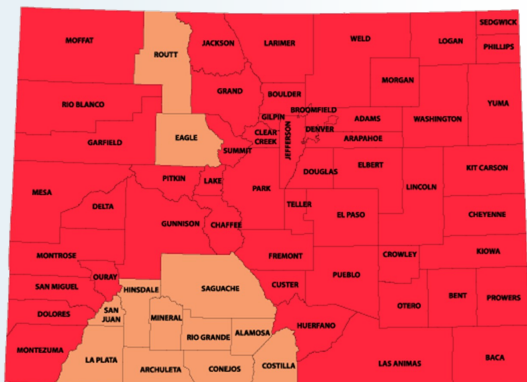


Pueblo County Radon Facts

- ⇒ Over 70% of the homes tested in Pueblo County have elevated levels above 4.0pCi/L., which is the action level set by the USEPA.
- ⇒ The average radon level for Pueblo County is 8.9pCi/L.; levels range from 0.7 to 201.5pCi/L.
- ⇒ The average cost for radon mitigation is between \$1,000.00-\$1,500.00.
- ⇒ According to the USEPA Pueblo County is one of 52 Colorado counties in Zone 1 . The other 12 counties are classified as Zone 2. Zone 1 counties have a high predicted average indoor radon screening level >4.0pCi/L.. Zone 2 counties have a moderate predicted average indoor radon screening level between 2.0-4.0pCi/L.



ZONE 1 High radon potential (probable indoor radon average >4pCi/L)
ZONE 2 Moderate radon potential (probable indoor radon average 2-4 pCi/L)

References

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Health Effects of Exposure to Radon: BEIR VI. Committee on Health Risks of Exposure to Radon (BEIR VI) et al; National Academy Press, 1999. <http://www.nap.edu/html/beir6/>

Heartland Radon Research and Education Program (HRREP): The Iowa Radon Lung Cancer Study, Phase I and Phase II. Field, R.W. et al; Fifteenth National Radon Meeting, 2005. <http://www.chcc.uiowa.edu/misc/radon.html>

Residential Radon and Risk of Lung Cancer: A Combined Analysis of 7 North American Case-Control Studies. Krewski D et al; 2005; Epidemiology; 16:137-145.

Radon in homes and risk of lung cancer: collaborative analysis of individual data from 13 European case-control studies. Darby S et al; 2005; BMJ; 330(7485):223-227.

Pooled studies show that radon exposure is not only hazardous to human health during occupational exposure, but is equally or even greater a risk during residential exposure.

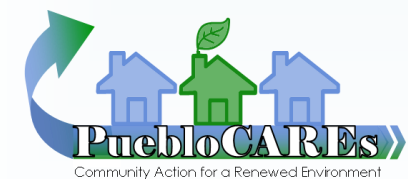
Residential Radon Studies include:

- Iowa , Missouri - I , Missouri - II, New Jersey, Connecticut, Utah/Southern Idaho
- Winnipeg
- 13 European Case-Control Studies from 9 different European Countries

Miner Radon Studies:

- Chinese Tin Miners
- Czechoslovakian, now the Czech Republic, Uranium Miners
- Beaverlodge, Canada and Port Radium, Canada Uranium Miners; Ontario, Canada Uranium Miners; New Foundland, Canada fluorspar Miners
- South Australian Uranium Miners
- Swedish Iron Miners
- French Uranium Miners
- Colorado, New Mexico, USA Uranium Miners

A Physician's Guide to Radon



Community action aimed at reducing toxic environmental exposures.

301 N Main St., Ste. 101 Pueblo CO 81003
 Phone: (719) 252-6258
 Fax: (719) 546-1942
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 Website: pueblocares.org

What is radon?

Radon is a naturally occurring, colorless, odorless, invisible radioactive gas. Radon is produced from the natural decay of uranium and radium, which are found in rocks and soil. Radon can also be found in water.

Radon escapes easily from the ground through cracks and crevices in the soil into the air, where it disintegrates through short-lived decay products called radon progeny. As radon progeny decay, they emit radioactive particles and attach to aerosols, dust and other particles in the air, which are inhaled.

Outdoor radon levels are usually very low. The average outdoor radon level varies between 5 and 15 Bq/m³ (between 0.14 and 0.4 pCi/L)*.

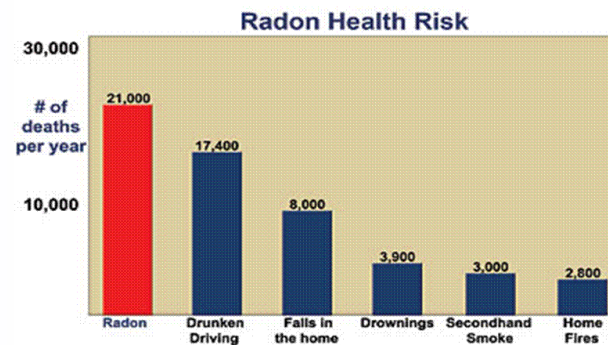
Homes and other structures draw radon in from the soil beneath the foundation. Once indoors, radon becomes trapped and levels may increase. Elevated levels are found in places that come in contact with or are closest to the ground. Other places where radon becomes trapped and may contain elevated levels are in mines, caves and water treatment facilities.

**Radon radioactivity is measured in Becquerels (Bq) and in the United States, picocuries (pCi). One Becquerel corresponds to the transformation (disintegration) of one atomic nucleus per second. One Radon concentration in air is measured by the number of transformations per second in a cubic meter of air (Bq/m³), 37Bq/m³ is equal to one pCi per liter of air.*

Health Effects

The public health concern for human exposure to radon is either from high level exposure in the workplace or low level long-term exposure in homes. Radon is a known human carcinogen according to the World Health Organization, National Academy of Sciences, The American Medical Association, The American Lung Association, the International Agency for Research on Cancer and the US Surgeon General.

In the United States radon is the second leading cause of lung cancer in smokers and the leading cause among non-smokers. An estimated 15,000-21,000 deaths per year nation wide are caused by radon induced lung cancer.



Lung cancer may occur in both men and women. When radon progeny are abundant in the air and are deposited on the cells lining the airways, the alpha particles can then damage DNA. Highly radioactive particles adhere to the lung tissue, where they may irradiate sensitive cells. The radiation exposure can alter the cells, thus increasing the potential for cancer.

Significant health effects have been seen in uranium miners who are exposed to high levels of radon.

However, recent studies in Europe, North America and China have confirmed that lower concentrations of radon – such as those found in homes – also confer health risks and contribute substantially to the occurrence of lung cancers worldwide.

The risk of lung cancer increases by 16% per 100 Bq/m³ (10% per 2.7 pCi/L) increase in radon concentration. The dose-response relation is linear – i.e. the risk of lung cancer increases proportionally with increasing radon exposure.

Take action against radon

Every home should be tested for radon. Radon is easy to test for and testing is inexpensive.

Test kits are available through Citizens for Clean Air in Pueblo, the local Health Department, Lowe's, Home Depot and the National Radon Program Services at www.sosradon.org.

There are two different types of testing: Short-term and long-term. Short-term test devices are used for 2 days up to 90 days under closed housed conditions. This will give a snap shot reading of what the potential exposure to radon may be. Long-term test devices are used for 91 days up to 1 year under normal living conditions. It is recommended that the structure be tested for the entire year. This will give an average exposure reading.

If the reading comes back above the EPA action level of 4.0pCi/L (148Bq/m³) it is recommended to have a radon reduction system installed in the home.

For more information refer to www.who.int/en, www.coloradoradon.info or www.epa.gov/radon