

What is radon?

Radon is a cancer-causing, radioactive gas that you cannot see, smell or taste. Radon gas comes from the natural decay of uranium in rocks, soil and groundwater. Radon can move freely through the soil enabling it to escape to the atmosphere or seep into buildings. When radon escapes from the bedrock into the outdoor air, it is diluted to such low concentrations that it poses a negligible threat to health and is harmless. However, if a building is built over bedrock or soil that contains uranium, radon gas can be released into the building through cracks in foundation walls and floors, or gaps around pipes and cables. When radon gas seeps into a home's living or working areas, it may be confined to enclosed or poorly ventilated spaces, where it can accumulate to high levels and become a deadly threat. Radon levels are generally highest in basements and crawl spaces because these areas are nearest to the source and are usually poorly ventilated. If you have well water, radon in the water can enter into the living areas by escaping into the air when faucets and showers are in use (e.g. showering, washing clothes or cooking). The health risk is not one of radon ingestion but of radon inhalation.

On average, 10% of lung cancers worldwide are attributable to radon exposures, smoking being the first. The National Cancer Institute of Canada estimated that 10% of lung cancer deaths in Canada were due to radon exposure in 2006, approximately 1930 deaths. Research indicates that smoking promotes earlier development of lung cancers that may have been caused by radon. The level of the risk depends on the amount of radon present, the length of time you are exposed and whether or not you smoke. Radon is measured in becquerels per cubic metre (Bq/m³), or picocuries per liter (pCi/L). 1 pCi/L = 37 Bq/m³. At a radon level of 200 becquerels per cubic metre (Bq/m³) a smoker with 70 years of exposure, has a 17% risk of developing lung cancer compared to 2% for a non-smoker. In comparison, at a radon level of 800 Bq/m³ the risk for a smoker increases to 30% and 5 % for a non-smoker. It is never too late to reduce your risk of lung cancer. Don't wait to test and fix a radon problem. If you are a smoker, stop smoking.

What to do about radon

Health Canada's studies show that high radon levels are not widespread in Canadian homes. However, radon levels are highly variable and it is difficult to predict the level in any one home. Any home, regardless of age or design, could have a potential radon problem. Therefore, Health Canada encourages all Canadians to test their homes.

In 2007, Health Canada announced a revised guideline for radon levels in indoor air. Based on new research, federal, provincial and territorial governments have worked together to develop a new guideline to help protect Canadians from the health risks associated with radon. The new guideline is 200 Bq/m³. Health Canada recommends that you take action to reduce the level of radon in your home if your annual average value is above the guideline of 200 Bq/m³. If you have well water, it is recommended that the water also be tested for radon. Health Canada feels that simple solutions to radon problems exist and that airborne radon levels can be readily lowered by several methods. The cost of reducing radon in your home depends on how your home was built and the extent of the radon problem. Most homes can be fixed for about the same cost as other common home repairs. The average home costs about \$1,200 for a contractor to fix, although this can range from about \$800 to about \$2,500. The cost is much less if a passive system was installed during construction.

Lowering radon levels requires technical knowledge and special skill. Canadian consumers are encouraged to use a contractor that is certified and/or licensed to fix radon problems. Health Canada is developing certification requirements for radon mitigation companies. In the interim, Health Canada recognizes the certification programs offered by National Environmental Health Association (NEHA) or the National Radon Safety Board (NRSB). Individuals holding the Residential Mitigation Provider certification from these bodies will have demonstrated knowledge of radon mitigation techniques. Information on these certification programs may be found at: <http://www.radongas.org> or <http://www.nrsb.org>

Remember to test your home again if you have undertaken repairs (mitigation) to reduce the radon level. It is important that the radon levels are lower after repairs have been completed.

Health Canada and the Canada Mortgage and Housing Corporation have produced a booklet called "Radon - A Guide for Canadian Homeowners". For a copy, visit the Canada Mortgage and Housing website at <http://www.cmhc-schl.gc.ca> and search for Radon, or call 1-800-668-2642.

For more information on radon and how to reduce radon risks, visit Health Canada's website at <http://www.healthcanada.gc.ca/radon> You may also contact Health Canada at:
Radiation Protection Bureau
775 Brookfield Road,
Ottawa, Ontario Canada K1A 1C1
613-954-6647
radon@hc-sc.gc.ca

Federal, Provincial and Territorial Radon Contacts

For information about radon in your region, contact your federal, provincial or territorial government listed below:

Federal:

Radiation Protection Bureau Health Canada 613-954-6647
Canada Mortgage and Housing Corporation 800-668-2642

Provincial and Territorial:

Prince Edward Island	902-368-4792
Newfoundland and Labrador	709-729-0218
New Brunswick	506-453-2323
Nova Scotia	902-679-6326
Quebec	418-266-6765
Ontario	416-327-7426
Manitoba	204-787-2213
Saskatchewan	306-787-4538
Alberta	780-415-0612
British Columbia	604-660-6633
Yukon	867-667-5759
Northwest Territories-Nunavut	867-669-4407 or 800-661-0792

Further Sources of Information:

The Radiation Safety Institute of Canada is a non-governmental agency providing radiation safety programs and offering radon testing services:
416-650-9090 or 800-263-5803.