

## About OARP

OARP, founded in 1997, is an affiliate chapter of the American Association of Radon Scientists and Technologists (AARST).

The Association is dedicated to excellence in the radon industry through professional education, expansion of industry markets, knowledge sharing, and raising public awareness through information and advocacy.



**Dedicated To Excellence**  
in the radon industry through:



**Professional**  
education



**Expansion of**  
industry markets



**Knowledge**  
sharing



**Public**  
Awareness



## How Can I Protect Myself?

Have your home, school  
and business tested.

Find a tester and/or mitigator  
near you at [www.theoarp.com](http://www.theoarp.com)

## Ohio Association of Radon Professionals

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**OHIO ASSOCIATION OF**  
**—RADON PROFESSIONALS—**

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**RADON**  
**What You**  
**Need To Know**

*Dedicated to Excellence in the Radon Industry*



## What Is Radon?

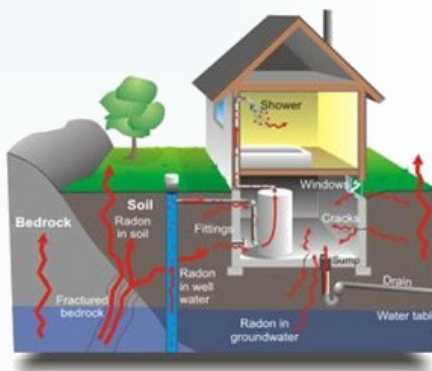
Radon is an odorless, colorless, chemically inert but radioactive gas that occurs naturally all across the U.S.

It is a decay product of uranium and radium present in bedrock, and its own decay products are also radioactive.

Radon is known to be a human carcinogen.

## How Does Radon Enter Your Home?

Because radon is a gas, radon enters buildings many ways. It comes in through joints, cracks, in concrete walls or floors, openings in drains or sump pits, and gaps in plumbing passageways – it can be found even in well water or natural gas (shale gas).

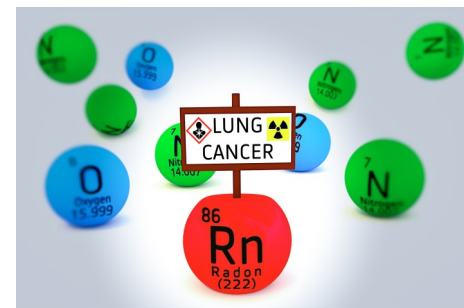


The more sealed up your windows and doors are in your home, business or school (as with today's energy efficient constructions), the more radon becomes concentrated in the inside air.

## How Can Radon Harm You?

When radon decays, its "RDPs" or radon decay products can become attached to dust in the air you breathe. These RDPs then decay in your lungs, releasing alpha radiation damaging your cells, increasing the risk of lung cancer.

EPA estimates 21,000 lung cancer deaths each year in the U.S. are radon-related. Exposure to radon is the second leading cause of lung cancer after smoking.





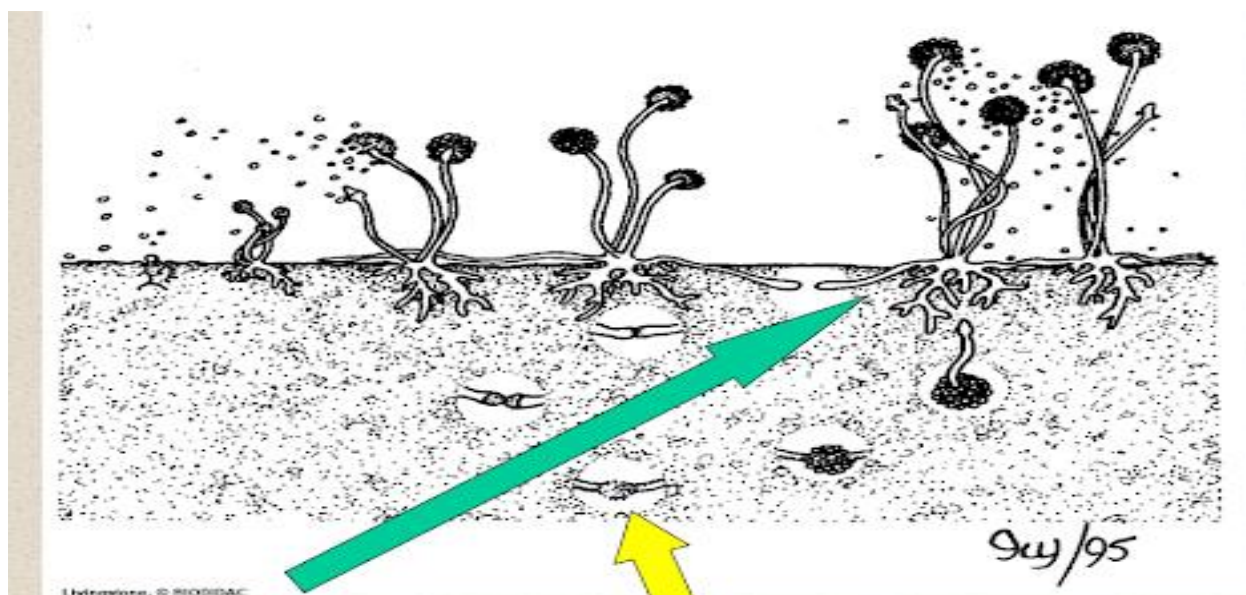
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Always do the next right thing

"PROVIDING QUALITY SERVICE SINCE 1987"

## Mold Hyphae explained

If you don't scrub and clean the surface first, and all you do is spray mold killer, you do not get to the legs of the mold called hyphae and don't kill the source.



**Rhizoids** = root-like hyphae

The rhizoids meet underground and mating occurs between hyphae of different molds (**SEXUAL REPRODUCTION**)





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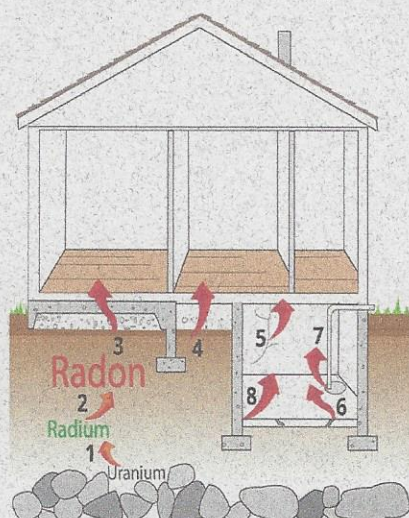
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## Radon Gas

James Cancer Center says: under 2.5 pCi/L

World Health Organization says: under 2.7 pCi/L

State of Ohio says: under 4.0 pCi/L



0.4pCi/L U.S.

Average outdoors

1.3pCi/L U.S.

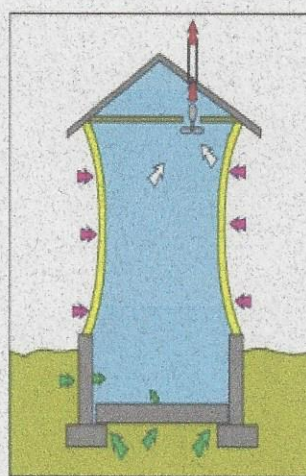
Average indoors

Uranium and

Radium are

Particles and

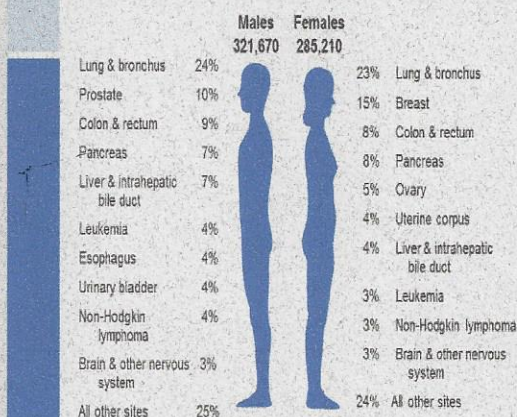
Radon is a gas.



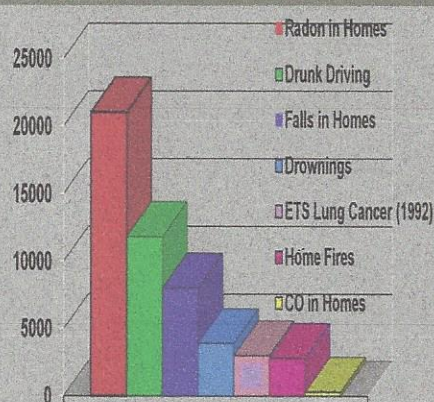
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Radon Entry is due to differences in indoor/outdoor temperatures, rain, wind, and falling barometric pressure. These factors create pressure differences that pulls Radon in like a giant sweeper.

Estimated Cancer Deaths in the US in 2019






Radon Compared to Other Risks





# Know Your Number

Understand your risk from elevated radon exposure

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

- Average US indoor air radon level = 1.3 pCi/L (pico curies per liter of air).
- If you smoke and your radon levels are elevated, your risk for lung cancer is especially high.
- Smaller lungs and faster breathing rates may result in greater radon exposure in children relative to adults.



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Ohio Department of Health

Indoor Radon Program

Radon Information Line: 800-523-4439

www.odh.ohio.gov

**What's in a number?** When it comes to understanding your risk from radon exposure, your number means a lot.

Radon is measured in pico curies per liter of air (pCi/L). **4.0 pCi/L** is the level established by the US EPA for action — any building testing above this level should be fixed.

Nationwide, 7% of all buildings contain elevated radon levels. In Ohio, **47% of all buildings** tested contain elevated levels — 6 times greater than the national average. In some areas of the state, **more than 72%** of buildings contain elevated radon levels.

The only way to know if a home or other building contains elevated radon levels is to have it tested. Where a problem exists, steps should be taken to correct the issue through proven mitigation techniques.

## Facts About Radon

Radon is a **naturally-occurring** radioactive gas. Radon enters a home through cracks or openings in the foundation, slab, or sump pit. When this occurs, radon can **accumulate in dangerous levels**.

Radon is a Class A Human Carcinogen — the US EPA and Surgeon General estimate radon is responsible for more than 25,000 annual deaths, making it the leading cause of lung cancer among non-smokers.

## Information cited from the following sources:

Ohio Radon Information System, 2013 homes database, <http://www.eng.utoledo.edu/aprg/radon>

U.S. Department of Health and Human Services, Public Health Service, ABDR. (1990). Toxicological profile for radon. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

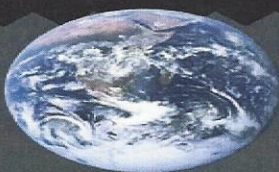
US Environmental Protection Agency. Indoor Environments Division. A Citizens Guide to Radon. EPA 402-K-09-001, January 2009.

**The Ohio Association of Radon Professionals** is dedicated to preventing radon-induced lung cancer and saving lives through increasing consumer awareness, raising industry professionalism, and supporting effective radon policy.



# RADON FACTS

## WHAT YOU NEED TO KNOW



### WHAT IS RADON?

Radon is a **cancer-causing radioactive gas** that you cannot smell, taste or see. Radon forms naturally when uranium, thorium, or radium, radioactive metals, breaks down in rocks, soil and groundwater.

### HOW DOES RADON ENTER YOUR HOME?

- Cracks in solid floors and walls
- Construction joints
- Gaps in suspended floors
- Cavities inside walls
- The water supply



### WHAT ARE THE RISKS?

**Radon is the number one cause of lung cancer among non-smokers, according to EPA estimates.**

Overall, radon is the second leading cause of lung cancer. Radon is responsible for about **21,000 lung cancer deaths** every year. About 2,900 of these deaths occur among people who have never smoked.

### RADON IN SOIL

Radon gets into the indoor air primarily through pores and cracks in the soil under homes and other buildings. Usually, the air pressure in homes and buildings is lower than the pressure outside in the soil around or underneath the foundation. The pressure difference will create suction. Radon will **come through cracks** due to that suction (even at low levels).

### HAVE YOUR HOUSE TESTED

Having your home tested is **the only effective way** to determine whether you and your family are exposed to high levels of radon.



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