

INTRODUCTION TO RADON

▶ **WHAT IS RADON?**

Radon is a colorless, odorless and tasteless radioactive gas that occurs naturally in most rocks and soil. It is produced by the breakdown of uranium in soil, rock and water. Radon is harmlessly dispersed in outdoor air, but when trapped in buildings can be harmful, especially at elevated levels.

▶ **WHAT IS THE HEALTH RISK?**

According to the Surgeon General, exposure to radon is the second leading cause of lung cancer in the United States and is estimated to cause many thousands of lung cancer deaths per year.

Radon is not known to cause other illnesses or problems such as upper respiratory infections, colds or allergic reactions. Its only known health effect is an increased risk of developing lung cancer. However, as with those who smoke, not everyone exposed to high levels of radon will develop lung cancer, and the time between exposure and the onset of cancer may be many years.

▶ **HOW DOES RADON GET IN YOUR HOME?**

Radon can enter a home or building through dirt floors, hollow block walls, cracks in the foundation floor and walls, sump pumps, openings around floor drains, joints and foundation openings for pipes, sewers and other utility connections. Radon can also enter homes through water supplies obtained from wells or from small water systems. Radon can enter and collect inside almost any home or other building.

The U.S. EPA estimates that as many as one in 15 homes across the U.S. have elevated radon levels. As a general rule, houses in the same area with basements have greater potential problems than slab on grade houses. Similarly, slab on grade houses have a greater potential problem than houses with crawl spaces. There are exceptions to this and it should be considered as a generalization only. The only way to know if a building has elevated radon levels is to test.

▶ **RADON IN ALABAMA**

A study during the period of December 1986 through May 1987 by the Alabama Department of Public Health and the U.S. Environmental Protection Agency identified 15 (Zone 1) counties that have the greatest potential for high indoor radon concentrations and greater risk to the health of Alabama citizens. **Madison County** had the greatest problem while areas south of Montgomery had a smaller potential. The highest valid measurement recorded in Alabama was 180 pCi/l in **Calhoun County**. Other Zone 1 counties identified include **Clay, Cleburne, Colbert, Coosa, Franklin, Jackson, Jefferson, Lauderdale, Lawrence, Limestone, Morgan, Shelby** and **Talladega**. Levels of radon found in Alabama were not, and are not, in general, as high as those found in other states such as Pennsylvania, New Jersey, or Iowa.

It is vital to remember that high radon concentrations can occur in any zone on the map. The only way to be sure of the radon concentration in a specific structure is to perform a radon test using test kits or equipment that meet EPA requirements. Contact the **Alabama Radon Hotline at 1-800-582-1866** or a Radon Program County Extension office listed below for additional information.

▶ **HOW CAN I FIND OUT IF I HAVE A RADON PROBLEM?**

Since you can't see or smell radon, special equipment is needed to detect its presence. Test kits are commercially available, relatively inexpensive and easy to use. They can be purchased and used by the homeowner without outside assistance. Other types of test equipment are more technical and expensive and must be used only by specially trained people. To obtain a low-cost test kit, visit a Radon Program County Extension office listed below or visit the Radon in Alabama Web site, www.aces.edu/radon.

Radon tests fall into two categories: short-term and long-term tests. Short-term or screening tests are those that are for a period less than three months. Long-term tests are those covering periods longer than three months.

▶ **WHEN DO I TAKE ACTION?**

The EPA and the Department of Public Health believe that you should try to reduce your radon levels as much as possible. Most homes can be reduced to about 4.0 pCi/l or lower. NOTE: Your decision to take corrective action should be based on the results of a long-term, or follow-up tests, and not on a single short-term screening test only.

You should take action to reduce the levels that are 4.0 pCi/l or higher. The higher the radon level in your home, the faster you should take action to reduce your exposure.

▶ **OTHER FACTORS TO CONSIDER**

Your individual living patterns could influence your assessment of your personal risk and your decisions about the need for further action. Your answers to the following questions may help you evaluate your personal risk.

- * Does anyone smoke in your home? Scientific evidence indicates that smoking may increase the risk of exposure to radon. In addition, smoking significantly increases your overall risk of lung cancer.
- * Do you have children living at home? Some scientific studies of other types of radiation exposure indicate that children may be more sensitive. Consequently, children might possibly be at more risk than adults from exposure to radon.
- * How much time do family members spend at home? Risk estimates assume that 75% of a person's time is spent at home. If you or your family spend more or less time at home, you should take this into consideration.
- * Does anyone sleep in the basement? Since radon concentrations tend to be greater on the lower levels of a home, a person who sleeps in the basement is likely to face a greater risk than a person who sleeps in a bedroom on a higher floor of the home.
- * How long will you live in your home? Risk estimates are based on the assumption that you will be exposed to the radon level found in your home for roughly 70 years. As you evaluate your potential risk, you should consider the total amount of time you expect to live in your home. But remember: other houses you have lived in, or will live in, may have the same or higher radon levels that you should take into consideration.
- * Do you plan to sell your home in the near future? Many real estate transactions now require a radon test prior to closing the loan process. A mitigated home or low radon test level can be a positive selling point.

▶ **HOW CAN I REDUCE MY RISK FROM RADON?**

Your risk of lung cancer from exposure to radon depends upon the amount of radon entering your home and the length of time it remains in the home.

- * Stop smoking and discourage smoking in your home. By doing so, you should reduce your family's overall chance of developing lung cancer, as well as reducing your family's risk from radon exposure.
- * Spend less time in areas of your home with higher concentrations of radon, such as the basement.
- * Whenever practical, open all windows and turn on fans to increase the air flow into and through the house. This is especially important in the basement.
- * If your home has a crawl-space beneath the floor, keep the crawl-space vents on all sides of the house fully open all year.

While the above actions will help reduce your risk from radon, they generally do not offer a long-term solution and should not be used as a long-term solution to a radon problem in your home. You can get more information about permanent, cost-effective solutions to radon problems in your home in the EPA publication, [Consumer's Guide to Radon Reduction](#). (See EPA publications link on Radon Web site or visit a Radon Program County Extension Office listed below.)

► **FOR MORE INFORMATION**

Call the **Alabama Radon Hotline: 1-800-582-1866**
 Call a County Extension office listed below.



Alabama Radon Program County Offices

Clay County (256) 354-5976
 Calhoun/Cleburne counties (256) 463-2620
 Colbert County (256) 386-8570
 Franklin County (256) 332-8880
 Jackson County (256) 574-2143
 Jefferson County (205) 325-5342, ext. 33
 Lauderdale County (256) 766-4846
 Lawrence County (256) 974-2464
 Limestone County (256) 232-5510
 Madison County (256) 532-1578
 Morgan County (256) 773-2549
 Shelby County (205) 669-6763
 Talladega County (256) 362-6187

Auburn University (334) 844-3686

Alabama Department of Public Health
 Jim McNees 1-800-582-1866

Radon in Alabama Web site:
www.aces.edu/radon



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