# Lung cancer screening for people with radon exposure history

***Guidance for radon professionals and others who assist those with questions about radon exposure and lung cancer screening***

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*This document was drafted at Kansas State University with review and input from numerous resources in the radon community. We welcome any input on this important topic to improve the information available to the public about radon risks.*

In providing radon-related technical assistance to citizens across the country, radon professionals are asked about screening for lung cancer by many different populations including concerned individuals, family members, and medical professionals.

**Should I be tested for lung cancer because of this radon exposure?**
**What is my risk of getting lung cancer from this exposure?**
**Where can I get more information?**

As nonmedical personnel, what can the radon professional provide in response? What is a prudent recommendation for these concerned individuals? Many times, the discussion turns to the issues of whether lung cancer screening is available, warranted, useful and/or recommended.

**Our first duty is always to encourage individuals to bring their medical questions to their medical care provider(s)**. If someone has been exposed to high levels of radon over a long period of time, this advice is especially warranted. For example, such persons may want to speak to their physicians about whether they should get regular health checkups or tests such as low-dose CT scans of their lungs to look for possible signs of lung cancer.

**While talking to physicians is appropriate, of course, we also know that radon exposure risk evaluation and lung cancer screening recommendations for that exposure are not common topics for most family practitioners.** Other radiation exposures and individual lung risk factors increase the difficulty of response to those with concerns. Added to this fact is that no authority has come forward with radon-exposure-based lung cancer screening recommendations as general guidance for the public.

**Current status of non-radon-based recommendations and guidance** is provided by the U.S. Preventive Services Task Force Issues Draft Recommendation Statement on Screening for Lung Cancer, which can be viewed at
http://www.uspreventiveservicestaskforce.org/bulletins/lungcandrftbulletin.pdf
and
http://annals.org/article.aspx?articleid=1809422
In addition reviews of the National Lung Cancer Screening Trials report at
http://www.nejm.org/doi/full/10.1056/NEJMoa1301851
will help identify those who are at greatest risk for lung cancer and who may be appropriate candidates for screening.

**Smoking and history of smoking are the critical factors**. It seems clear from these reviews that careful consideration of the risks of screening tests and their results should be understood by those contemplating such tests. These risks include undesirable consequences of false positives, such as finding noncancerous abnormalities that lead to invasive tests, unnecessary surgeries, and anxiety for those screened and their families. These false positives can require follow-up CT scans and tests for small abnormalities that don't call for immediate testing. In addition, radiation exposures during the testing process may be significant, and the lung is an organ which is susceptible to radiation-induced cancer.

Ongoing efforts to reach physicians with appropriate information are an important initiative which needs to be sustained. A video available at
http://now.uiowa.edu/2012/06/new-video-urges-physicians-learn-about-relay-radon-risks
shows the right message for both physician and patient: it is a good place to start.

Unfortunately, there are no known methods of reducing the toxic effects of radon once exposure has occurred. **We cannot change past exposures, regardless of their source, so worrying about them is generally unproductive**. The goal is to reduce current and future radiation exposures to as low as reasonably achievable (ALARA). While the science of radon risk and estimates of risk increase, based on studies of large groups of people, are well founded, predicting an individual's chances of developing lung cancer is not a simple process. Known and unknown exposures of short and long duration, and other radiation exposures and individual lung risk factors add to the difficulty of responding to those who are concerned.

It is clear **that smoking cessation and prevention are the best steps to reduce the risk of lung cancer** in general and even of radon-related lung cancer in particular. It is also **well established that testing and fixing existing structures and building radon-resistant new construction are the next-most effective measures**. People who have tested their homes to determine their exposures are to be commended for doing so and are encouraged to take the appropriate steps to reduce future exposures.

**Information on lung cancer symptoms, diagnostic processes, screening and associated risks are available at the following links to assist those seeking help in these areas:**

http://www.nationallungcancerpartnership.org/lung-cancer-info/lung-cancer-facts/screening-faqs

http://www.lung.org/lung-disease/lung-cancer/lung-cancer-screening-guidelines/lung-cancer-one-pager.pdf

http://www.mayoclinic.com/health/lung-ct-scan/CA00086

http://www.cancer.org/cancer/news/lung-cancer-screening-guideline-frequently-asked-questions

http://www.cancer.org/cancer/lungcancer-non-smallcell/detailedguide/non-small-cell-lung-cancer-detection

http://www.atsdr.cdc.gov/csem/radon/radon.pdf

http://www.atsdr.cdc.gov/toxprofiles/tp145.pdf

The following referrals include recognized sources of medical science that may also be helpful:

American Lung Association
American Cancer Society
National Comprehensive Cancer Network
American Society of Clinical Oncology
American College of Chest Physicians
American Thoracic Society