



Radon Risk

FACT SHEET 26-009-0915

What is radon?

Radon is a tasteless, colorless, odorless gas that arises from radioactive decay of material found naturally in soils and rocks. Because it originates from soils and rocks, radon is found both in outdoor and indoor air. This fact sheet is intended to educate you on radon, how you might be exposed to radon, the potential health risks associated with exposure to radon, and the steps that you can take to protect yourself from potential health risk associated with radon exposure.

What factors affect radon exposure?

The three main factors affecting radon exposure are geography, where you spend your time indoors, and air flow within your home. Geographically, mountainous regions, the Midwest, and the northern U.S. have higher potential for radon. The U.S. Environmental Protection Agency (EPA) map for radon potential by region is at: <http://www.epa.gov/radon/zonemap.html>. However, because you typically spend most of your time at home and radon tends to accumulate in buildings, this is where you are likely to have the most exposure. Where you spend your time indoors is important because locations nearer to where the radon enters a building (e.g., basements) are likely to have higher concentrations. Controlling the air flow in your home with good ventilation or by preventing radon from entering your home will reduce your exposure.

What is the health risk associated with radon exposure?

According to the EPA, radon is the number one cause of lung cancer among people who do not smoke, and it is the second leading cause of cancer for people who do. If you smoke and you breathe air containing radon, your risk of lung cancer can increase even more.

The EPA states that your health risk from radon exposure at home depends “mostly on how much radon is in your home, the amount of time you spend in your home, and whether you are a smoker or have ever smoked.”¹ The amount of radon in the air is typically measured in picocuries per liter (pCi/L). In the U.S., the average indoor radon level is about 1.3 pCi/L, and the average outdoor level is about 0.4 pCi/L.

In the U.S., the EPA estimates the risk of lung cancer from a lifetime (75 years) of exposure to 4 pCi/L of radon as follows:

- For people who have never smoked, about 7 out of 1,000 people could get lung cancer, and
- For people who smoke, about 62 out of 1,000 people could get lung cancer.
- If you no longer smoke, it is likely that your risk is between the values above.

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¹ EPA (U.S. Environmental Protection Agency), 2012. A Citizen's Guide To Radon – The Guide To Protecting Yourself And Your Family From Radon . Report EPA 402/K-12/002. May. (<http://www.epa.gov/radon/pubs/citguide.html>)

How can I manage my risk?

First, if you are a smoker—consider quitting. You can greatly reduce your risk of lung cancer from exposure to radon simply by quitting smoking. Next, consider testing your residence if it has a high potential for radon, and take action to reduce radon levels if necessary. The EPA recommends taking action to reduce radon in a building when levels are at or above 4 pCi/L and urges people to consider taking action to reduce radon in a building when levels are between 2 and 4 pCi/L.

The following mitigation timeframes are taken from Public Works Technical Bulletin 200-1-144, and are provided below for your information. These guidelines are based on the EPA action levels. Generally, the higher the radon level, the more quickly the EPA suggests taking action.

Radon Concentration (pCi/L)	Recommended Actions
0 to < 4	No action required
4 to < 8	Mitigate within 5 years
8 to < 20	Mitigate within 1 to 4 years
20 to < 200	Mitigate within 6 months
> 200	Mitigate within 1 month or move the occupant
Source: Public Works Technical Bulletin 200-1-144: 30 October 2014	

For Department of Defense (DOD) housing, the DOD has adopted the EPA guidelines for remediation of radon in living quarters². Contact your housing office for more information on local radon testing and remediation efforts.

Where can I find more information about radon and risks of exposure?

Additional information can be found at the EPA's radon website: <http://www.epa.gov/radon/> and Kansas State University's National Radon Program Services website: <http://sosradon.org/>.

² Unified Facilities Criteria, UFC 4-711-01 dated 13 July 2006.