



## Kansas Radon Program

Engineering Extension

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[www.kansasradonprogram.org](http://www.kansasradonprogram.org)



***Techniques have  
been developed to  
reduce radon levels  
to less than 4 pCi/l.***

# Radon Levels Can Be Reduced

## Mitigating your home

Radon is a naturally occurring radioactive gas produced from the decay of uranium that is found in nearly all soils. Outdoors, radon is diluted to low concentrations and poses no problem. However, once inside an enclosed space, radon can accumulate to significant levels.

The amount radon builds up indoors depends on type of construction, effects of air handling equipment, and concentration of radon in underlying soil.

Radon can be a problem in old homes, new homes, drafty homes, insulated homes, homes with basements, homes without basements – homes of all types.

Soil composition under and around a house affects indoor radon levels because it affects the ease with which radon migrates toward a house.

Normal air pressure differences between the house and the soil can create a slight vacuum in the home that can draw radon gas from the soil into the building.

Radon gas can enter a home from the soil through dirt floors, cracks in concrete floors and walls, floor drains, sumps, joints, and tiny cracks or pores in hollow-block walls.

Radon levels are generally highest in basements and ground floor rooms in contact with the soil. Factors such as design, construction, and ventilation of a home affect radon's entry routes and the driving forces which can draw radon indoors.

Because no level of radon is considered absolutely safe, radon levels in a home should be reduced as much as reasonably possible. Action should be taken to reduce radon levels in a home if the average annual level is higher than 4 picocuries per liter (pCi/l).

In most cases, you can reduce radon levels to 2 pCi/l or lower.

You reduce radon levels in homes by preventing radon entry, increasing ventilation, and removing radon and its decay products from the air.

Preventing radon entry is the preferred approach. One of the most effective techniques is ventilation of the soil under the home so radon is sucked away before it can enter. This method is called soil depressurization.

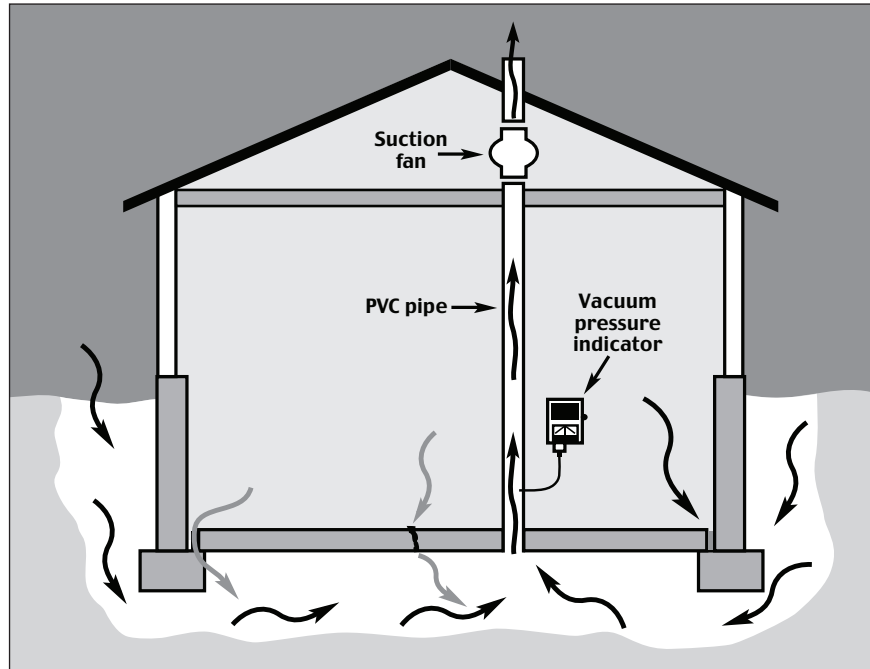
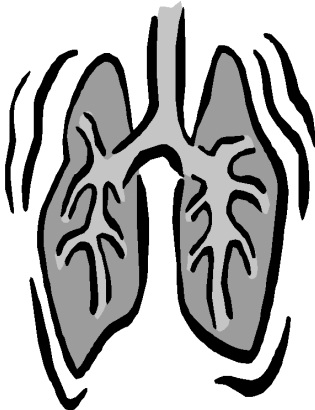
A system to accomplish this can be installed in an existing home, or more economically installed during the construction of a new home. It is the most common and usually the most reliable radon-reduction method. Suction can be applied to sumps, drain tiles, block walls, and under membranes in crawl spaces. A fan draws the radon through sealed plastic pipes, releasing it to the outdoor air above the roofline.

Other less successful methods of reducing radon levels include sealing potential entry points, increasing inside air pressure to slow radon entry, or installing a heat-recovery ventilator to permanently manage home ventilation.

When radon testing indicates elevated levels, a trained contractor is the best choice to correct the problem. The adoption of the Kansas Radon Certification Law, effective July 1, 2011, requires all professional radon contractors operating in Kansas to obtain a certification from the Kansas Department of Health and Environment (KDHE). In most cases, homes can be fixed for \$800 to \$2,000. A list of Kansas certified contractors is available at [www.kansasradonprogram.org](http://www.kansasradonprogram.org) or from the Kansas Radon Program at 800.693.5343.

## Radon Levels Can Be Reduced

**“Radon is the second leading cause of lung cancer after tobacco smoke.”**



Some do-it-yourselfers may be able to fix their own homes, but it is not a simple task. If you plan to do any of the work yourself, you should call the Kansas Radon Program or visit [www.kansasradonprogram.org](http://www.kansasradonprogram.org) to obtain technical guidance documents and other information, which may enable you to act effectively.

Radon contractors should be compared, just like other home repair specialists. A thorough inspection, written proposal, and references from the contractor are essential for you to make a good judgment.

The following are some essential concerns:

- Will the system have a warning device to indicate when the system is not operating properly?

- Is there a guarantee to reduce radon levels to below EPA's guideline of 4 pCi/L or lower?
- Will the system be labeled and an owner's manual or instructions be provided?
- A two- to seven-day test to confirm lowered radon levels should be conducted soon after work has been completed. Who will be responsible for a post-installation test to determine the performance of the system?

Remember, even if high radon levels were to be found, tried and proven techniques can be adopted to maintain safe conditions for your family

Visit the Kansas Radon Program on the Internet at [www.kansasradonprogram.org](http://www.kansasradonprogram.org) or call 800.693.5343 for additional information.

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