

# 2014 Public Outcomes Report

## RADON AND CANCER PREVENTION

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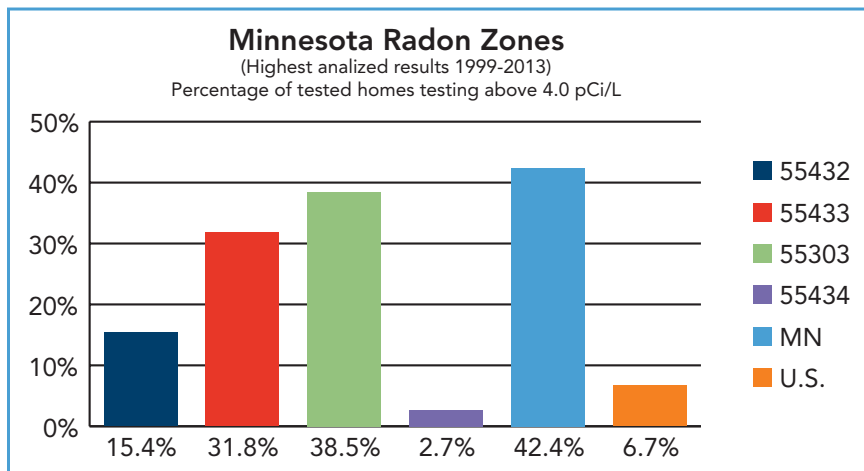
When a person inhales, has long-term exposure to or has high levels of exposure to radon, its radioactive particles can damage cells in the lung and that can lead to lung cancer. Although smoking is still the most common cause of lung cancer, radon is the number one leading cause of lung cancer in non-smokers. In the United States, more than 21,000 lung cancer deaths have been directly related to radon exposure.

### EXPOSURE TO RADON

Two in five homes in Minnesota have high levels of radon that can lead to health risks and 80 percent of Minnesota counties are rated high radon zones according to the Minnesota Department of Health's (MDH) Indoor Air Unit.

The Star Tribune analyzed 121,000 radon test results from 1999 to 2013 years. They created a database that allows the public to look up radon information in their zip code. To find numbers of tests, average levels, and percentage elevated by zip code go to <http://www.startribune.com/local/190270511.html>.

The following are results from this report that compare the percentage of tested homes above the 4.0 pCi/L level in the United States, Minnesota and a sample of Mercy and Unity hospital zip codes.



Radon is a radioactive gas emitted from the decay of elements found in soil and rock throughout the United States and the world. Radon gas can seep up from the ground into the air and into water sources. It is colorless and odorless. The highest levels of radon are usually found where it can concentrate indoors such as homes, buildings, schools and other structures. It seeps into structures through cracks in floors or walls, gaps in foundations and pipes, or anywhere there is an opening between a structure, soil and rock. Higher radon exposure risks may also be found in particular occupations such as those who work in underground mines or factories where uranium is processed or where phosphate fertilizers are produced.



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## PREVENTING CANCER CAUSED BY RADON EXPOSURE

Radon is present in the air and soil which makes it impossible to avoid completely, but there are ways to reduce risks to high or prolonged exposure to radon.

When detected in homes, the gases are generally found in the lowest level or the closest source to the soil or rock. Levels of radon gases are measured in picocuries per liter or pCi/L. According to the MDH's Indoor Air Unit, radon testing showing levels of 4 pCi/L can be compared to the health dangers of smoking a quarter of a pack of cigarettes per day or to having 400 x-rays per year. All of these are high risk exposures that can lead to lung cancer. Detecting these high levels of radon exposure and mitigation (or modification) of a home to divert these gases can lower radon exposure risks and the risks for lung cancer.

To determine recommendations for the levels found in homes and for recommendations for mitigation options, call the MDH Indoor Air Unit at 651-201-4601 or 800-798-9050 or visit their website: [health.state.mn.us/radon](http://health.state.mn.us/radon). Test kits can be obtained from many county health departments and from online vendors, which can also be found on the MDH website.

## RADON COMMUNITY WORK AT THE VIRGINIA PIPER CANCER INSTITUTE – MERCY AND UNITY HOSPITALS

The Virginia Piper Cancer Institutes of Mercy and Unity hospitals collaborated with Stephen Mann, MD, from Minnesota Oncology, and Daniel Tranter, from MDH's Indoor Air Unit, to offer a free community forum on radon and other environmental risks for lung cancer. One hundred fifteen interested community members attended the forum offered on Sept. 25, 2014 at Unity Hospital. Although the forum was geared toward educating participants on all known environmental risks for lung cancer, the primary focus and community interest was on radon exposure. Tranter's radon presentation informed participants on what radon is, how it is harmful, how community members may be exposed to radon, how to detect exposure and how to mitigate homes and buildings from radon if high levels are found. The goal of the forum was to educate community members on ways to prevent lung cancer related to radon exposure and other environmental factors. Each participant was offered education and a free radon kit (and testing) that could empower them to reduce their risks and the risks of their family members from lung cancer.

In addition to the community forum, employees from the Virginia Piper Cancer Institute at Mercy and Unity hospitals were offered free radon kits, testing and a brochure on radon and mitigation. In total, more than 150 kits were distributed to community members and employees, including free testing through Air Chek, Inc.

## RADON RESULTS BASED ON COMMUNITY AND EMPLOYEE RADON EDUCATION

More than 150 free radon kits and consequent testing were offered by the MDH Indoor Air Unit through Mercy and Unity hospitals' community forum and employee education. Each of these kits had a tracking number to determine if the kits were used and to track their results. To date, only five of the more than 150 kits have been sent in for testing.

Radon Testing Outcomes	
Radon Community Forum – Sept. 25, 2014	
Total attendees	115
Total distributed radon kits	123
Total radon kits sent in for testing as of 10/27/14	2
Mercy and Unity employees – distributed through September 2014	
Total employees	40
Total distributed radon kits	37
<b>Total radon kits sent in for testing as of 10/27/14</b>	<b>3</b>

Through an employee survey given to all employees who received a radon kit, reasons for not following through with testing included; fear of results, financial challenges of mitigation, high levels potentially affecting home sales, lost kits and forgetting to test. The most common feedback, however, was that recipients did not yet follow-through with testing because of the summer/spring weather. Many are waiting to do the testing when the weather gets cold because the test requires that windows remain closed during testing.

In the last year, the MDH's Indoor Air Unit has provided another 400 additional free radon kits to interested community members in Anoka County. The number of those kits sent in for testing is not available.

## CONCLUSION

Radon is the number one cause of lung cancer for non-smokers in the United States. In 2013, smoking remained the leading cause of lung cancer with 85 percent of all cases being found in current or former smokers. Radon exposure contributes to lung cancer in both smokers and non-smokers, with an estimated 21,000 lung cancer deaths per year in the U.S. being attributed to radon exposure.

Radon education, testing and mitigation for high or prolonged levels of radon exposure can contribute in preventing lung cancer.

For more information on radon and radon-related cancers, please visit the online resources from the American Cancer Society, the National Cancer Institute or the Minnesota Department of Health's Indoor Air Unit at [health.state.mn.us/radon](http://health.state.mn.us/radon).