

 <b>West Lothian Council</b>	<b>Environmental Health</b>		<b>SUBJECT:</b> Radon Gas
		Food Safety/Food Hygiene	<b>NUMBER:</b> PH16
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<b>STATUS:</b> PUBLIC ADVICE		Pollution Control	Radon Gas
		Pest Control/Dog Warden	

## Information Sheet PH16 Radon Gas

West Lothian has traditionally been considered free of radon gas problems. However, the release by the Health Protection Agency (HPA) in July of an *Indicative Atlas of Radon in Scotland* has highlighted that a small number of properties in West Lothian are now considered to be at risk of exceeding the UK radon Action Level.

New properties in affected areas can be designed from the outset to minimise the risk of Radon gas accumulation. Existing properties can usually be adapted, the cost of which will vary depending on the type and construction of the property concerned.

- West Lothian is now listed as having fewer than 100 homes with a 5% or greater risk of having high radiation levels. Previously mapping raised no concerns for West Lothian.
- Homes identified will be offered a free on-site measurement by the Scottish Government.
- Residents can find out the radon potential of an individual address from HPA's radon website ([www.ukradon.org](http://www.ukradon.org)) at a charge of around £3 +VAT. HPA will do on site measurements for around £50 per home if the owner wishes.

### What is Radon Gas?

Radon is a colourless, odourless radioactive gas. It is formed by the radioactive decay of the small amounts of uranium that occur naturally in all rocks and soils.

It has long been associated with Aberdeenshire and Devon and Cornwall.

### Why is it a risk to our Health?

Radioactive elements decay and emit radiation. Any exposure to radiation is thought to be a risk to health - radiation is a form of energy and can cause damage in living tissues increasing the risk of cancer. It is generally only harmful if it accumulates in homes or other places where people are present for extended periods. Being radioactive it has the potential to cause cancer. This risk is greatly increased where the individual smokes. It is the second largest cause of lung cancer in the UK.

### Where is radon found?

Radon is everywhere; formed from the uranium in all rocks and soils. Outdoors everywhere and indoors in many areas the radon levels are low and the risk to health is small. The darker the colour on the [radon maps](#), the greater the chance of a high radon level in a building.

However not all buildings even in the darkest areas have high levels.

## **What is a low level?**

The amount of radon is measured in becquerels per cubic metre of air ( $\text{Bq m}^{-3}$ ). The average level in UK homes is  $20 \text{ Bq m}^{-3}$ . For levels below  $100 \text{ Bq m}^{-3}$ , your individual risk remains relatively low and is not a cause for concern, However, the risk increases as the radon level increases.

## **What is radiation and radioactivity?**

Radioactivity is where unstable elements, such as naturally occurring uranium, thorium and radon, break down; energy is released and different elements formed. The new elements may also be unstable so the process is repeated until a stable element is formed. The energy given off is called radiation and can be alpha or beta particles or gamma rays. Alpha particles are more harmful than beta particles or gamma rays.

This is because alpha particles contain more energy and are absorbed over a smaller area.

## **Our exposure to radiation?**

We are all exposed to radiation from natural and man-made sources. Just  $20 \text{ Bq m}^{-3}$  (the average radon level in UK homes) gives us half our exposure to radiation from all sources.

Higher radon levels give higher exposures: that is why it is important to find out the levels in your home and in your school or workplace.

## **Why is radiation harmful to us?**

The radioactive elements formed by the decay of radon can be inhaled and enter our lungs. Inside the lungs, these elements continue to decay and emit radiation, most importantly alpha particles. These are absorbed by the nearby lung tissues and cause localised damage. This damage can lead to lung cancer.

## **Advice for Smokers**

Smoking is proved to make the health risks associated with Radon gas much greater. For help and advice on stopping smoking and staying stopped, contact the Smokeline free on 0800 84 84 84 or see the web site at [www.canstopsmoking.com](http://www.canstopsmoking.com).

## **Further information**

- [www.UKradon.org](http://www.UKradon.org).
- Information on the radon risk for a larger existing building or a new building site with a footprint greater than about 25 metres can be obtained from the BGS ([www.bgs.ac.uk/radon/home.html](http://www.bgs.ac.uk/radon/home.html)) or the HPA.