

## DEADLY RADON IN MONTANA?

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Noting a negative correlation between average radon levels and lung cancer mortality in Montana counties, Hart (2011) “questions the notion that radon is deadly in Montana.” Results from a much larger ecological study of the correlation between county radon levels and lung cancer mortality across the whole United States were published in the 1990s (Cohen 1990, 1995). Like Hart, Cohen found an inverse correlation between radon concentrations and lung cancer. Such ecological studies suffer, however, from lack of individual information on radon exposures and other lung cancer risk factors, including smoking. Indeed, there is compelling evidence that the observed negative correlation was a spurious one due to confounding by smoking. First, the same negative correlation between radon and cancer mortality was observed for a variety of smoking-related cancers, but not for cancers unaffected by smoking (Puskin 2003). More recently, it has been found that – even using average county radon concentrations as a surrogate for individual radon exposure – the correlation between radon and lung cancer becomes positive, once one controls for individual smoking habits (Turner *et al.* 2011).

Even more definitive is the evidence from a pooled analysis of case-control studies, which were based on radon measurements in the homes of individual lung cancer cases and controls, matched by age, sex, and smoking history (Darby *et al.* 2005). These results firmly establish that lung cancer risk increases with increasing radon exposure in homes.

### REFERENCES

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