

Understanding the Radon Health Risk and What You Can Do About It

Why Radon Deserves Your Attention

Radon gas is a naturally occurring radioactive byproduct of uranium decay in the soil. It seeps into homes through cracks in the foundation, gaps around pipes, and other openings. The gas itself is invisible and odorless, which makes it easy to overlook. But the radon health risk is real and well-documented. The EPA estimates that radon is the second leading cause of lung cancer in the United States, after smoking. That is a serious statement, and it is backed by decades of research from organizations like the American Lung Association and the National Radon Program.

I have been working in radon mitigation for years, and I still meet homeowners who think radon is someone else's problem. They assume their house is fine because it is newer, or because they live in a neighborhood where no one has tested. Neither assumption holds up. Radon levels vary from house to house, even on the same street. The only way to know is to measure.



In St. Louis, the radon potential map from the EPA shows that much of the surrounding area has moderate to high potential for elevated radon levels. The geology here includes limestone and shale, which can produce significant amounts of radon gas as they break down. That is why companies like Air Sense Environmental exist, to help homeowners understand their actual exposure and install effective mitigation systems when needed.

How Radon Gets Into Your Home

Radon moves through the soil and enters buildings through the path of least resistance. The pressure inside a typical home is slightly lower than the pressure in the soil around it. That difference acts like a vacuum, pulling soil gases toward the foundation. Once radon finds a way in, it accumulates because modern homes are built tight for energy efficiency. Without proper ventilation, the gas can build up to levels that pose a serious health risk.

Common entry points include slab-on-grade foundations, crawl spaces, and basements. Cracks in the concrete floor, gaps around utility penetrations, and even the joint where the floor meets the wall can all let radon in. The problem is not limited to old houses. New construction often has just as many entry points, and the tighter envelope can make indoor levels higher.

I once tested a brand new home in a suburban development. The builder had used a vapor barrier under the slab, but the barrier was torn during construction and never repaired. The radon level in the finished basement was over 8 picocuries per liter, more than double the EPA action level. That house needed a mitigation system before the family could safely move in. Stories like this are not rare.

Testing Is the Only Way to Know Your Exposure

The EPA and the National Radon Program recommend testing every home, regardless of location or age. A radon test kit is the starting point. You can buy a short-term kit at most hardware stores or online, and it will give you a snapshot of the radon level over two to seven days. For a more accurate picture, a long-term test that lasts 90 days to a year is better because it accounts for seasonal swings.

Some homeowners prefer to hire a professional, especially if they are buying or selling a house. A Home Inspector can include radon testing as part of a general home inspection, or you can call a mitigation specialist directly. If you use a Continuous Radon Monitor, or CRM, you get hourly readings that show how levels change with weather, occupancy, and ventilation. That data is valuable because radon levels are not constant. They spike during storms and drop when windows are open.

I always tell clients that testing is cheap compared to the alternative. The cost of a test kit is trivial next to the potential health risk of living with elevated radon for years. The American

Lung Association runs a helpline through the National Radon Program, and they can answer questions about testing and how to interpret results. There is no excuse for not testing.

What a Mitigation System Does

If your test shows a radon level at or above the EPA action level of 4 picocuries per liter, you need to reduce it. The most common and effective method is sub-slab depressurization, also called soil suction. It works by creating a low-pressure zone under the slab, which redirects radon gas away from the house and vents it safely above the roofline.

The installation involves drilling a hole through the concrete floor, digging out a small pit beneath it, and inserting a vent pipe. That pipe runs up through the house and out the roof. A radon fan is attached to the pipe to pull suction from under the slab. The fan runs continuously, and it is usually installed in the attic or outside so that the noise is not an issue. The system also includes a manometer, a simple U-tube gauge that shows whether the fan is working. If the manometer reading drops, you know there is a problem and can call for service.



Sealing cracks and other openings in the foundation is part of the process, but it is not a standalone solution. Caulking alone rarely reduces radon levels enough to meet safety

standards. The real work is done by the soil suction and the radon fan. I have seen systems drop radon levels from 20 picocuries per liter down to below 1. That is a 95 percent reduction or more.

Post-Mitigation Verification Is Critical

After a mitigation system is installed, you need to confirm that it actually works. That is where post-mitigation verification comes in. A professional will run another radon level measurement using a CRM or a laboratory-analyzed test kit. The goal is to show that the levels are now below the EPA action level. I have seen too many homeowners skip this step, only to find out months later that the system was not pulling enough suction. The manometer gives a clue, but only a radon test gives the final answer.

In St. Louis, Air Sense Environmental includes post-mitigation verification as part of every installation. They also provide a clear report with the before and after numbers so that you have documentation for your records. If you are selling the house, that report can be a big help. Buyers and their Home Inspector will want to see proof that the radon problem was fixed.

Myths and Misconceptions

One common myth is that radon is only a problem in basements. While basements often have the highest levels because they are closest to the soil, radon can reach any floor. I have measured elevated levels on the second story of houses where the stack effect pulled the gas upward. Another myth is that radon mitigation is ugly or noisy. A well-installed system is nearly invisible. The vent pipe runs up the side of the house or inside a closet, and the fan is quiet. You would not know it was there unless you checked the manometer.

Some people think that if radon is natural, it cannot be that dangerous. But so is arsenic, and nobody wants that in their drinking water. The science is clear. The National Radon Program and the American Lung Association have spent decades studying the [radon health risk](#), and the conclusion is the same: prolonged exposure to elevated radon increases your risk of lung cancer. The risk is higher for smokers, but even non-smokers face a significant danger.

Taking Action

If you have not tested your home yet, start there. Buy a radon test kit from a trusted source, or hire a professional radon measurement company. If the results are high, call a mitigation specialist who uses proven methods like sub-slab depressurization. Ask about their approach to post-mitigation verification and whether they include a follow-up test in the price. A reputable company will stand behind their work with real numbers.

Radon is a problem you can fix. It is not like the weather or the economy. You can measure it, you can reduce it, and you can verify that the fix works. The key is to stop treating the radon health risk as something abstract and start treating it as a manageable part of home maintenance. Your lungs will thank you.