

Your health risk

The primary health risk from long-term exposure to radon is lung cancer. The risk of developing a lung cancer from radon exposure depends both on how much radon is present and how long you are exposed to radon. The higher the radon level or the longer the time of exposure, even if the levels are relatively low, the greater the risk. Exposures up to 4 pCi/L may present some risk of contracting lung cancer to more sensitive occupants, especially children and those who live with smokers. The US Congress set as a goal the lowering of radon levels in buildings to equal the levels of outside air.

PERFORMING RADON TESTS FOR A REAL ESTATE TRANSACTION

US EPA protocols state that when using passive devices, such as activated charcoal tests, two short-term tests should be conducted, either together or sequentially, at the same location in the building. The tests should be averaged together and if the average is 4.0 pCi/L or higher, radon mitigation is recommended. Even if the average is below 4.0 pCi/L, the buyers should consider testing in a different season or deploy a long-term test device to assess their long-term risks. It is **highly recommended** that any property transaction tests be conducted by a **non-interested third party**. To locate a listed or certified radon tester, contact your state radon office or visit our website at <http://www.neha-nrpp.org> to download a list of NEHA-NRPP certified testers. You should also visit the EPA website to download a copy of EPA's Home Buyer's and Seller's Guide to Radon.

Radon Test Device Placement

The US EPA recommends that testing device(s) be placed in the lowest level of the home that could be used regularly, whether it is finished or unfinished. Conduct the test in any space that could be used by the buyer as a bedroom, play area, family room, den, exercise room, or workshop. Based on their client's intended use of the space, the qualified testing professional should identify the *appropriate test location and inform their client (buyer)*. Do not test in a closet, stairway, hallway, crawl space or in an enclosed area of high humidity or high air velocity. An enclosed area may include a kitchen, bathroom, laundry room or furnace room.

Variations in Radon Levels

When tests are performed in different seasons or under different weather conditions, the initial screening and follow-up tests may vary considerably. Radon levels can vary significantly between seasons, so different values **are to be expected**. Even during normal weather, indoor radon levels may rise and fall by a factor of two on a daily cycle; for example, from 5 pCi/L to 10 pCi/L in 24 hours. During rapidly changing or stormy weather, the levels may change more dramatically. Because continual changes in radon levels are considered normal, expose the testing device for as long as is practical, while following the manufacturer's recommendations. This, of course, provides a better overall average of the measurement.

If you are comparing tests, or are averaging a series of tests, bear in mind that any radon test returns only the average of the levels present during a **specific period of time** at the **precise location** of the test. Conditions during a different test period or at a different location in the building are **expected to be different**.

Test results can also vary if the radon test instructions were not carefully followed. A laboratory measuring radon in samples taken outside the lab **must rely on the person conducting the test**. For example, the wrong starting or ending date of a test will significantly affect the calculated result. The location of each radon test can also influence the result. For example, a test placed in the blowing air stream of a fan is likely to collect more radon than it would under normal conditions. Also, three tests conducted in one home, but in three different rooms, **would be expected to have at least slightly different test results**.

Test results from a properly used activated charcoal test will more closely reflect the average radon concentrations over the last three to four days of the test period. This happens because the radon collected by the activated charcoal has a radioactive half-life of only four days. Thus, much of the radon collected early in a seven day test has already begun to decay prior to the conclusion of the test.

Retesting

It is important to understand that radon levels can change at some point in the future. Therefore, it is important to retest when there is occupancy by a new owner, before and after a new addition to the house, alterations that could alter ventilation patterns, if major cracks are noticed in foundation walls or the slab, you begin using a ground contact area of the home not previously tested, or even recent nearby construction blasting or earthquakes. EPA recommends that homes be retested every 2-3 years. If the home has been previously mitigated or alterations are made to the mitigation system, retesting should be done.

Mitigation

When radon mitigation is necessary, it is advisable that a state-licensed or nationally- certified contractor be used to design and install the mitigation system. For easy to read mitigation information, go to the US EPA website and download a copy of the Consumer's Guide to Radon Reduction.

For technical information, call (828) 684-0893. Office hours are Mon-Fri 8:30 to 5:30 EASTERN
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