Radon in residential buildings: A risk factor for lung cancer

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About 1900 deaths from lung cancer per year in Germany are due to radon within residential buildings. This was the conclusion reached in the current edition of *Deutsches Ärzteblatt International* by Klaus Schmid of the University of Erlangen-Nuremberg and his coauthors (*Dtsch Arztebl Int* 2010; 107(11): 181-6).

The authors base their assessment on the results of relevant studies, the recently published S1 guideline of the German Society for Occupational and Environmental Medicine and a current publication from the German Commission on Radiological Protection. These indicate that radon within residential buildings makes a major contribution to the radiological exposure of the general population. Thus, measurements in residential areas found radon radiation levels of more than 100 Bq/m^3 in 36% of cases and more than 200 Bq/m^3 in 18% of cases. This should be compared with the range of 1 to 15 Bq/m^3 found for the concentration of radon in the outside air in Germany.

Exposure within houses is predominantly due to release of radon-containing subsurface air from the soil into the building. Radon can penetrate into houses through leaks in the base plate or in the walls in contact with the soil.

It is thought that 300 cases of lung cancer per year could be prevented in Germany if the maximum radon concentration in residences was reduced to 100 Bq/m^3. It is also necessary to identify buildings with high radon levels and to take structural measures if necessary.

Occupational physicians have long known that radon can cause lung cancer, particularly in uranium miners. For individuals without occupational exposure, radon is regarded as the second most important cause of lung cancer after smoking.

More information:
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