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HEADLINE: Radon gas unwelcome, easy to evict

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Radioactive gas occurs naturally, can increase cancer risk

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The developer in South Salem was incredulous.

He had to certify to the buyers of a new home that the structure was free of termites and the radioactive gas radon. There were no insects, but tests showed the radon level was 50 times the safety limit set by the U.S. Environmental Protection Agency.

"The builder had done some blasting when he put in the foundation and must have hit a vein of uranium, which led to the high levels of radon in the home," said Kurt Dorfi, head of the Elmsford-based Radon Mitigation Corp. of America. "The builder couldn't believe the readings. He had it tested several times before he would accept it."

Radon and its effects on the body are considered the nation's second-leading cause of lung cancer behind smoking, and the American Cancer Society estimates radon is responsible for as many as 22,000 deaths annually. It is an odorless, colorless and seemingly ubiquitous gas that rises from uranium deposits in the earth and is found nearly everywhere in varying concentrations. It becomes a problem when it builds up inside homes and is constantly inhaled over time.

The EPA believes long-term exposure to very low levels of radon would cause the same amount of lung damage as smoking half a pack of cigarettes daily or taking 200 chest X-rays per year.

As homes become more energy efficient and airtight, there is a greater chance that radon will build up, particularly in basements. But the gas is easy to detect and remove, so it is not necessary to be overly worried about its presence or consider abandoning a home with radon.

Hardware stores sell radon detection kits for less than \$20, and removing the gas is a fairly simple procedure, usually costing between \$1,000 and \$1,500. Dorfi said the condition is easily corrected by creating low-pressure zones under a building's foundation and using pipes to channel the gas above the roof, where it is vented.

The radon levels in the South Salem home were well above those in most houses tested in the Lower Hudson River Valley region. The state Department of Health believes the gas exists in many homes in Westchester, Rockland and Putnam counties, but at levels generally two or three times the EPA's safety limit. The department's projections are based on analysis of the soil in the Lower Hudson Valley and an examination of its underground geological formations.

It is common for people to learn of the presence of radon when they are buying or selling a home. Robert Simon, a 46-year-old physician, was planning to move from Manhattan to Larchmont last summer when he decided to have the house tested for radon. The test came back just above the EPA limit, he said.

"It was almost a deal breaker," said Simon, who is married with children. "We felt the owner should take care of the problem, but the real estate agents split the difference. It was a big issue that came up during the negotiations. Someone had to take care of that problem."

"We bought the house," he said, and the radon mitigation is to take place this month.

Though the existence of radon has long been known, it also had long been thought to be a carcinogenic danger only to uranium miners. Its ability to seep in and build up in homes was discovered accidentally in 1984 when Stanley Watras, an engineer at the Limerick nuclear power station in Pottstown, Pa., repeatedly set off radiation detectors as he entered the plant. An investigation by the Nuclear Regulatory Commission traced the contamination to Watras' home, where they found radon levels at 675 times what would later become the EPA's safety limit. Watras' house was built over a thick vein of uranium and the radon was seeping into the building through cracks in the foundation.

Nidal Azzam, an EPA health physicist, said radon-related cancer isn't triggered by the gas itself. "The radon decays away into other radioactive material (in the lungs)" Azzam said. "At the end of the decay process, you end up with lead, and lead is carcinogenic."

Radon is considered a contributing factor to all forms of lung cancer by increasing the odds of developing the disease. Jay Lubin, a cancer researcher at the National Cancer Institute in Maryland, said radon could double the potency of carcinogens such as tobacco, which increases a person's risk of cancer by a factor of 20.

"So the real effect is greater on smokers than nonsmokers because their background rate is higher to begin with," Lubin said.

The gas has been directly associated with one type of lung disease, small cell lung cancer, said Lyall Gorenstein, chief of thoracic surgery at Nyack Hospital. That is a type of cancer that tends to spread from one lung to another, rather than from the lungs to other parts of the body.

"We are seeing more and more of this form of cancer," said Gorenstein, "and it occurs more often in women and nonsmokers. It is increasing in frequency when other forms of lung cancer are staying about the same rate. It could be triggered by radon, which may be why it is increasing."

Radon and its dangers should be understood, but not feared. "You can't eliminate it from your environment," Lubin said. "The best you can do is lower the level in your home."

For more information on radon

New York State Department of Health

The agency provides information and a map showing the percentage of homes with unsafe levels of radon in each county.

www.health.state.ny.us/nysdoh/radon/radonhom.htm

U.S. Environmental Protection Agency

EPA Radon Hotline

800-55RADON (800-557-2366)

www.epa.gov/radon/

National Cancer Institute, National Institutes of Health

cis.nci.nih.gov/fact/3_52.htm

National Hispanic Family Health Helpline

866-783-2645

www.hispanichealth.org