



Cornell University
Cooperative Extension
of Delaware County

Resource Center
34570 St Hwy 10 Suite 2
PO Box 184
Hamden NY 13782

Telephone: 607-865-6531
Fax: 607-865-6532
e-mail: delaware@cornell.edu
www.cce.cornell.edu/delaware

BASIC RADON FACTS

What is Radon?

Radon is a naturally occurring, invisible, odorless gas that comes from deposits of uranium in soil, rock, and water. It is harmlessly dispersed in outdoor air, but can threaten human health when it accumulates in buildings. Radon is a radioactive decay product of radium, which in turn is a decay product of uranium. Uranium and radium are naturally occurring common elements in soil.

What are the Health Effects of Radon?

Exposure to radon is the second leading cause of lung cancer in the U.S. The U.S. Environmental Protection Agency (EPA) estimates that radon causes 15,000 to 22,000 lung cancer deaths in the country each year. Radon can be inhaled into the lungs, where it undergoes radioactive decay. As it decays, radon releases tiny bursts of energy called alpha particles, which can harm sensitive lung tissue by damaging the DNA. This damaged DNA can lead to lung cancer.

Where is Radon Found?

The primary source of high levels of radon in homes is the surrounding soil. Hot spots include basements, first-floor rooms, and garages. Radon has been found in elevated levels in homes in every state, and EPA estimates that as many as one in 15 homes across the U.S. have elevated radon levels. No area of the country is free from risk.

How Does Radon Get Into My House?

Radon gas enters the same way air and other soil gases enter the home; through cracks in the foundation floor or walls, hollow-block walls, and openings around floor drains, pipes and sump pumps. The process begins when warm air in the home rises. When this happens in your home, it creates a vacuum in the lower areas of the house. Nature hates a vacuum, so something must rush in to fill it. In the case of your home, air seeps in from the soil around and under the house, and some air is sucked in through openings (cracks, doors, windows) on the lower levels.

How is Radon Measured?

Radon is measured in picocuries per liter of air (pCi/L), a measurement of radioactivity. The EPA and the Centers for Disease Control and Prevention recommend that homes with radon levels 4 pCi/L, or greater, be fixed.

How do I Find Out if My House has Elevated Levels of Radon?

Radon test kits that meet EPA guidelines can be obtained from a radon testing company or laboratory. Get a listing from your state radon office or local health department by calling either Cornell University Cooperative Extension of Delaware County 607 865-6531 or Delaware County Public Health Nursing 607 746-3166. FREE RADON TEST KITS are available at Cornell University Cooperative Extension of Delaware County, 34570 St. Hwy 10, Hamden, New York. Testing your home for radon is as simple as opening a package, placing a radon detector in a designated area, and, after the prescribed number of days, sealing the detector back

in the package and mailing it to a lab. Information about testing your home for radon and how to get a test kit is also available by calling 1-800-SOS-RADON.

What Does it Cost to Lower Radon Levels?

The cost of making repairs to reduce radon depends on how your home was built and other factors. Most homes can be fixed for about the same cost as other common home repairs, like painting or having a new hot water heater installed. The average cost for a contractor to lower radon levels in a home is about \$1,200, although this can range from \$500 to approximately \$2,500.

How Can I Fix My House if it has Elevated Levels of Radon?

A variety of methods can be used to reduce radon in homes. Sealing cracks and other openings in the foundation is a basic part of most approaches to radon reduction. EPA does not recommend the use of sealing and caulking alone to reduce radon because, by itself, sealing has not been shown to lower radon levels significantly or consistently. In most cases, EPA strongly recommends installing pipes and fans to reduce radon. Radon reduction contractors may use other methods that may also work in your home, depending on its design and other factors. Look in your local phone book or call your state radon office to locate radon mitigators in your area.

Dispelling Some Common Radon Myths

“I don’t have a basement, so I probably don’t have a radon problem.”

Radon can seep in from soil anywhere around or under a home, regardless of whether your home has a basement, a crawl space, or is built slab-on-grade. The EPA and the Surgeon General recommend radon testing for all types of homes. In multi-level homes testing should be done on a level below the third floor.

“I don’t live in an area designated as a high radon zone, so my home won’t have a problem.”

The EPA and the U.S. Geologic Survey conducted surveys of radon potential across the United States. They broke the country down into three zones according to their potential for high indoor radon levels, with Zone 1 having the highest radon potential. It is true that homes in Zones 1 and 2 have a statistically higher chance of having elevated levels of radon. However, the fact is that elevated levels of radon have been found in homes *in all fifty states*. The radon level in your home depends on the geology under and near your home. The only way to know for sure, and to protect your family from radon, is to test your home.

“Two of my neighbors have tested their homes for radon and they don’t have high levels, so I probably don’t either.”

Radon levels can vary considerably from house to house, even on the same street. It is nearly impossible to predict the exact nature of geologic soil deposits and the extent to which soil gasses will seep into and be retained by a specific house. The only way to know whether radon exists in elevated levels in your home, and to protect your family from radon, is to test.

“There doesn’t seem to be much proof that radon is a serious health problem.”

Never before have we had such overwhelming scientific consensus that exposure to elevated levels of radon causes lung cancer in humans. In February of 1998, the National Academy of Sciences (NAS) presented the findings of their Biological Effects of Ionizing Radiation (BEIR) VI Report: "The Health Effects of Exposure to Indoor Radon." This report by the NAS is the

most definitive accumulation of scientific data on indoor radon. The report confirms that radon is the second leading cause of lung cancer in the U.S. and that it is a serious public health problem. The study fully supports EPA estimates stating that radon causes between 15,000 and 22,000 lung cancer deaths per year.

“I don’t have time to test for radon!”

Testing is as simple as opening a package, placing a radon detector in your home in a designated area, and, after the prescribed number of days (typically two days), sealing the detector back in the package and mailing it to a lab. The whole process only takes a few minutes of your time!

Funding for this Radon Educational Outreach is provided by NYS Department of Health. Partners in this Radon Grant “Breathe Easier – Having Homes Tested for Radon” include Delaware County Public Health Nursing, Cornell Cooperative Extension-Delaware County, Delaware Opportunities, Inc., Delaware Valley Hospital-Community Wellness Center, and Office for the Aging.