



LUNG CANCER CANADA

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Radon Gas – The Silent Killer

By Janet and Alan Whitehead, President & CEO of Radon Environment Management Corporation

Radon gas is one of the most deadly and overlooked health risks today. Few people know that radon is the leading environmental cause of lung cancer. It has the highest mortality rate of all the environmental exposures.

Radon is a naturally occurring, radioactive gas created from the decay of uranium in minerals present in rock, soil and water. Radon is present in every indoor environment – i.e. homes, schools and workplaces; the question is to what degree. You cannot see, smell or taste radon, therefore the only way to know the radiation level you are being exposed to is to conduct a simple radon test.

Radon is extremely radioactive. It emits alpha radiation as it decays. Once inside the lungs, radon decay products can genetically damage delicate tissues – this can lead to the development of lung cancer.

Unfortunately, most Canadians are unaware of radon gas and the significant health risk it poses. The Environmental Protection Agency (EPA) and US Surgeon General estimate that approximately 21,000 lung cancer deaths are attributable to radon exposure every year in the USA. Health Canada recently increased its estimate of radon induced lung cancer deaths to approximately 16% of all lung cancers or approximately 3,200 Canadians that die annually from radon exposure. The World Health Organization (WHO) similarly estimates around 14% plus of all lung cancer deaths globally are radon induced. This represents approximately 189,000 of the 1.4 million people that die annually from this disease.

In 2008 Janet Whitehead was diagnosed with lung cancer at the age of 54 and immediately underwent successful surgery to remove her upper left lobe, one third of her lower left lobe and tumors in her right lobes. Janet had never smoked and subsequently learned that her lung cancer was apparently radon induced.

Janet was exposed to exceptionally high levels of radon gas, in a former home in Ottawa, where the family lived for 5 years. Following Janet's diagnosis and surgery, the family reached out to the present occupant of the house, to advise them of her situation and their suspicions and encourage them to test the home for radon. The results were alarming with indoor radon concentrations in the living area and bedrooms measuring 3,250 Bq/M3, which is equal to 20 times the Health Canada guideline and 30 times the WHO guideline.

Janet says “had we known about radon when we were living in Ottawa in 1992-97 and that the area is in a geologically high radon potential zone, we would have tested our home for radon and fixed the problem at that time. To put our situation into perspective, exposure to 400 Bq/M3 of radon for 8 hours is considered by radiation scientists to be equivalent to smoking a pack of cigarettes every day. I now worry about my husband and 3 children who were also exposed and I would encourage everyone to test their homes, schools and workplaces for radon. This is one deadly form of cancer which is totally preventable.”

The story has a positive outcome – the current occupant of their former home in Ottawa, on receiving their advice, immediately had the house tested and then mitigated, reducing the radon levels to less than 100 Bq/M3 and giving the occupants peace of mind. Janet is determined to be a lung cancer survivor and together with her husband Alan, is an advocate and passionate about raising radon awareness and education in Canada to save lives.

Detecting and Testing for Radon

Detecting radon levels

Since you cannot taste, smell or see radon gas, radon detection technology has been developed to test and monitor radon levels in homes and workplaces. There are two basic ways to test for radon: short term and long term. Short term testing takes two to seven days. Long-term testing takes one month to a year.

What's the difference between short-term and long-term testing?

Radon gas levels in a home are not the same every day. Weather changes, how often windows and doors are opened and closed, the type of air conditioning/heating systems, and lifestyle all contribute to the level of radon gas in your home each day.

A short-term test may show unusually high or low levels due to the weather and activity in your home. A long-term test will average your exposure to radon levels over a period of time, and experts agree that this gives a more conclusive test result.

How do I test for radon?

There are a number of ways to measure radon. One method involves alpha track technology. The detector is placed in your home from one month to one year, sent for analysis and a report is returned to you.

You can also continuously test for radon using an electronic radon gas detector. They have the advantage of a numeric display and audible alarm for high radon levels.

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