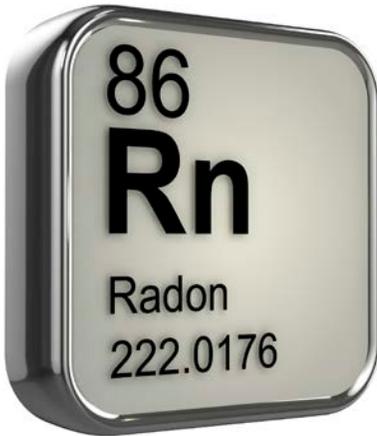
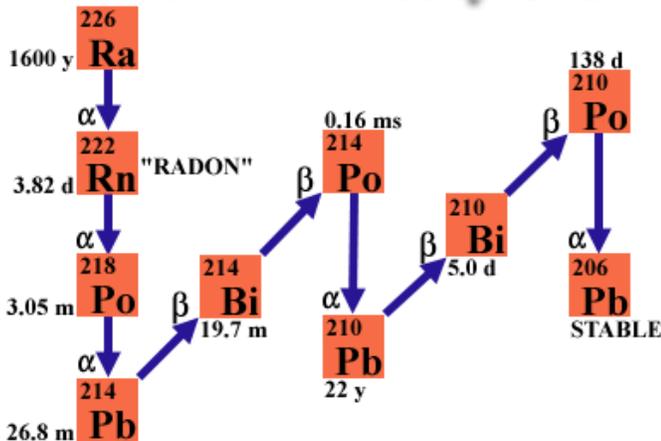


Dangerous Daughters: Hazard Evaluation and Control

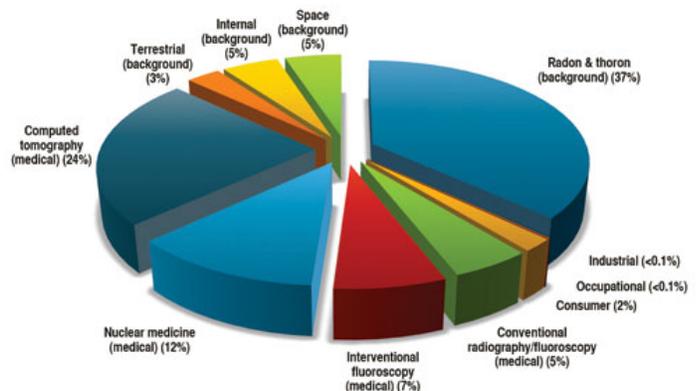


Radon is an inert, radioactive gas that is produced from the uranium widely dispersed in soil in the US. When inhaled, most of the gas will be exhaled without being retained in the body, resulting in very low radiation dose. However, radon rapidly decays into short lived radon decay products (also referred to as radon daughters or radon progeny). The inhaled radon decay products are not gases but solids that stick to the surfaces of the respiratory tract, and are retained long enough to irradiate nearby airway cells. Radon is considered to be the second (i.e. only smoking causes more cases of lung cancer) leading cause of lung cancer in the United States. For those that smoke and are exposed to higher levels of radon, the risk of lung cancer increases. The U.S. Surgeon General Health Advisory published (January 2005) that, "Indoor radon is the second-leading cause of lung cancer in the United States and breathing it over prolonged periods can present a significant health risk to families all over the country. It's important to know that this threat is completely preventable. Radon can be detected with a simple test and fixed through well-established venting techniques."

Radium-226 Decay Chain



EXPOSURE SOURCES FOR COLLECTIVE EFFECTIVE DOSE, 2006



Airborne radon and its progeny are all around us, at work or recreational areas, schools, households, indoors or outdoors counts for 37% of our annual radiation dose of 6.2 mSv (millisieverts). The concentration levels vary widely across the United States. Higher concentrations of radon are found in the Appalachians, the upper Mid-west and the Rocky mountain states. It is also important to recognize that radon concentration levels vary from house to house within a community, and are dependent on factors such as weather conditions, soil permeability, construction design and building characteristics, water sources and underground uranium rich granite. Many studies of radon levels in U.S. homes have been conducted, and continue to be of interest to home owners, employees or employers. The largest national radon survey was conducted by the EPA, completed in 1991, and measured radon gas concentrations in 5,694 U.S. homes. The EPA recommended action level for remediation is 148 Bq/m³ (4 pCi/L). This concentration level was chosen by the EPA for several reasons. First, the ability to accurately measure concentrations decreases below the 148 Bq/m³ (4 pCi/L) level. Second, remediation efforts to achieve below the 148 Bq/m³ (4 pCi/L) are increasingly difficult (i.e. research identified that remediation was 95% successful for ≤ 148 Bq/m³ (4 pCi/L), and 70% successful for ≤ 74 Bq/m³ (2 pCi/L)). Last, the 148 Bq/m³ (4 pCi/L) level was chosen based on cost and risk analysis results.

I would encourage you to visit the EPA's Indoor Environments Division website (<http://www.epa.gov/iaq/>) if you are interested in learning more about radon, health risks, and the techniques used by safety professionals to either identify or mitigate radon exposures.

*PLEASE DISPLAY ON COMMUNITY BOARDS OR SHARE WITH ANYONE WHO WOULD BE INTERESTED