

**Welcome
to the
Keep Boone County Healthy**

A blue starburst graphic with multiple points, containing the word RADON in large, bold, black letters with a white outline.

RADON

H.O.M.E. Seminar

Special Thanks to:

RSVP Volunteers!



And to our Keep Boone County Healthy Partners:



Keep Boone County Healthy Radon Seminar presented by:

- **Mike Salati Sr.**
 - Boone County Sanitarian
 - Code Enforcement Officer

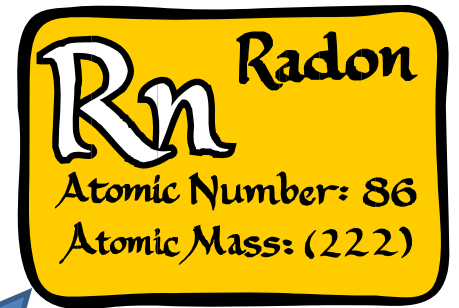
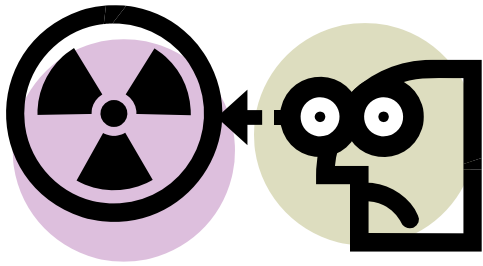


- For further information visit the EPA website:

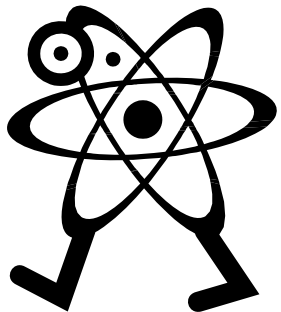
<http://epa.gov/iaq/radon/>

The H.O.M.E. Program is about:

- **H** – Home (Where You live)
- **O** – Owner (What You have)
- **M** – Maintenance (What You can do)
- **E** – Education (How to do it)



RADON



Lets Make A Perspective



- Would you take a **airplane** flight if
 - You had a **26 %** chance of arriving safely?

- Would you use your **microwave** if
 - 3 out of 4 emitted enough radiation to cause cancer

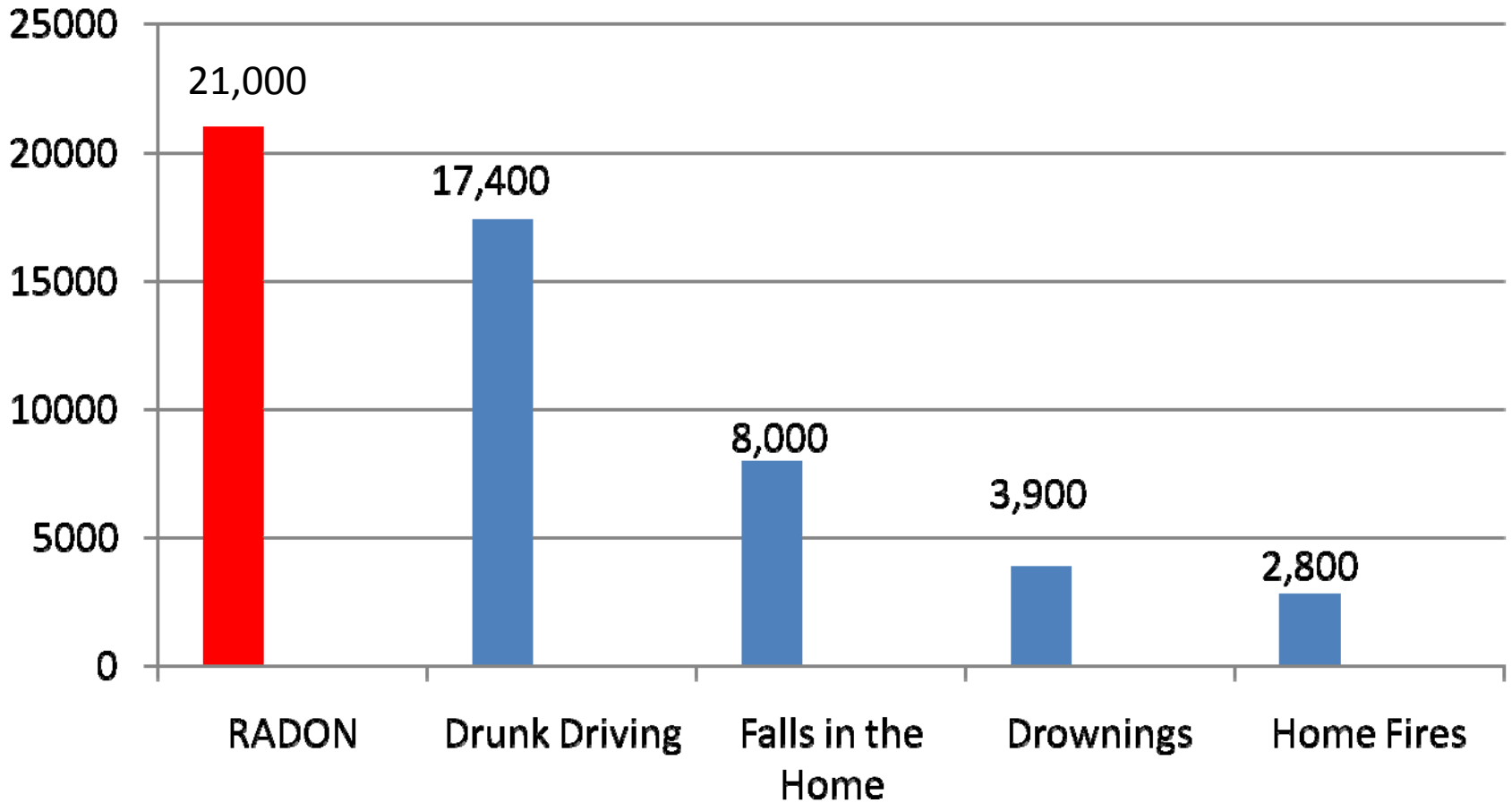


WHY DO WE NEED TO HEAR THIS?

- 74% of Homes in Iowa have elevated levels
- All 99 counties are designated high risk
- More than 20,000 deaths per year are attributed to Radon
- Radon is 2nd leading cause of lung cancer

**SURGEON GENERAL'S WARNING:
Radon causes lung cancer.**

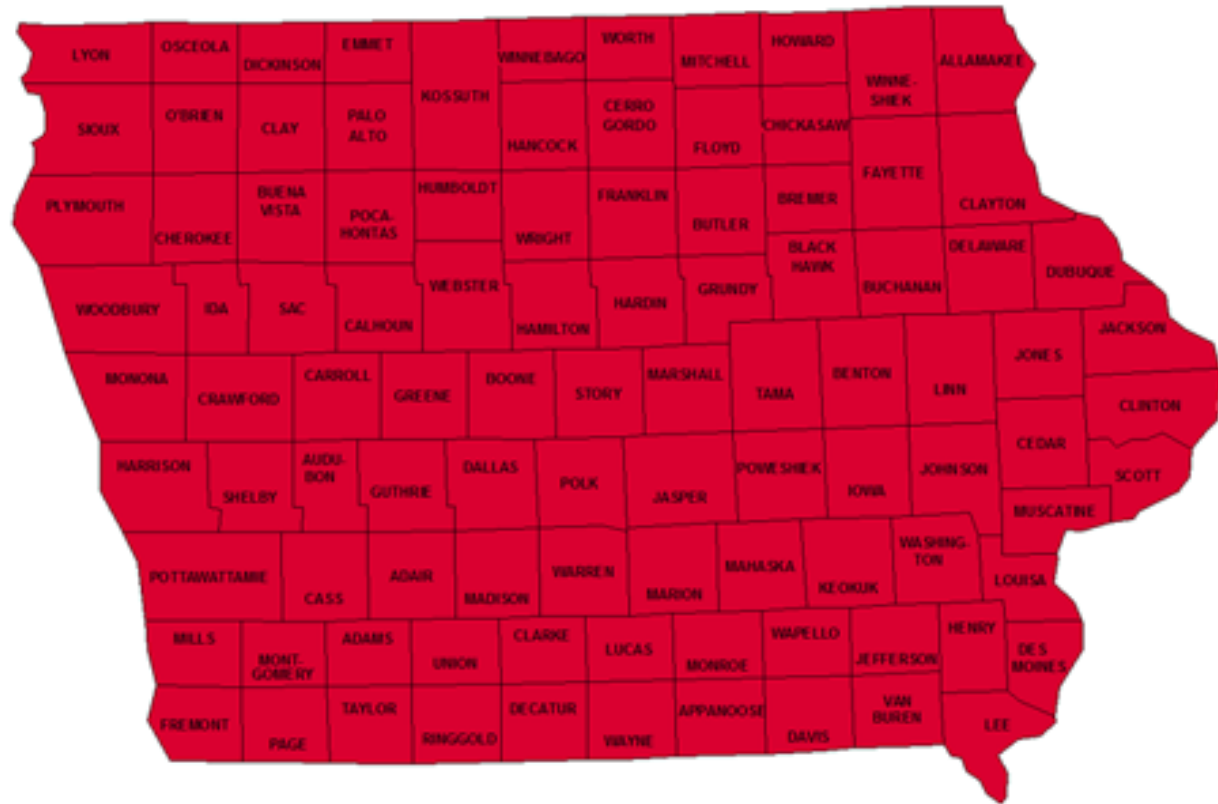
of Deaths Per Year



OK – So What is Radon?

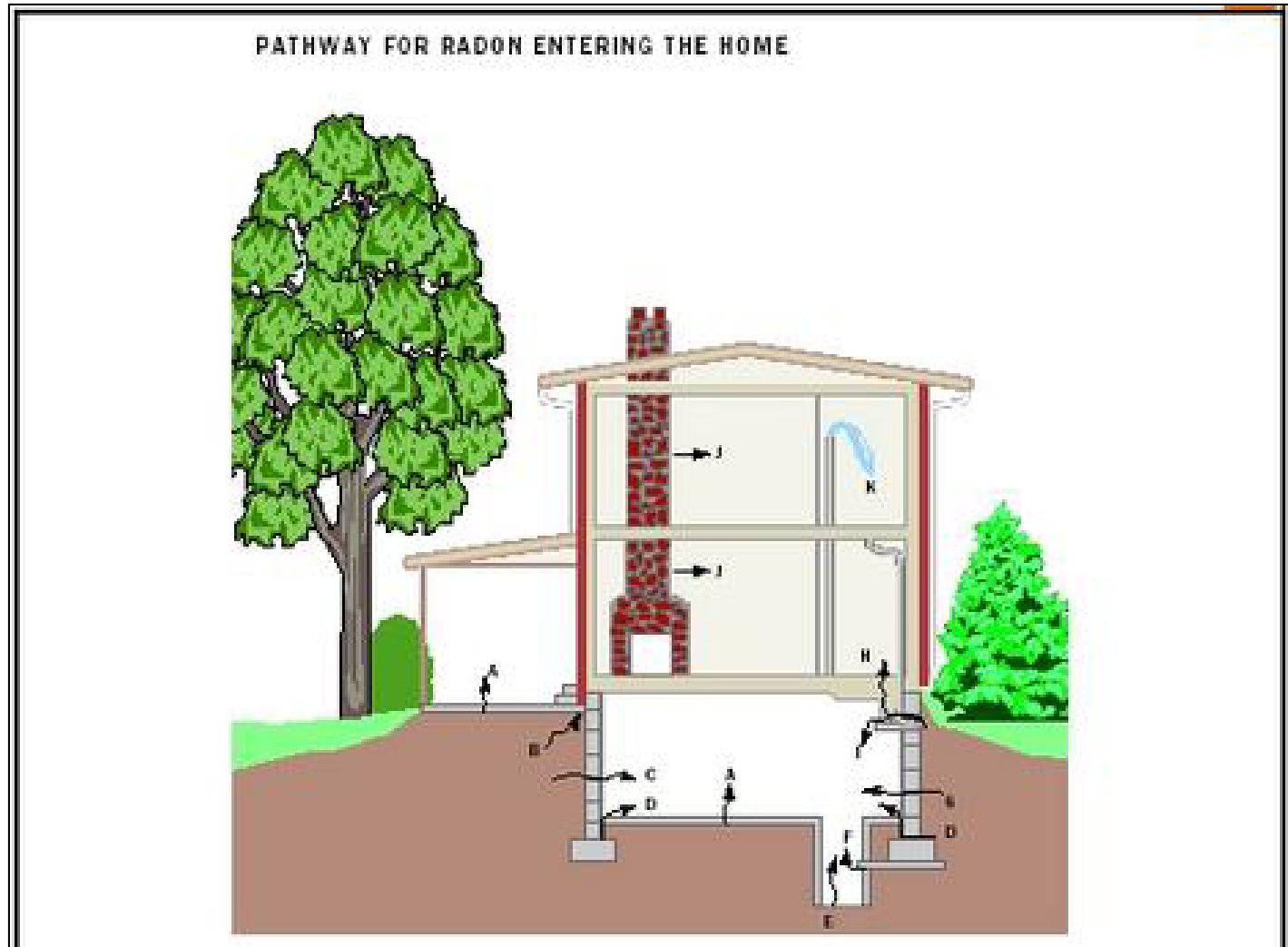
- Radon is a *colorless, odorless, tasteless radioactive* gas
- Radon **occurs naturally** in the ground
- Radon can accumulate to **dangerous levels** inside buildings
- Can be a problem in **any** home, school, or building across the country

Is My Neighborhood at Risk? YES!



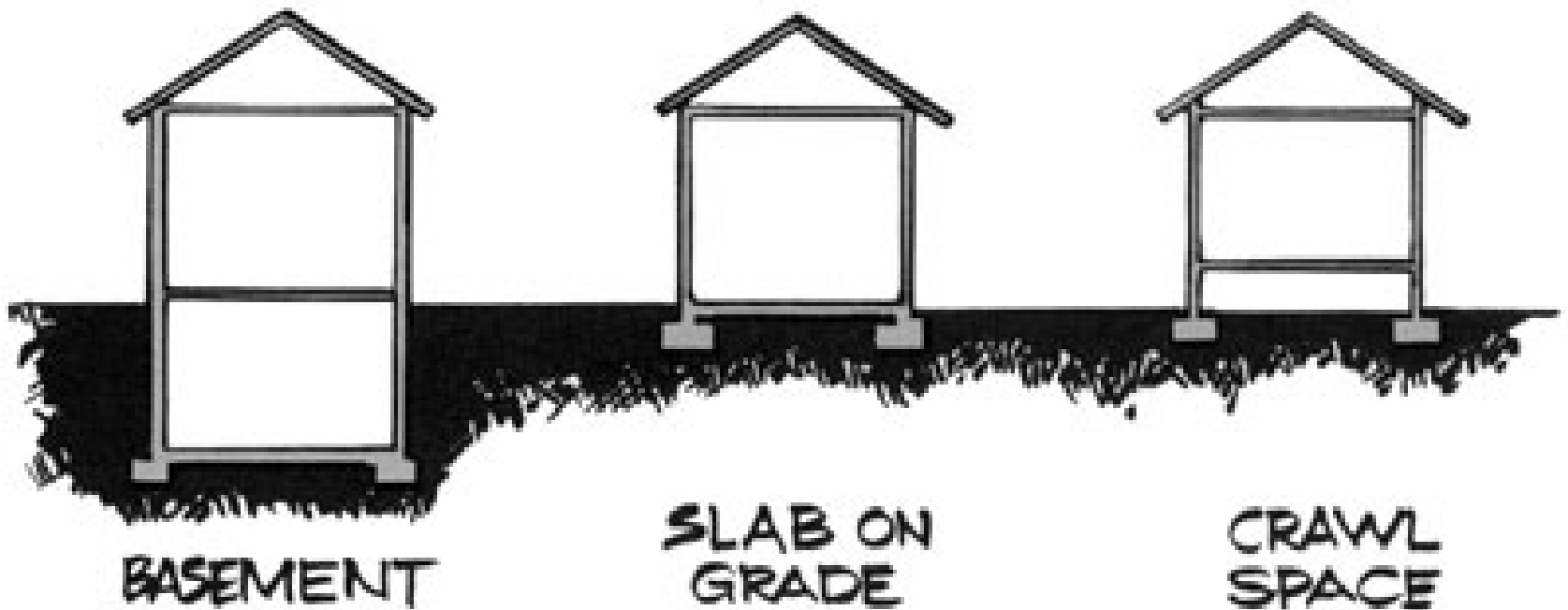
All of 99 counties are at risk of elevated levels.

How Could Radon Enter My Home?



But I Don't Have a Basement...

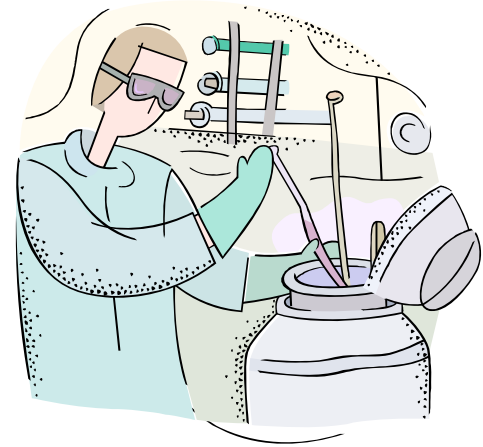
- **ANY** building in **contact** with the ground can have elevated radon levels.



So What Should I Do?

- **1) Test your House**

- Testing is INEXPENSIVE
- Testing is EASY



- **2) Fix it if you find elevated levels**



- Radon can be reduced
- Costs average \$800 - \$2500

Tell Me About Testing

- Short Term Test Kits
(Homeowner Use)

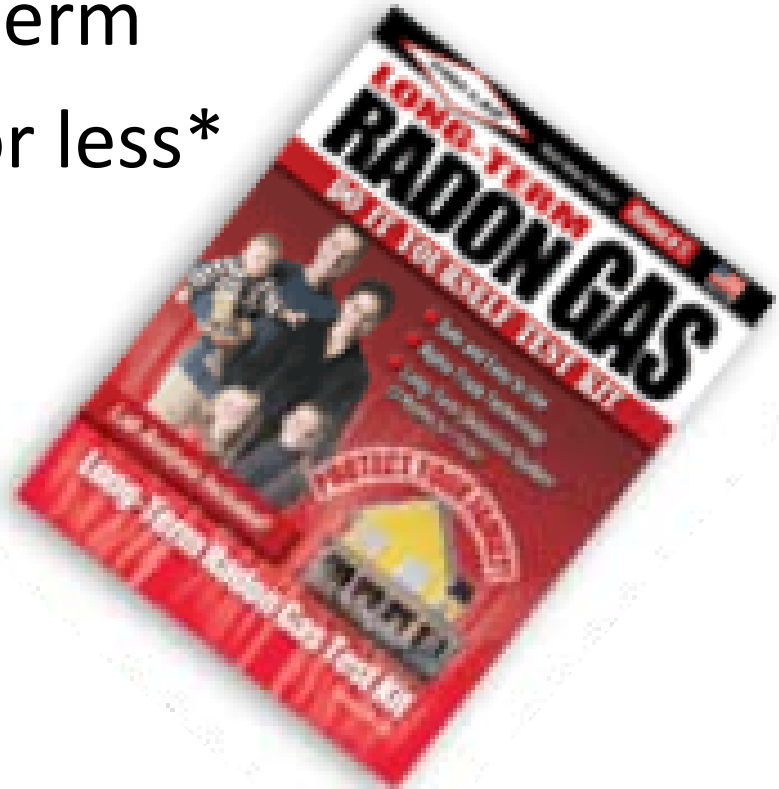
- 3-7 day duration
- Available at Hardware stores
- Also at Health and Sanitation Department
- Usually cost less than \$25



Tell Me About Testing

- **Long Term Test Kits**
 - 90 days to 1 year duration
 - Recommended if short term test results are 8 pCi/l or less*

- * If higher than 8 pCi/l:
 - Use 2nd short term test and
 - Average 2 test results



Professional Test Equipment



What Do The Numbers Mean?

- Radon levels are usually reported in **(pCi/L)**.
- **Pico Curie per liter** : A unit of radioactivity corresponding to one decay every 27 seconds in a volume of one liter, or 0.037 decays per second in every liter of air.

The Recommended Radon Action Level is **4**
pCi/L

What If My Levels Are High?

- If **Short Term Test** is High
 - Retest with **long term** test (Recommended)
 - OR average a **second** short term test.
- Consult with a Radon **Professional**



What Levels Have Been Found?

According to: Iowa Department of Pub. Health:

Boone County:

Of Tests Conducted (1990 – 2007): **783**

Lowest Test Result: **0.1**

Highest Test Result: **954.9**

Average test Result **9.2**



Average is over 2X the recommended action level!

Are Radon Contractors Regulated?

• YES!



<http://www.idph.state.ia.us/eh/radon.asp>

- Types of Certification/Credentials:
 - Laboratory: Organization certified to analyze radon levels of tests conducted in Iowa.
 - Mitigator: Person trained and credentialed to install radon reduction systems in Iowa.
 - Specialist: Person trained and certified to conduct radon tests in Iowa.

How Do I Fix It?

- **Hold Your Breath**

–Pro:

- No Cost
- Effective

–Con:

- Not permanent



How Do I fix It?

- Remove House

- Pro:

- Permanent
- Moderate Cost

- Con:

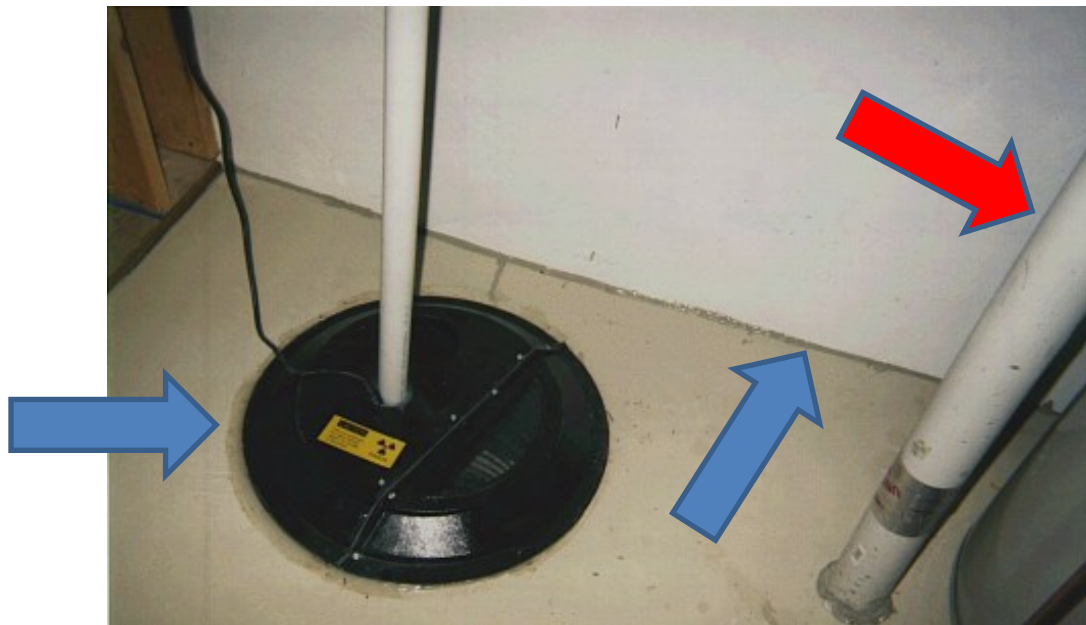
- Not very effective



JUST KIDDING !

Really - How Is Radon Reduced?

- Passive Mitigation Systems:
 - Seal cracks and openings
 - Install sub-slab vent pipe to exterior



How Is Radon Reduced?

- Active Mitigation Systems:
 - Uses powered exhaust fan
 - Actively draws air from under slab



How Is Radon Reduced?

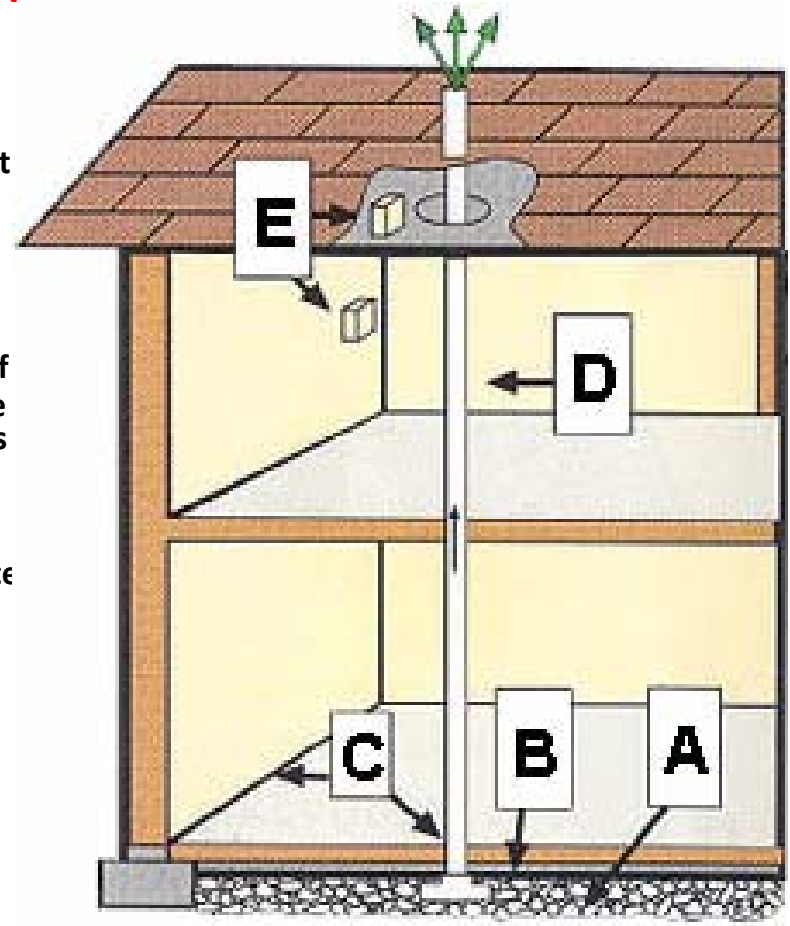
- Active Mitigation Systems:



Radon Resistant **New** Construction (RRNC)

What are Radon-resistant construction techniques?

- The techniques may vary for different foundations and site requirements, but the basic elements are:
- **A. Gas Permeable Layer** This layer is placed beneath the slab or flooring system to allow the soil gas to move freely underneath the house. In many cases, the material used is a 4-inch layer of clean gravel.
- **B. Plastic Sheetting** Plastic sheetting is placed on top of the gas permeable layer and under the slab to help prevent the soil gas from entering the home. In crawlspaces, the sheetting is placed over the crawlspace floor.
- **C. Sealing and Caulking** All openings in the concrete foundation floor are sealed to reduce soil gas entry into the home.
- **D. Vent Pipe** A 3- or 4-inch gas-tight or PVC pipe (commonly used for plumbing) runs from the gas permeable layer through the house to the roof to safely vent radon and other soil gases above the house.
- **E. Junction Box** An electrical junction box is installed in case an electric venting fan is needed later.



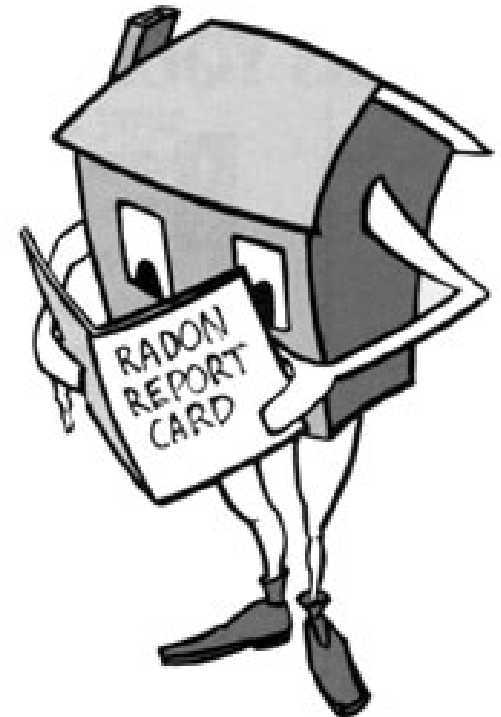
How Do I Know My System is Working?

- Active Systems should have a monitoring device
 - Liquid gauge
 - Indicator light
 - Dial gauge



Should I Test in the Future?

- EPA Recommends Post-Mitigation testing:
 - 30 days after installation of mitigation system
 - At least every 2 years
 - If you change your living habits
 - (occupy lower level of your home)



Questions?

Call: Mike Salati, Sr. at 515-433-0506

Go to: www.usepa.gov/radon/ or

<http://www.idph.state.ia.us/eh/radon.asp>



Thank You For Attending!

- Please complete the evaluation form!

