

Silent killer

It was cold and dreary at the end of November, and the house had no gas heating. So a Leeds family decided to barbecue indoors, to cook the food and warm the house up . . . and the five of them were lucky to escape with their lives. A "Toxco" breath test by the ambulance crew showed they had high levels of carbon monoxide (CO), and they were taken to St James Hospital.

Around 50 people die each year in the UK from accidental exposure to CO and some 200 have non-fatal injuries – and these are the ones we know about. How many more are being harmed by unsuspected exposures, either chronic low-level or acute?

Incidents are commonest in autumn as householders turn on their heating, but they occur year-round, and Yorkshire's incidence is particularly high. Poor maintenance and ventilation of coal, oil and gas heating are believed to be major factors, and one recent study showed that 6% of gas appliances emit dangerous levels of CO.



The Toxco breath test for carbon monoxide
Image by permission of Bedfont Scientific Ltd

The householder is unlikely to be aware of this. CO is a silent killer, being a colourless, odourless, tasteless gas. Symptoms of exposure are not distinctive: headache, nausea, vomiting, dizziness, breathlessness or chest pain could indicate all sorts of ailments including flu. It is the circumstances that usually give the clue to the diagnosis, such as motor fumes or symptoms that vanish out of doors – or being found dead.

The HPA therefore seeks to raise public and professional awareness, to aid earlier diagnosis, to support follow-up action after the diagnosis is made,

and to research the true extent of CO poisoning. This is in collaboration with Environmental Health departments, the NHS, and the Gas Safe Register (the trade body that replaced Corgi).



Doctors and nurses are encouraged to think of CO when seeing patients with the above symptoms. A CO diagnostic algorithm is posted on the HPA website at www.hpa.org.uk > topics A_Z > carbon monoxide poisoning.

CO poisons by binding strongly to haemoglobin, so that oxygen cannot attach. So its effects are more serious in those with compromised cardiopulmonary systems, eg with chronic respiratory disease. Smokers carry a chronic low level of carboxyhaemoglobin, but higher levels suggest other sources of recent exposure – COHb has a half-life of about six hours.

Leeds General Infirmary and St James, along with Frimley Park in Surrey and St Mary's in London, are studying the amount of CO in people attending A&E. Patients with suggestive symptoms have their blood gases analysed, with further investigation of those with high levels. It's hoped this will give a truer measure of community exposures and harms.

Are your appliances safe?

Look for black sooty marks on the radiants – the bars above the flames of gas fires; sooty marks on the wall around stoves, boilers or fires; smoke accumulating in rooms due to faulty flues. Yellow instead of blue flames may indicate a fault (but this does not apply to fuel-effect, living-flame or decorative-flame gas fires, which are meant to resemble flames from solid fuel.) If you see any of these signs, turn off the appliance, open your windows and have a registered engineer service the appliance as soon as possible.

Further information

www.hpa.org.uk/HPA/Topics/ChemicalsAndPoisons/CompendiumOfChemicalHazards/1190384159840/

National Gas Emergency Service - call 0800 111 999

Gas Safe Register www.gassaferegister.co.uk

Oil Firing Technical Association (OFTEC) helpline - call 0845 65 85 080 or visit www.oftec.org

Solid Fuel Association (SFA) helpline - call 0845 601 4406 or visit www.solidfuel.co.uk/frame/main.html

For more on the CO study, see:
www.hpa.org.uk/hpr/chemicals/default.htm#coinaande