

# Deaths from lung cancer could be reduced by better policies to control indoor radon

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About 1100 people each year die in the UK from lung cancer related to indoor radon, but current government protection policies focus mainly on the small number of homes with high radon levels and neglect the 95% of radon related deaths caused by lower levels of radon, according to a study published on [bmj.com](http://bmj.com) today.

The authors argue that installing basic and cheap measures to prevent radon in all new homes would be more cost-effective and have greater potential for reducing lung cancer deaths caused by radon, and UK Building Regulations should be amended to enforce this.

Radon in the home is a natural air pollutant produced by the decay of uranium in the ground. Radon gas seeps into buildings through cracks and holes in the foundations and when it decays it produces particles that can enter the lungs and expose them to damaging radiation.

At present, government policies in the UK concentrate on searching for homes with high levels of radon and encouraging homeowners to take remedial action at their own expense.

Professor Alastair Gray, Professor Sarah Darby and other colleagues from the University of Oxford, assessed the contribution of indoor radon to lung cancer deaths in the UK, and examined the cost- effectiveness of policies to control radon exposure. They used recent evidence on the risk of lung cancer from indoor radon, based on data from 7,000 people with lung cancer and more than 21,000 people without lung cancer across

Europe. They then calculated the lifetime risk of lung cancer death before and after various interventions to control radon, and the costs involved.

The authors estimate that 1100 deaths a year in the UK are related to radon, about 3.3% of all deaths from lung cancer, but less than 5% of radon related deaths occur from exposure above the current action level. In addition, they report that many homeowners refuse to have their home tested or to spend money reducing radon levels. As a result these policies are costly and have a minimal impact on radon related deaths.

In contrast, the authors found that installing simple preventive measures in new homes is highly cost-effective, but at present is only being done in selected areas of the country. This should be rolled out across the whole UK, say the authors, and should be backed up by changes to the Building Regulations. A gas-resistant membrane in the foundations would reduce radon by about 50% and would cost only about £100.

Importantly, the study also found that six out of seven radon related lung cancers occur in people who smoke or who have smoked in the past. The best way for current smokers to reduce risk is to stop smoking. Current and former smokers can also reduce their risk by taking radon control measures seriously, say the authors.

The authors suggest that their findings are relevant to many other countries, most of which have higher concentrations of radon than the UK. The average radon concentration in UK homes is 21 bequerels per cubic metre, but in the European Union the average is 55, suggesting that about 8% of deaths from lung cancer, or 18,000 deaths each year, are caused by radon across the EU.

This is the most extensive and detailed evaluation to date of the policies to counter radon-induced and deaths from lung cancer, say Professor

Anssi Auvinen from the University of Tampere in Finland and Professor Göran Pershagen from the Institute of Environmental Medicine in Sweden, in an accompanying editorial.

The findings suggest that:"Radon policies need to be scrutinised [and particularly in populations with low average levels], the priority should be to apply basic measures universally rather than to take action only when high radon levels have been identified by measurement."

Source: British Medical Journal

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