

Radon is a common health risk in Ravalli County

Radon is an invisible, naturally occurring, odorless gas produced from the decay of uranium. Common throughout the Rocky Mountains, Radon is estimated to cause many thousands of deaths each year in the U.S. In fact, the Surgeon General warns that radon is the second leading cause of lung cancer. Only smoking causes more lung cancer deaths.

Very low concentrations of uranium occur in many rocks and soils. Some rock types, such as granite, contain higher levels of uranium and thus produce more radon. Most soils in Montana generate at least some radon, and the granitic soils of western Montana have some of the highest levels in the state. Radon concentrations are measured in units of radioactivity called picoCuries.

The national average background level of radon in outdoor air is between 0.2 and 0.7 picoCuries per liter (pCi/L). For indoor air, the national average is 1.3 pCi/L. In Montana the average for indoor air is 5.9 pCi/L.

Radon gas can move from the surrounding soils and accumulate in enclosed areas such as homes when the atmospheric pressure inside the structure is lower than the surrounding pressure. Indoor air that is warmer than outdoor air rises in homes and pulls cooler air in from the outside. Blowing wind and heavy rainfall can also increase the movement of radon into a house.

So far, most efforts toward radon education have been focused on radon's entry into homes from the soil through cracks in building floors and foundations. Yet in areas where ground water contains high levels of radon, water can also contribute radon to indoor air through common household activities such as showering, bathing, clothes washing, dish washing, and cooking. In general, surface water, such as rivers and lakes, contains lower levels of radon than ground water.

Radon levels in Ravalli County homes

The EPA has set 4 pCi/L as a recommended annual average level for a lifetime exposure to radon in indoor air. For homes that test above 4 pCi/L, it is recommended steps be taken to reduce radon levels. As of May 2005, 742 radon test results in Ravalli County revealed 395 homes (53%) had elevated radon levels.

How to test homes for radon

Radon gas can penetrate houses from many sources in many fashions. It is not possible to radonproof a home, but it is possible to reduce its level to below 4 pCi/L.

The most important contributor to indoor radon is the soil from which radon can be drawn through gaps in the house floor and foundation. Houses that are in direct contact with the ground will have higher radon levels than houses with an air space under the dwelling. Radon levels in the upper floors of a multi-story building are usually lower than on the ground floor. The concentration of radon in your home should be measured and the appropriate action taken if the level is found to be greater than 4 pCi/L, based on an annual average.

Radon measurement is simple, relatively inexpensive, and can be done in many ways. Radon test kits are available at the Ravalli County Environmental Health Department.

Radon reduction

Once a home is tested and found to exceed radon levels, a mitigation strategy should be developed. Only approved Mitigation Service Providers should be hired for the task of mitigation in your home. A list of residential mitigation service providers in Montana is available at the Ravalli County Environmental Health Department.

For more information about radon visit the Environmental Health Department office at 215 S. Fourth Street in Hamilton or call 375-6565.

NOTE: Much of the information in this article came from “Radon and You: Promoting Public Awareness of Radon in Montana’s Air and Ground Water” by Kathleen J. Miller and Michael J. Coffey (Montana Bureau of Mines and Geology 1998).

In order to help citizens understand more clearly many of the environmental health issues in Ravalli County and the role of the Environmental Health Department in addressing these issues, our department will run a series of weekly newspaper articles titled “Environmental Health Talk.”

In this ongoing series we hope to help raise the community’s awareness of issues such as air and water quality and give readers useful tips on topics like recycling, collecting and disposing of hazardous materials and maintaining septic systems, just to name a few. To this end, we welcome public comment. If there’s an environmental health issue you’d like us to address, write call or email the department: RCEH, c/o “EnviroHealth Talk,” 215 South 4th St, Suite D, Hamilton MT 59840. Phone: 375-6571. Email: rdaniel@ravallicounty.mt.gov