

## What is radon gas, and should I be concerned?

Radon is a colorless, odorless, and tasteless gas found in soil, water, and air around the world. It is a naturally occurring gas formed from the natural radioactive decay of uranium deposits. In this case, "natural", does not mean healthy. **Radon is classified in the highest level of human carcinogens along with mustard gas, tobacco smoke, asbestos, and benzene.** Radon concentrations in the home, in particular, are most hazardous to home owners. Prolonged exposure to high levels of radon concentrations can cause cancer, primarily lung cancer.

Health risks from radon gas exposure were revealed from numerous premature deaths of uranium miners as early as the 1400's (even though they didn't know the cause at the time.) However, it wasn't until around 1984 that the health risks of radon in homes were discovered. The Environmental Protection Agency estimates that between 15,000-22,000 people per year die from lung cancer caused by radon gas.

Radon is measured in **Picocuries** per liter of air (pCi/L). The average natural concentration in outdoor air is about 1 pCi/L. The average radon concentration of the 1<sup>st</sup> floor level of homes is about 1.3pCi/L. The EPA "action level" or level of concern is when houses have average concentrations of 4pCi/L or more. The radiation exposure to living in a house with radon at 4pCi/L is equivalent to the health risks of smoking 10 cigarettes per day or having two hundred chest X-rays per year.

Radon and its decay products (RDP) seep in through cracks in the concrete slab, dirt floors (such as crawlspaces), floor drains, sump pits, open joints, and tiny cracks or pores in hollow block walls. When you breathe it in, the (RDP) strike and attach to your lung cells and cause physical and/or chemical damage to the DNA. This essentially kills the tiny air sacks in your lungs and can eventually cause cancer. Elevated concentration levels of radon gas increase your chance of being adversely affected. The only way to know the level of concentration in your home is to have it tested by a certified radon testing company.

There are two levels of tests, short-term and long-term. Short term tests last 2-7 days and can be done in a couple of ways. One way is to have charcoal canisters (about the size of a hockey puck) placed in the lowest lived-in level of the home for at least 48 hours and then sent to a lab for analysis.

Another short-term test is an electronic continuous monitor that takes hour-by-hour readings for 48-72 hours. The results can be printed out immediately following the test. You will need to hire a professionally licensed radon testing company to conduct this type of test.

The most accurate testing method is a long-term test that last 90-180 days. They are more accurate because the radon level in your house varies depending on environmental factors such as the prevailing wind, barometric pressure, snow, rain, and induced negative pressure caused by exhaust fans, attic fans, and heating systems. This is a good testing method for current homeowners, but unrealistic for a home involved in a real estate transaction since time is a critical factor in most transactions.

Don't panic if, once tested, you discover high levels of radon. A radon mitigation system can be installed in your home that consistently lowers the levels down to near outdoor air conditions. No level of radon is considered "safe", but lowering it from say, 30pCi/L to 2 is an excellent way to help nearly eliminate a toxic carcinogen that is hazardous to humans.