



radon: tips for testing your home

Did you know that what you can't see can potentially harm you? Radon is an odorless, colorless, tasteless gas that is produced by naturally decaying uranium and radium. Uranium and radium is naturally found in soil and rock throughout the world. It is typically concentrated in areas with lots of granite, shale, phosphate, and pitchblende. As radon decays, it forms radioactive by-products, which can be inhaled and cause damage to lung tissue. The Environmental Protection Agency (EPA) recommends that all homes in the United States be tested for radon gas.

Exposure to radon gas increases your risk of developing lung cancer. Radon gas and its decay products in the air can be breathed into the lungs where they break down further and emit *alpha particles*. Alpha particles release a small burst of energy, which is absorbed by nearby lung tissue. This results in lung cell damage. There are no immediate symptoms in relation to radon exposure. Your risk of developing lung cancer from radon depends on the concentration of radon in the air you breathe and the length of time you are exposed. The EPA estimates that 21,000 lung cancer deaths each year in the United States are due to radon exposure, which makes it the second leading cause of lung cancer following smoking. Smokers are at higher risk of developing radon-induced lung cancer than non-smokers.

While radon is common outdoors, it is diluted to very low levels and is not a concern. However, radon that enters an enclosed space, such as a home, can sometimes accumulate to high levels. Radon gas is drawn into homes or buildings through cracks in the foundation or slab and through unsealed pipes, sumps, drains, walls and other openings such as crawl spaces.

Elevated radon levels have been identified in every state. The EPA estimates that 1 out of every 15 homes in the United States has indoor radon levels at or above the EPA's recommended action guideline level of four picocuries per liter of air (pCi/L). Testing for radon is simple and relatively inexpensive. Health House®, the American Lung Association®, the EPA, and the Surgeon General recommend testing all homes for radon. There are two general tests for radon: short-term and long-term. These test kits can be purchased through the mail, local health departments, hardware stores, or other retail outlets. When looking for a radon testing lab or mitigation professional, make sure you choose one that is certified by either the National Environmental Health Association (NEHA) or the National Radon Safety Board (NRSB).

Short-term Testing

Depending on the test, the kit remains in your home for 48 hours to 90 days. The most common short-term tests are charcoal canisters, electret ion chamber, and continuous monitors. Because radon levels tend to vary from day to day and season to season, short-term tests are less likely to measure your annual radon exposure.

Steps to follow for a short-term test:

- Be sure to closely follow manufacturer's instructions.
- Close all doors and windows at least 12 hours before testing and keep them closed during the test period. Residents are permitted to enter and leave the home during testing.
- Place kit in the lowest livable level of the home.

- Put kit in a general use area such as a bedroom, family room, or office. (*Do not place in crawl space, furnace room, laundry room, kitchen, bathrooms or enclosed areas such as cabinets.*)
- If possible, put kit 3 to 5 feet off the floor and 3 to 5 feet away from exterior walls.
- Do not test during extreme weather conditions.
- Minimize operation of bathroom or kitchen exhaust fans or non-essential exhaust appliances during test. Take action after two tests.

Long-term Testing

Long-term tests remain in your home for more than 90 days. Alpha track and electret detectors are commonly used for this type of testing. A long-term test will give a more accurate annual average radon level than a short-term test for your home. The average indoor level is estimated to be about 1.3 pCi/L; and 0.4 pCi/L of radon is found in the outside air. Action should be taken to reduce levels if the test results indicate an annual average radon level of 4 pCi/L or higher.

- next -

For further information:

- American Lung Association® of the Upper Midwest Health House®: www.HealthHouse.org
- American Lung Association: www.LungUSA.org
- Environmental Protection Agency: www.EPA.gov.iaq
- Local Department of Health
- National Environmental Health Association: www.NEHA.org
- National Radon Hotline: 800-SOS-RADON (800-767-7236)
- National Radon Safety Board: www.NRSB.org

These tips are brought to you by the American Lung Association® of the Upper Midwest Health House® program. For more information on creating a healthier home environment, visit our website at www.HealthHouse.org.



Raising the Standards for Healthier Indoor Environments.

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Solutions to Radon

A variety of methods are used to reduce indoor radon levels. The most effective system is sub-slab depressurization, which uses pipes and fans to remove radon gas from beneath the concrete floor and foundation before it can enter the home. Radon is then vented out above the roof, where it safely disperses. Other methods, including a ventilation strategy, may also work in your home. The right approach depends on the design of your home and other factors.

Lowering high radon levels requires technical knowledge and special skills. You should use a contractor who is trained to fix radon problems. The EPA Radon Contractor Proficiency (RCP) Program tests these contractors. A trained RCP contractor can assess the radon problem in your home and help you choose the right treatment method. Check with your local health department for names of radon contractors certified through NEHA or NRSB in your area. When hiring a contractor for any home repair, you may want to get more than one estimate.

The cost of making repairs to reduce radon depends on how your home was built and the extent of the radon problem. Most homes can be fixed for between \$800-\$2,500.

Today, homes can be built to reduce the amount of radon coming in by using radon-resistant construction features. The American Lung Association Health House builder guidelines include radon-reduction strategies. For more information on these builder guidelines, call the Health House program: 877-521-1491.



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