



Don't Fear Radon Concerns at Home; They're Overblown

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There is fear circulating about the risk of lung cancer due to inhaled radon gas, as a result of the widespread publicity given to studies that link lung cancer incidence to radon concentration using a “linear no-threshold” (LNT) model. This model — which many scientists say is baseless and should be scrapped — predicts an alarming excess of cancers, even at low radon levels.

Little publicity, however, has been given to the studies that actually measured home radon levels and examined the lung cancer incidence of the residents. And that should change.

Dr. Jerry M. Cuttler, a radiation expert and advisor to the American Council on Science and Health, has [co-authored a paper](#) entitled “Threshold for Radon-Induced Lung Cancer From Inhaled Plutonium Data,” along with Charles L. Sanders. It was recently published in the journal *Dose-Response*. Dr. Cuttler points out that measured radon levels and cancer outcomes document, in fact, a significant *decrease* below the natural incidence of lung cancer. These observations contradict the predictions made using the LNT dose-response model.

In their article, the authors outline a rather complex series of calculations to demonstrate how the unscientific LNT dogma, established during the early years of the nuclear age, is. And it's been etched in stone, as it were, by the “radiation protection industry” and its official agency, the International Commission on Radiological Protection (ICRP), since the 1950s. Why? The change came “because of strong political pressure by scientists and other influential people to create a social fear of low radiation from A-bomb testing during the arms race and abhorrence of nuclear war,” according to Dr. Cuttler, in the 2013 [Canadian Nuclear Society Bulletin](#).

Enter ICRP and its LNT assumption. Suddenly, “safe” levels of maximum

annual occupational and public exposures were set at 50 and 5 mSv, respectively, and later reduced to 20 and 1 mSv. Some experts have noted the irony that if adhered to stringently, these tolerance levels would mandate that Denver and many other places should be evacuated immediately, since both the global average and the average dose in Denver are 3 mSv per year. It is the LNT model which has popularized the common myth that radiation is unsafe at any dose, despite the frequent counterpoints by nuclear experts such as renowned Swedish radiobiologist Gunnar Walinder. In 1995, he said, “The LNT hypothesis is a primitive, unscientific idea that cannot be justified by current scientific understanding. As practiced by the modern radiation protection community, the LNT hypothesis is one of the greatest scientific scandals of our time.”

The unscientific, political basis of the LNT model has led to such ironies as this: After the Fukushima earthquake and tsunami, Japan lowered its radiation tolerance standards to the point that it has effectively banned bananas (which contain radioactive potassium) and Brazil nuts (which contain radium).

Arbitrary standards such as these ignore thousands of studies disproving LNT and demonstrating radiation’s *hormetic* effect — that a “toxic” exposure at high levels can be beneficial at lower doses. Hormesis applies to radiation, too. Dr. Cuttler has asserted that no harmful health effects have ever been detected in high natural radiation background areas, most notably (for the American Council, anyway) in [his publication](#), “Nuclear Energy and Health, and the Benefits of Low-level [Radiation Hormesis](#).” Compared to average-dose regions, rates of both cancer and congenital disease are consistently decreased, rather than increased.

Drs. Cuttler and Sanders conclude their plea for science-based home radon assessments thusly: “The EPA action level for reducing radon in homes is 14 times lower than the ‘No Observed Adverse Effect Level’ (*NOAEL*) estimated in this article. The very low action level has been causing undue fear and unwarranted costs to many homeowners as well as a reduction in the market prices of their radon-stigmatized homes. It should also be noted that radon remediation significantly *increases* lung cancer mortality. To dispel the fear and eliminate this economic burden, the action level should be raised by a factor of at least seven, where the health benefit is near optimum.”

And not to ignore the roiling controversy over “sustainable” or “clean” energy as a contributor to the fight against global warming, another point of

view must be given credence: “Anti-nuclear activists and nuclear disarmament proponents cling to the discredited LNT hypothesis, sacrificing lives and economies for the sake of an imprudent political agenda. The ICRP website admits that its International System of Radiologic Protection is based in part on ‘value judgments’ that ‘take into account societal expectations, ethics and experience gained in application of the system.’ They do not explain how it is ethical to mislead society with a disproven hypothesis, no matter their success in applying such propaganda over the past 50-plus years, instead of frightening the public with nuclear science fiction.”



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