

Health Effects of Radon

Radon is a radioactive gas that is present throughout soil and rocks which often migrates into homes and other buildings through basements, slabs, and foundations. Once in the home, the radon can build up to high concentrations resulting in a radiation exposure to the occupants.

Radon is a colorless, odorless, tasteless radioactive gas that is a product of the natural decay of trace amounts of uranium in soil and rock. The harmful health effects of radon arise from the radioactive particles emitted from radon and its decay progeny and settled in the lungs, where radon attaches to the surface of the lungs and emits its radioactive particles. It is these radioactive particles that can impact the lungs and cause lung cancer.

Currently, there are no other health effects associated with radon exposure except for lung cancer. Additionally, lung cancer due to radon exposure cannot be distinguished from lung cancer due to smoking. The table below shows the U.S. Environmental Protection Agency's (EPA) risk chart for smokers and non-smokers for several levels of radon concentration.

If 1,000 people were exposed to this level over a lifetime*		
Radon Level	Smokers	Non-smokers
20 pCi/L (picocuries per liter)	~ 260 people could get lung cancer	~ 36 people could get lung cancer
8 pCi/L	~ 120 people could get lung cancer	~ 15 people could get lung cancer
4 pCi/L	~ 62 people could get lung cancer	~ 7 people could get lung cancer

*Lifetime exposure equates to 70 years and 18 hours per day.

There are three primary factors that can increase the risk of developing lung cancer: the concentration of radon in the home, length of time exposed to that concentration, and being a smoker. Smokers are approximately six times more likely to develop radon-induced lung cancer than non-smokers.

According to the EPA, radon is the second leading cause of lung cancer after smoking. This is a particularly important issue for residents of Pennsylvania because it may be one of the most severely affected states in the country for radon. Pennsylvania has a wide distribution of radon occurrences, a significant number of high radon results, and a high average radon concentration in homes that were measured.

Many lung cancers are diagnosed in more progressed stages and are more difficult to successfully treat. Therefore, it is important to minimize the risk from radon exposure.

How can one reduce the risks from radon? First and foremost, stop smoking, test the home for radon and, if elevated levels are found, have the home mitigated to reduce the radon level. These steps can significantly reduce the risks of lung cancer from radon exposure.

For more detailed information on health effects of radon, see the following publications:

EPA Assessment of Risks from Radon in Homes, June 2003. Office of Radiation and Indoor Air, U.S. Environmental Protection Agency.

Health Effects of Exposure to Radon, BEIR VI, 1999. National Academy Press, Washington, D.C.

For more information, visit www.dep.pa.gov.

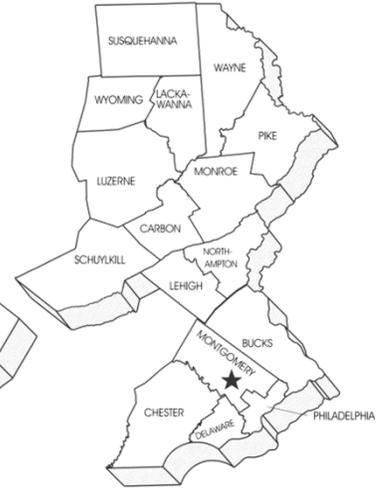
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