the country.
- It is impossible to predict whether any one house will have a high level of radon.

Factors that affect radon levels in the home include:

- The amount of uranium in the ground around the home.
- The entry points available into your home (cracks in the foundation, crawl spaces, etc.).
- The way your home is ventilated.

## MEASURING RADON LEVELS IN THE HOME

[Testing a home for radon](#) is easy and inexpensive. There are two options:

- Buy a do-it-yourself radon test kit.
- Hire a professional radon measurement service provider.



If you choose to buy a radon test kit, you must closely follow the instructions on how to set up the test. Radon test kits can be purchased over the phone, on the internet, or from home improvement stores. The kits include instructions on how to set up the radon test and how to send it back to a lab for analysis when the testing period is over. The cost of testing ranges from \$25 to \$75. If you hire a service provider, you should make sure they are certified and will conduct a long-term test.

## REDUCE YOUR RISK

The only way to know if you have a [radon problem](#) is to test your home. If the radon level is high, take action to reduce it. The higher the level, the sooner it needs to be fixed.

Reducing radon in a home is easy and reasonably priced. Steps you can take include:

- Increase the ventilation to allow an exchange of air.
- Seal all cracks and openings in foundation walls and floors, and around pipes and drains.
- Renovate existing basement floors, particularly earth floors.

The standard method for reducing radon in a home is called active soil depressurization. It's usually done by a contractor. A pipe is installed through the foundation floor and is connected to

the outside. A fan attached to the pipe draws radon from under the home, before it gets inside, and releases it outside, where it gets diluted.

Radon professionals can help you determine the best way to reduce the radon level in your home. To find a certified radon professional in Canada go to the [Canadian National Radon Proficiency Program \(C-NRPP\)](#) or call 1-800-269-4174 (toll free).

In 2010, new [National Building Codes](#) were introduced to protect against radon. These new codes require new homes to have a vapour barrier to reduce the entry of radon. They also require a 'rough-in' for a radon reduction system. The rough-in will significantly lower costs if action has to be taken later to reduce radon levels in the home.

## THE GOVERNMENT OF CANADA'S ROLE

The National Radon Program was developed and implemented in 2008 to support the revised [Canadian guideline for radon](#) in indoor air. The program consists of five components:

- establishment of a national radon laboratory
- radon testing projects
- development of a radon database and mapping
- radon research
- education and public awareness

[Health Canada](#) works in partnership with the provinces and territories, as well as other key stakeholders in all aspects of the National Radon Program.



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## FOR MORE INFORMATION

- Health Canada's radon web section at: [www.healthcanada.gc.ca/radon](http://www.healthcanada.gc.ca/radon)
- Health Canada's radon resource centre at: [www.hc-sc.gc.ca/ewh-semt/radiation/radon/resource-ressources-eng.php#a1](http://www.hc-sc.gc.ca/ewh-semt/radiation/radon/resource-ressources-eng.php#a1)
- Radon—Frequently asked questions at: [www.hc-sc.gc.ca/ewh-semt/radiation/radon/faq\\_fq-eng.php](http://www.hc-sc.gc.ca/ewh-semt/radiation/radon/faq_fq-eng.php)
- What you can do about hazards in your environment (Healthy Canadians) at: [www.healthycanadians.gc.ca/init/hazards-risques-eng.php](http://www.healthycanadians.gc.ca/init/hazards-risques-eng.php)
- Canadian Lung Association Radon page at: [www.lung.ca/protect-protegez/pollution-pollution/indoor-interieur/radon-radon\\_e.php](http://www.lung.ca/protect-protegez/pollution-pollution/indoor-interieur/radon-radon_e.php)
- Canadian Mortgage and Housing Corporation—Radon, A Guide for Canadian Homeowners at: [www.cmhc-schl.gc.ca/odpub/pdf/61945.pdf](http://www.cmhc-schl.gc.ca/odpub/pdf/61945.pdf)
- Find a radon professional in your area through the Canadian National Radon Proficiency Program (C-NRPP) at: [www.neha-nrpp.org/](http://www.neha-nrpp.org/)

## FOR INDUSTRY AND PROFESSIONALS

- Reducing Radon Levels in Existing Homes: A Canadian Guide for Professional Contractors at: [www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radon\\_contractors-entrepreneurs/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radon_contractors-entrepreneurs/index-eng.php)

## RELATED RESOURCES

- For safety information about food, health and consumer products, visit the Healthy Canadians website at: [www.healthycanadians.gc.ca/](http://www.healthycanadians.gc.ca/)
- For additional articles on health and safety issues go to the *It's Your Health* web section at: [www.healthcanada.gc.ca/iyh](http://www.healthcanada.gc.ca/iyh)

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245\*

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