

IS THERE AN

**ODORLESS,
COLORLESS,
AND DEADLY GAS
LURKING IN YOUR HOME?**



The Household Hazard You Don't Know You Have.

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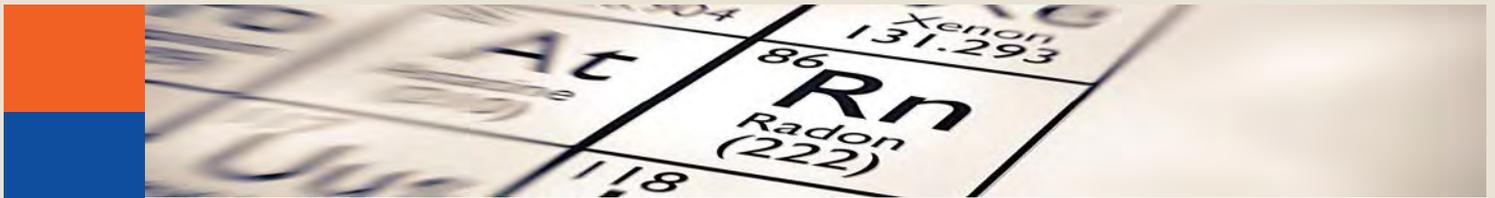
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WHAT IS RADON?

Most of us have never heard of radon, but **1 out of 15 homes** are affected by the gas.

Radon is a class-A carcinogen, falling into the same category as arsenic, asbestos, formaldehyde and tobacco smoke. A carcinogen is an element known to cause cancer in humans. It's obvious that no one should breathe this harmful gas, but if you've never heard of it, how do you know to remove it?

Dictionary.com defines radon as *"a chemically inert, radioactive gaseous element produced by the decay of radium: emissions produced by outgassing of rock, brick, etc. are a health hazard."*

Radon was discovered in 1899 by Ernest Rutherford and Robert B. Owens, becoming the fifth known radioactive element. Despite its late discovery, the health effects of radon were documented as early as 1530. Paracelsus, a Swiss physician, alchemist and astrologer during the German Renaissance, wrote of the *mala metallorum* or wasting disease of miners. Georgius Agricola, a German scholar and scientist who is famous for his book on mining, *De Re Metallica*, published in 1556, described ways of ventilating mines to prevent *mala metallorum*. In 1879, the disease was recognized as lung cancer.

Outside of the mines, radon wasn't documented as an indoor air pollutant until the 1950s, and research into the sources and health effects began in the 1970s. This research culminated in 2005 when U.S. Surgeon General, Richard H. Carmona issued a Health Advisory that warned of the health risks from radon inside the home and urged Americans to perform tests.

Carmona wrote, "Indoor radon is the second-leading cause of lung cancer in the United States and breathing it over prolonged periods can present a significant health risk to families all over the country. It's important to know that this threat is completely preventable. Radon can be detected with a simple test and fixed through well-established venting techniques."



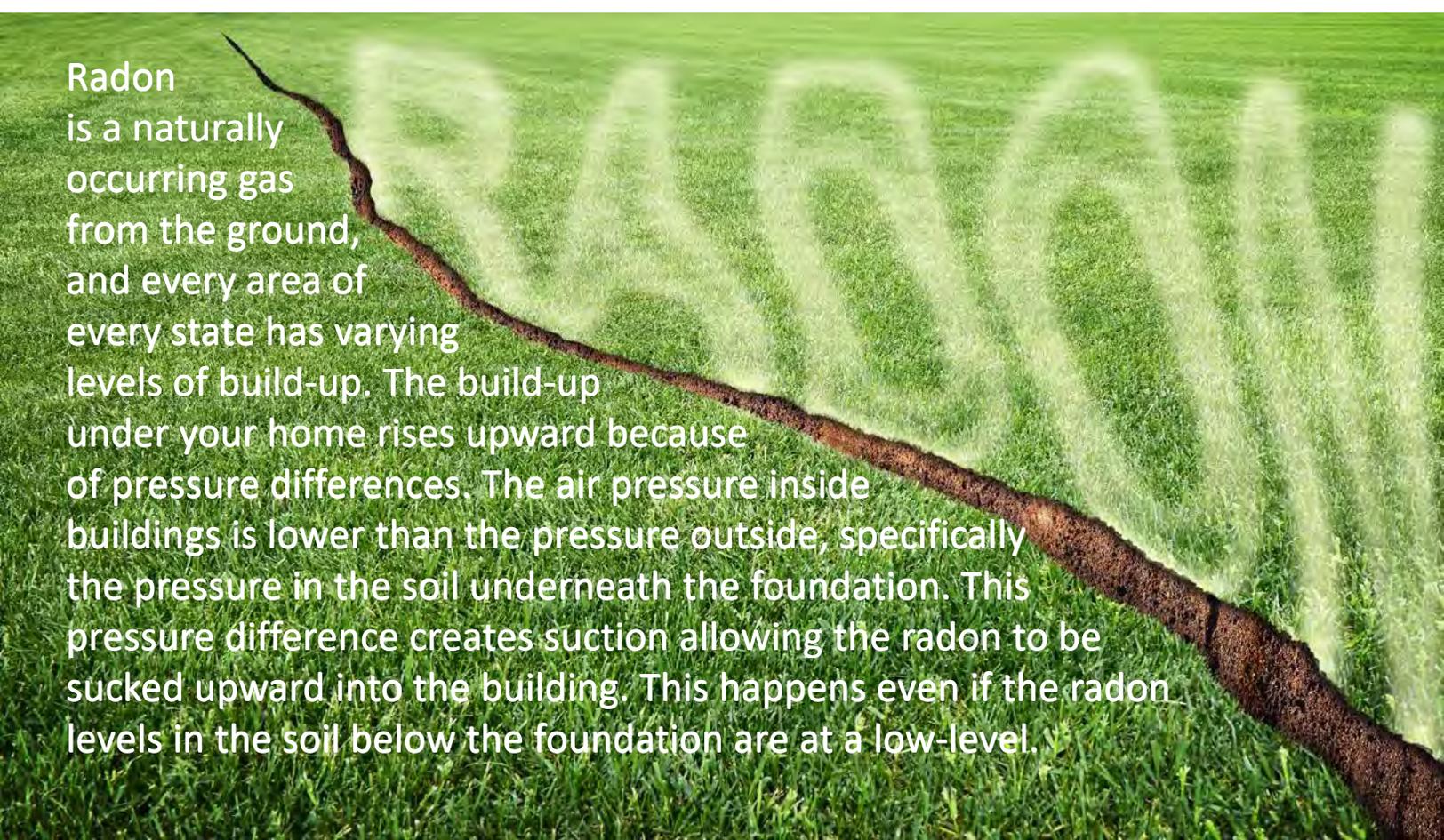
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MOST COMMON PLACES RADON IS FOUND

Any home or building can have a radon problem, even new constructions and those without basements.

Some of the common ways radon comes into the home include:

- The soil, rock, and stone under your foundation
- Groundwater and well water
- Cracks in your floors and walls
- Building materials



Radon is a naturally occurring gas from the ground, and every area of every state has varying levels of build-up. The build-up under your home rises upward because of pressure differences. The air pressure inside buildings is lower than the pressure outside, specifically the pressure in the soil underneath the foundation. This pressure difference creates suction allowing the radon to be sucked upward into the building. This happens even if the radon levels in the soil below the foundation are at a low-level.



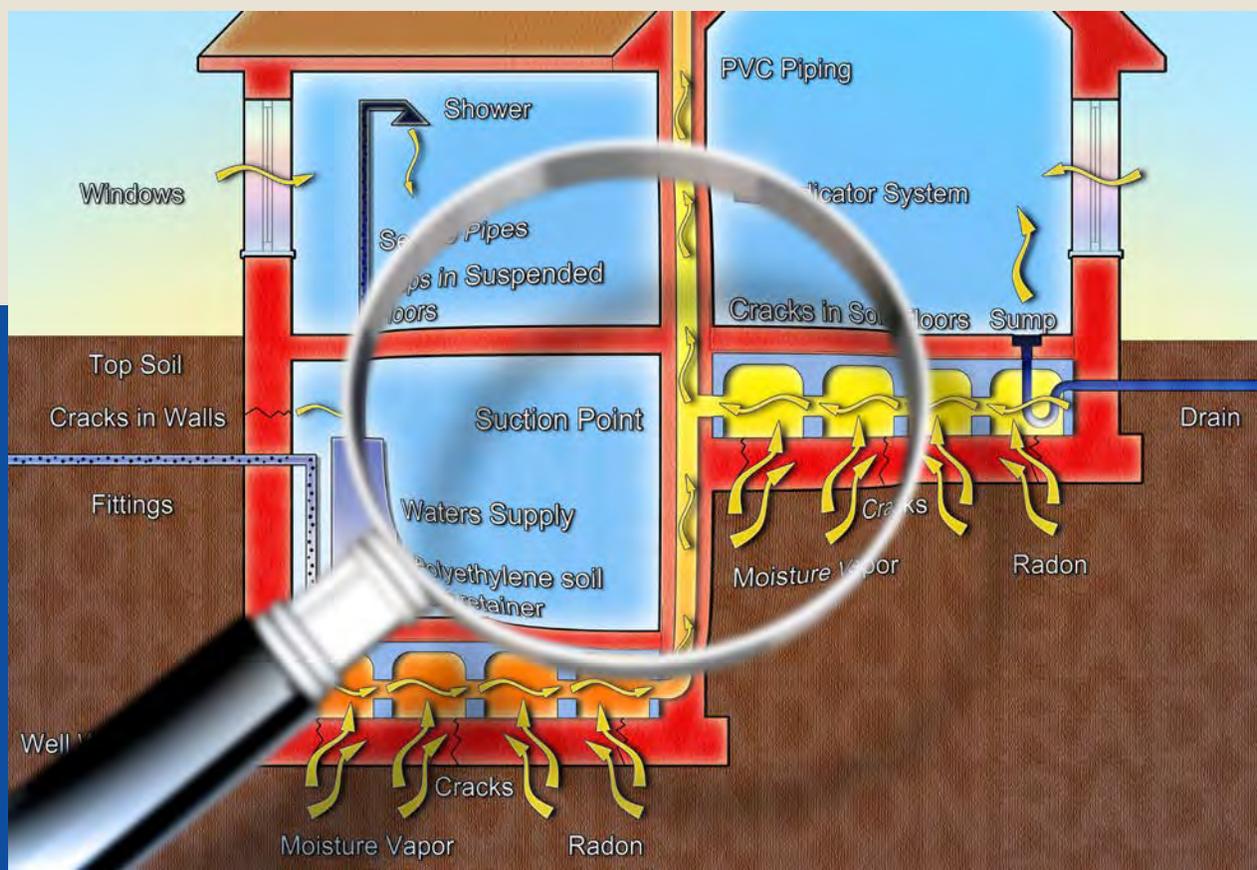
Radon can also build up inside wells. The gas is released into the air every time you pour a drink, wash the dishes or shower. While a problem in well water, radon is not a concern if your source of water is lakes and rivers as the radon escapes into the air before entering your home.

Only a small number of homes have a radon build-up from building materials, and in those that do, the building materials are typically not the only way radon is entering. If you're building a new home, request that the contractors use radon-resistant techniques. Using these techniques at the time of construction makes it easier and cheaper to reduce levels even further in the future, should there be a problem after the build.

WHEN IS RADON DANGEROUS? SAFE LEVEL VS. UNSAFE LEVEL

26,000 people die every year from radon exposure, so knowing if you have elevated levels is vital to your health.

Measuring involves placing a device inside the home in the lowest level of living space. Radon levels in the air are constantly fluctuating, and it is recommended to keep windows closed and limit the opening of doors during the test. A typical short-term test lasts between 48 and 96 hours. There are also long-term tests, which last from 91 days to one year.



Radon is measured in picocuries, written pCi/L for 'picocuries per liter of air.' Radon is a radioactive element, and picocuries are a common unit for measuring radioactivity.

The World Health Organization (WHO) and the U.S. Environmental Protection Agency (EPA) have recommended action levels of picocuries for radon.



This means that when you receive your test results after measuring, you will know your home's pCi/L. If an occupant's long-term exposure will average 4 picocuries per liter (pCi/L) or higher, it is strongly recommended that you have a mitigation system installed. Please note that the action level is not a safe level. There are no 'safe' levels of radon gas.

Radon Level 4.0 pCi/L	<p>Equals 200 chest x-rays per year OR 8 cigarettes per day. EPA Recommends: Fix your home.</p> 
Radon Level 8.0 pCi/L	<p>Equals 400 chest x-rays per year OR 16 cigarettes per day. EPA Recommends: Fix your home.</p>
Radon Level 10.0 pCi/L	<p>Equals 500 chest x-rays per year OR 20 cigarettes per day. One full pack. EPA Recommends: Fix your home.</p> 
Radon Level 15.0 pCi/L	<p>Equals 750 chest x-rays per year OR 30 cigarettes per day. EPA Recommends: Fix your home.</p>
Radon Level 20.0 pCi/L	<p>Equals 1,000 chest x-rays per year OR 40 cigarettes per day. EPA Recommends: Fix your home.</p> 
Radon Level 40.0 pCi/L	<p>Equals 2,000 chest x-rays per year OR 80 cigarettes per day. EPA Recommends: Fix your home.</p>
Radon Level 100.0 pCi/L	<p>Equals 5,000 chest x-rays per year OR 200 cigarettes per day. EPA Recommends: Fix your home.</p>

HEALTH EFFECTS OF RADON EXPOSURE?

One person **dies** from radon exposure every **25 minutes**
= **26,000 people a year.**

The EPA reports that radon is the number one cause of lung cancer in non-smokers, and is the second leading cause in all patients. Unfortunately, only 15% of lung cancer patients live longer than five years after diagnosis. There are no safe levels of radon, so lowering the radon level in your home reduces your risk.



Radon gas is radioactive, and the particles become trapped in your lungs every time you inhale inside a building with radon. The particles damage lung tissue and over time may lead to lung cancer, though not everyone who is exposed to elevated radon levels becomes ill. The time between exposure and illness varies widely and is greatly affected by the number of picocuries you are subject to. Measuring and mitigating the levels in your home is the best chance at saving your health.

Radon exposure itself has no symptoms, so there are no warning signs. But as lung cancer is the only cancer proven to be associated with radon, you should lookout for those symptoms, which will mostly be respiratory.

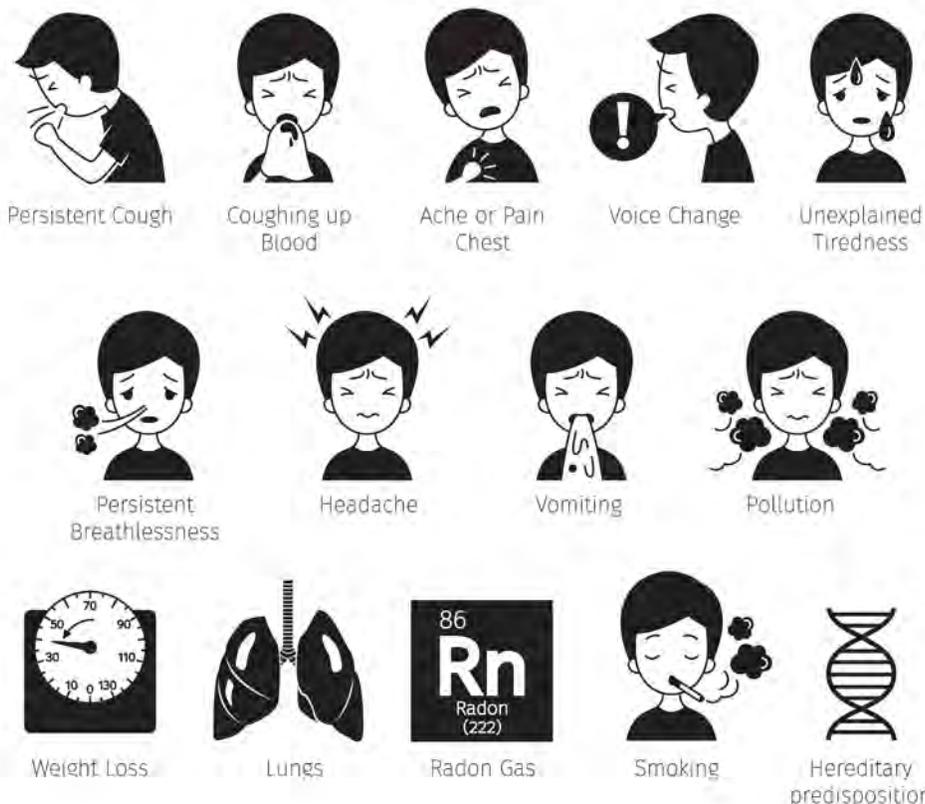
What are the symptoms of lung cancer?

- A persistent cough that doesn't get better
- Difficulty breathing
- Chest pains
- Coughing blood
- Wheezing
- Hoarseness
- Recurring infections such as bronchitis and pneumonia

If you are a non-smoker and are experiencing two or more of these symptoms, it is time to see your doctor and have your home tested for radon exposure. Smokers should also be aware of these symptoms, as people who smoke are at a greater risk of lung cancer when they are exposed to radon.

LUNG CANCER

Bear in mind that the symptoms above are also symptoms of other diseases, and this list is not a definitive conclusion that you have lung cancer. Additionally, up to 25% of those diagnosed with lung cancer have no symptoms.



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MOLD



MOISTURE



AIR DUCT



WATER



RADON

TO FIND OUT IF RADON GAS IS A PROBLEM IN YOUR HOME OR OFFICE, YOU *MUST* CONDUCT A RADON TEST!

Getting your home tested is simple, just give
us a call to schedule a professional radon test!

877-957-5670



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