



Radon – The Risk, and the Fix

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If you ever wonder “What’s the big deal about radon?”, you’re not alone. After all, it’s an odorless, tasteless, invisible gas. It doesn’t slap you in the face the way cigarette smoke does when you walk into a smoking-allowed establishment. Add to that the fact that it takes years, even decades, to have its impact made known makes it even easier to feel like we have more important things to worry about.

But what are the risks? The Environmental Protection Agency (EPA) says that radon causes lung cancer. They know this from data collected on miners that developed lung cancer. The data is not extrapolated from testing done on animals. So what is the probability that one of us will get lung cancer from radon? The EPA has tables in their publication “Home Buyers and Sellers Guide to Radon” that states the risk for contracting lung cancer is about 7 in 1000 (0.7%) if you’ve lived in a home with a radon level of 4.0 pCi/L (the EPA action level) over a lifetime. This is about the same risk of dying in a car crash. If you are a smoker the risk jumps to 62 people in 1000 (6.2%), which is about 5 times the risk of dying in a car crash. If you’ve ever smoked, or lived with a smoker your risk level will be somewhere in between because smoking and radon work together synergistically to make your odds worse.

What if the level of radon is 20 pCi/L, a level found in some homes on the Front Range? The EPA estimates that 36/1000 (3.6%) people could contract lung cancer from radon if they have never smoked, a risk equal to 36 times that of drowning. The rate jumps to 260/1000 (26%) if you’re a smoker which is 260 times the risk of drowning. Again, if you’ve ever smoked, or lived with a smoker your risk level will be somewhere in between.

A home I tested near Main and Midway in Broomfield poses an even greater risk at 28.9 pCi/L. But before you write down the name of that intersection, stop. The house next to this one may not have an elevated level of radon. Neighborhood or age of house are not good indicators of potential of high radon. The EPA recommends that ALL homes be tested for radon.

After looking at the data, testing for and mitigating radon appears to be a good idea if the level is high. But how much will mitigation cost? In a home with a basement or any kind of slab floor a 6” hole is drilled in the floor. Then about a five gallon bucket of dirt is excavated from the hole. Next a pipe is put into the hole and run to the exterior of the home. A fan is put in-line with the pipe that will run continuously to extract the radon gas from underneath the basement floor. It creates a suction that will vacuum the radon laden air out from under the home and vent it to the outside, thus reducing the level of radon in the home. This process typically costs between \$800 and \$900.

A home with a crawlspace is done in a similar way. A Plastic sheet is laid on the soil in the crawl space and sealed to the foundation walls. Then a fan is plumbed from under the plastic sheet to the exterior. A vacuum is draw by the fan as in a basement slab. Due to the need for more materials in a crawlspace. the mitigation cost is a bit higher. Expect to pay between \$900 and \$1000 for a typical installation in a crawlspace.

Lastly, there’s the situation where there’s a basement AND a crawlspace. The cost for a situation like this is very similar to that for only a crawlspace, according to the radon mitigators that I talked to for this article. There’s a bit more work involved, but less materials needed.

But wait, what about the cost of running the system? The three mitigators that I queried said that the fans they use draw between 54 and 85 watts. About as much electricity as a light bulb that you leave on continuously. This would amount to between \$4.16 and \$6.55 per month including taxes and other surcharges.

One last thing you might be wondering is if it costs more to mitigate higher levels of radon. The three mitigators I contacted said no. Whether the reading is 4 or 60 pCi/L, they would install the same system with the same fan. I have heard of mitigators that will use different size fans for different levels of radon and charge differently depending on which fan is installed. But according to the mitigators I talked to, this is not a common practice.

In summary, radon should be tested for in all homes (although it is always the clients choice). It should be mitigated if the level is 4.0 pCi/L or more and it shouldn’t kill your deal. All homes with high radon can be mitigated.

To learn more about radon check out: epa.gov/radon.