

## **RADON: What You Need to Know**

**Radon, like carbon monoxide, is a odorless, invisible, tasteless gas. But this gas is inert and radioactive on its journey out of the soil. As rock-solid uranium decays, it turns into many unstable elements until finally—after thirteen different elements—it becomes stable lead (the kind you use for fishing or diving weights).**

**Big deal, huh? No harm in that!**

**However, this process of over billions of years has a very nasty moment in its decaying life when, as radium, it lets of a gas known as radon. Even that's not the bad stuff, though. Radon then decays further, letting off other by-products which become ionized with an electrostatic charge—you know, kind of like sticky static electricity. When you breathe a lung full of radon gas--in goes the gas and out goes the gas—but it leaves behind the sticky ionized particles known as Polonium 218 and Polonium 214. These are the bad guys! While stuck on the unprotected lung tissue, their alpha particles (two neutrons and two protons of an atom) are very reactive, and when they decide to release at about 50% the speed of light they can irradiate lung cells due to their mass and speed.**

**Think of them as tiny little suicide bombers hiding in your lungs with lead shot strapped to their bodies; they kind of blend in with every other particle you breathe into your lungs. But when they decide to pull their stunt, the explosion is disastrous to the cells they are near. The explosion either kills the cell(s), or worse, they alter the cells DNA, leaving it defenseless against carcinogenic activity: cancer cell production. It's simply a linear probability: exposed long enough and to an increasing number of alpha releases from the radon gas, the probability for lung cancer increases, too.**

**In the United States there are over 21,000 lung cancer deaths per year related to radon, according to the NAS and the EPA. Another figure I recently came across put the number at around 72 radon induced lung cancer deaths per day in America. That's more deaths than all other cancers combined, with the exception of smoker related lung cancer which remains the biggest cancer killer. And if you are a smoker, or live in a dusty house the potential for radon induced lung cancer increases exponentially, because these ionized radon decay products love to attach themselves to all the tiny particles we breathe in—including carcinogenic smoke particles, toxigenic mold spores, human skin and bug cells, pollen, pollution and... the list goes on. Scientist and medical professionals are linking other debilitating diseases, tumors and cancers to this powerful yet elusive gas.**

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