

One in 5 lung cancers occur in non-smokers. Having victims test their homes may prevent lung cancer in their family and future residents.

WHAT CAN I DO?

Please stress to all your patients the importance of conducting a radon test. Ask if they know the radon level in their home on standardized patient history forms. Inexpensive mail order test kits are available from a number of member laboratories found at www.aarst.org.

AARST will provide a free radon test kit to lung cancer victims. While it is obviously too late for these victims, they naturally have concern for their family members. Having their homes tested is important in making a connection to the cause and preventing lung cancer in family members and future residents of the home. AARST has produced an information pamphlet specifically for lung cancer victims containing a coupon for ordering their free test kit.

CANCER SURVIVORS AGAINST RADON (CSAR)

The idea of supplying free radon tests for lung cancer victims was provided by Dr. Lane Price, a well-known oncologist in Decatur, Alabama and Sabrina Lyle, of the Alabama Cooperative Extension Service.

A couple of years ago, Dr. Price began recommending that her non-smoking lung cancer patients contact Ms. Lyle to have their homes tested for indoor radon. As it turns out, an alarming number of these victims, most of whom are women, have been living in dangerous levels of radon for years.

After learning their indoor radon levels were elevated, many of the victims expressed frustration that they were never told about the seriousness of radon exposure and how easy it would have been to test and to mitigate.

Some victims want to come forward and urge others to take preventive measures by testing for radon. For this purpose, AARST has created Cancer Survivors Against Radon (CSAR), a free organization to allow victim volunteers to speak out on the seriousness of the radon concern. Information about CSAR is also presented in the AARST information pamphlet for lung cancer victims. Brochures can be ordered at www.aarst.org or by calling toll-free to AARST headquarters at 1-866-77AARST.



Radon Professionals Saving Lives

A Guide to Radon Awareness

Lung Cancer: It's Not Just From Smoking!

While smoking remains the number one cause of lung cancer, the National Academy of Sciences (NAS) and the Surgeon General rank radon as number two and estimate as many as 22,000 lung cancer deaths occur in the U.S. annually as a result of exposure to this Class-A carcinogen.



for Cancer-Care Professionals



The mortality rate associated with lung cancer is even more tragic because a significant portion of lung cancer is preventable. While smoking remains the number one cause of lung cancer, the National Academy of Sciences (NAS) and the Surgeon General rank radon as number two and estimate as many as 22,000 lung cancer deaths occur in the U.S. annually as a result of exposure to this Class-A carcinogen.

WHERE DOES RADON COME FROM?

Radon is a naturally occurring odorless, tasteless, colorless radioactive gas. It is produced by the natural breakdown of radium in soil, rock and water. Many homes and other buildings, such as schools and offices have high levels of radon. Because it's odorless and invisible and the lung cancer usually shows up over a long period of exposure, the danger of radon is often underestimated.

Because of the stack effect, radon can be drawn into the home from the soil below. Common entry points are cracks in concrete floors, utility access points, spaces around floor drains, sump pits, construction joints and tiny cracks in basement walls.

HOW DOES RADON INDUCE CANCER?

If inhaled, airborne radon decay products become deeply lodged or trapped in the lungs, where the alphas radiate and penetrate the cells of the mucous membranes, bronchi, and other pulmonary tissues.

The ionizing radiation energy affecting the bronchial epithelial cells is believed to initiate the process of the carcinogenesis. Although, radon-related lung cancers are mainly seen in the upper airways, radon increases the incidence of all histological types of lung cancer, including small cell carcinoma, adenocarcinoma, and squamous cell carcinoma.

WHAT IS THE EVIDENCE?

More is known about the health risk of radon exposure than almost any other human carcinogen. In fact, the University of Iowa College of Public Health recently compiled a bibliography of radon epidemiology research that took 192 pages just to list!

These include extensive studies of thousands of underground miners, carried out over more than 50 years worldwide, that have consistently shown an increase in lung cancer occurrence with exposure to radon progeny.

Miner studies have produced some interesting findings. For example, at equal cumulative exposures, low exposures in the range of EPA's 4 pCi/L Action Level over longer periods produced greater lung cancer risk than high exposures over short periods. Non-smoking miners were observed to have a significant

increased risk, even after controlling for, or in the absence of other mine exposures such as asbestos, silica, diesel fumes, arsenic, chromium, nickel, and ore dust. An added synergistic effect between radon exposure and cigarette smoking was also found.

The NAS has repeatedly concluded that it is reasonable to extrapolate from the miner data to a residential situation and in doing so, consider that the effective doses per unit of exposure for people in homes is approximately 30% less than for the miners.

Residential studies have yielded similar findings. The Iowa Residential Radon Study completed in May of 2000 determined that even at the EPA Action Level of 4 pCi/L, an approximate 50 percent excess lung cancer risk was found among the women in the study after correcting for the impact of smoking. A 2002 residential study conducted in northeast Spain yielded similar results. Even at concentrations far below official guideline levels, the Spanish study found that radon might lead to a 2.5-fold rise in the risk of lung cancer. This study also confirmed the synergistic effect of combining radon exposure to the risk of smoking.

Exposures of animals further confirm that radon and its progeny cause lung cancer. Health effects observed in animals exposed to radon include lung carcinomas, pulmonary fibrosis, emphysema, and a shortening of life span. The incidence of respiratory tract tumors increased with an increase in cumulative exposure. Exposure to ore dust and diesel fumes simultaneously with radon did not increase the incidence of lung tumors above that produced by radon progeny exposures alone. In a study of rats exposed to radon progeny, it was observed that the risk of lung cancer was elevated at exposure levels similar to those found in homes.

CAN HIGH RADON LEVELS BE REDUCED?

A certified or licensed contractor can easily and affordably reduce elevated radon levels. Most techniques prevent radon from entering your home by drawing the radon from below the house and venting it through a pipe to the air above the house where it quickly dilutes.

Mitigation can also decrease moisture and other soil gases entering the home, reducing mold, mildew, methane, pesticide gases and other air quality problems.



That is why it is important for health care practitioners to inquire about and encourage patients to test for radon levels in their homes.