

Understanding Radon Gas Risk in Metro East Homes

Living in the Metro East area, which includes communities like Belleville, Edwardsville, O'Fallon IL, and Collinsville, has a lot going for it. We have good schools, access to outdoor recreation, and a cost of living that makes sense for families. But there is one hidden hazard that does not get talked about enough at open houses or neighborhood gatherings. That hazard is radon gas, and the radon gas risk here is real enough that every homeowner should understand what they are dealing with.

Radon is a radioactive gas that forms naturally when uranium in soil and rock breaks down. It has no color, no smell, and no taste. You cannot see it or feel it. The only way to know whether your home has a problem is to test for it. The EPA has identified much of Illinois, including the Metro East counties, as having the potential for elevated indoor radon levels. That is not a scare tactic; it is a straightforward geological fact based on the kind of bedrock and glacial deposits we have under our feet.

Why Metro East Homes Are Vulnerable

The [radon gas risk](#) in this part of Illinois comes from the ground itself. Our region sits on a mix of glacial till, loess, and limestone formations. As radon forms underground, it moves upward through pore spaces in the soil. Once it reaches the surface, it can seep into a home through the basement floor, cracks in the foundation, utility entry points, or even through the gap between a slab and the wall. A house does not need to be old or poorly built to have a problem. New construction homes can have just as much radon entry if the soil beneath them is producing the gas.

Homes with basements or crawlspaces are especially susceptible. A basement offers a large surface area in contact with the soil, and the negative pressure that often exists inside a house relative to the outdoors can actually pull radon-laden soil gas indoors. That pressure difference is strongest in the lower levels of the home. So if you spend time in a finished basement or your kids play down there, you are looking at the most likely point of entry for radon.

Testing: The Only Way to Know

I have talked to a lot of homeowners who assume they would know if their house had a radon problem. They imagine some kind of smell or a visible stain. But radon does not work that way. The only reliable method is a radon test kit or an electronic radon detector placed in the lowest lived-in level of the home.

You have two basic options when you test. A short-term test stays in place for two to seven days. It gives you a snapshot of the radon level during that specific window. That can be useful if you are in a hurry, say during a real estate transaction. But radon levels fluctuate with weather, season, and how you run your HVAC system. A short-term test can miss the bigger picture if conditions are not typical. A long-term test, which runs for 90 days up to a year, gives you an average level that is much closer to your actual annual exposure. The EPA recommends a long-term test for the most accurate picture, and I agree.

For homeowners who want continuous monitoring, a plug-in radon detector can track levels in real time and alert you if something changes. That is a good option if you already know your home has moderate levels and you want to keep an eye on things after installing a mitigation system.

What the Numbers Mean

The EPA has set an action level of 4 picocuries per liter of air. If your test shows 4 pCi/L or above, the agency recommends that you take steps to reduce it. But that number is not a magic line between safe and dangerous. The EPA also states that any radon exposure carries some risk, and the lower you get it, the better. So if your home comes back at 3.2 pCi/L, you are technically below the action level, but your radon gas risk is still higher than if you reduced it to 1.0 pCi/L.

To put it in perspective, the EPA estimates that radon causes about 21,000 lung cancer deaths per year in the United States. That makes it the second leading cause of lung cancer after smoking. If you smoke and you live in a home with elevated radon, the combined risk is much worse than either factor alone. The radon gas risk is not something to shrug off, especially when the fix is well understood and usually affordable.

How Mitigation Works

If testing shows elevated levels, the next step is a radon mitigation system. The most common and effective approach for Metro East homes is sub-slab depressurization, also called soil suction. A contractor drills a hole through the basement floor, digs out a small pit in the soil underneath, and installs a pipe that runs from that pit up through the roof. A fan attached to that pipe creates a vacuum under the slab, pulling radon-laden soil gas away from the house and venting it safely above the roofline.

There are two basic types of these systems. A passive radon system relies on natural air pressure and stack effect to move the gas upward, with no fan. These are sometimes installed during new home construction as a preventive measure. But passive systems do not always reduce levels enough on their own. An active radon system uses a fan to create that

continuous vacuum, and it is much more reliable. For existing homes with a measured problem, active sub-slab depressurization is the standard fix.

Homes with a crawlspace instead of a basement need a slightly different approach. In those cases, the mitigation strategy usually involves sealing the crawlspace floor with a heavy vapor barrier and then venting the space under the barrier. A fan can also be used to create negative pressure beneath the barrier. The principle is the same: intercept the radon before it enters the living space and move it outdoors.

Air Sense Environmental has done this kind of work across the Metro East, including Belleville, Edwardsville, O'Fallon IL, and Collinsville. Their crews know the local soil conditions and the common foundation types in our area. That matters because a system designed for a slab-on-grade home in Texas is not going to work the same way in an Illinois house with a full basement and clay-rich soil.

Cost and Peace of Mind

A properly installed active radon mitigation system typically costs between \$800 and \$1,500 for a standard home. That includes the fan, piping, sealing work, and a follow-up test to confirm the system is working. Compared to the cost of other home repairs, that is not a huge number. And when you consider that it reduces your long-term exposure to a known carcinogen, it is one of the best investments you can make in your home and your health.

Some homeowners worry about the aesthetics of a pipe running through their garage or up the side of the house. In practice, a good installer can route the pipe in a way that is unobtrusive. The fan itself is quiet and runs continuously. The electricity cost to run it is usually around the same as a 60-watt light bulb left on all the time, maybe \$30 to \$50 a year. That is a small price for the reduction in radon gas risk.

New Construction: Build It Right from the Start

If you are building a new home in the Metro East, you have an opportunity to handle radon before the foundation is even poured. Many builders in Illinois now install a passive radon system as part of the standard construction. That means a layer of gravel under the slab, a vapor barrier, a vent pipe that runs from the gravel up through the roof, and a sealed sump or collection point. Even if no fan is installed initially, the system can be activated later if testing shows it is needed.

That approach is smart. It costs very little during construction, and it saves the expense of retrofitting later. But even with a passive system in place, you should still test the home after you move in. Builders do not always seal every possible entry point, and the passive system

might not pull enough vacuum on its own. A short-term test or a long-term test will tell you whether the system is actually keeping levels low.

Radon and Real Estate Transactions

If you are buying or selling a home in Belleville, Edwardsville, O'Fallon IL, or Collinsville, radon testing often comes up during the inspection period. Buyers have the right to request a test, and sellers can choose to do one proactively to avoid surprises. I have seen deals delayed because a short-term test was done in the middle of a rainy week when the house was closed up tight, and the result came back high. A retest under normal conditions showed acceptable levels. That is why I recommend either a long-term test or at least a retest under different weather conditions before making a decision.

Some homeowners choose to install a mitigation system before listing their home. That can be a selling point, because it tells buyers the radon issue has already been addressed. A full radon mitigation system with a recent follow-up test showing low levels is a solid piece of documentation to include in the disclosure packet.

Maintaining Your System

Once you have a mitigation system installed, it is not a set-and-forget piece of equipment. The fan should be checked periodically to make sure it is still running. Most systems come with a manometer, a small gauge that shows whether the fan is maintaining proper vacuum. If the gauge reading changes, something may be wrong. The exterior vent opening should also be kept clear of debris, bird nests, or snow buildup.

It is a good idea to test your home every two years or so, even with a working system. Ground conditions can shift, new cracks can develop in the foundation, and a fan can lose efficiency over time. A radon test kit is cheap insurance. If levels have crept back up, you can call a mitigation professional to diagnose the problem before it becomes a serious exposure.

Living in the Metro East means living with the geology under our feet. That geology produces radon, and that radon can enter our homes. But the radon gas risk is manageable. Test your home. If the numbers are high, install a system. And if you already have a system, make sure it is still working. That is the practical, straightforward approach that keeps your family safer without any drama or scare tactics.