

WARNING! CARBON MONOXIDE KILLS!

*Everything you need to know about
the dangers of carbon monoxide
(CO) poisoning and how to
keep out of harm's way
from this "silent killer"*



What is Carbon Monoxide (CO)?

Carbon Monoxide (CO) is a colourless, odourless gas and that is why it is commonly called 'The Silent Killer'. In the UK it causes the **deaths of approximately 40 people** each year, with hundreds more made seriously ill, and the Department of Health estimates that around **4000 people are admitted to A&E** as a result of inhaling this dangerous, invisible gas.

Exposure to high concentrations of carbon monoxide leads to **collapse and death within minutes** and even lower levels of poisoning can result in **lasting health problems** such as neurological damage.

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Where does CO come from?



All carbon-containing fuels such as gas (domestic and bottled), coal, coke, oil, petrol, diesel, biofuel and wood can produce CO if there is not enough oxygen from the air for the fuel to burn fully or something else disrupts the burning process such as a blocked (or poorly fitted) flue or chimney – this will stop the CO gas escaping allowing it to build up to dangerous levels.

Although most victims are exposed to CO in homes or holiday residences they can also be at risk from exposure in caravans, motor homes, tents and boats as these often use portable fuel burning appliances in what may be a poorly

ventilated area. In campsites the main risk is campers taking a smouldering charcoal barbecue, or a cooling one, into a tent, caravan or motor home, unaware that it is still producing significant amounts of CO.

Likewise the use of generators in a poorly ventilated area can also greatly increase the risk of CO poisoning.



Types of fuel burning appliances that cause CO

Around two thirds of reported cases of carbon monoxide poisoning are caused by central heating appliances with half of these classed as “older” boilers.



But it's important to understand that it's not just central heating boilers that cause CO: cookers, stoves, fires, water heaters, paraffin heaters, room heaters, generators, BBQs (if used in poorly ventilated areas) and even biomass fuel storage can all cause CO poisoning.

If a disruption of the burning process or a shortage of oxygen occurs when any of the above are used it can increase the risk of CO poisoning. Although the main culprit of CO poisoning is an older, defective boiler, be aware too that CO can seep into properties via shared flues and chimneys and people can be poisoned by carbon monoxide produced by an appliance in a neighbouring property.

IN AND AROUND THE HOME the main causes of CO poisoning are:

✓ Poorly installed and irregularly maintained appliances

Household appliances, such as cooking and heating devices, that are incorrectly installed and badly maintained are the main cause of accidental exposure to carbon monoxide. Correctly fitted and well maintained appliances should produce very little CO gas.

Damaged appliances can also produce higher levels of CO gas than normal and become dangerous.

✓ Blocked flues and chimneys

Blocked flues and chimneys are another potential cause of carbon monoxide poisoning because they can stop CO gas escaping, allowing it to build up to dangerous levels in a room.

✓ Enclosed or unventilated spaces

Burning fuel in an enclosed or unventilated space increases the risk of CO poisoning. For example, a car engine left running inside a garage or a faulty heating boiler in a poorly ventilated kitchen can emit potentially lethal levels of CO gas.

A car left running in a closed garage will take around 10 minutes to build up a lethal level of CO gas.

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The warning signs to look for

Around the home look out for the following warning signs:

- ✓ ***Black, sooty staining on the walls and surfaces surrounding an appliance such as cooker, boiler or fire***
- ✓ ***Black sooty marks on the front covers of gas fires***
- ✓ ***Smoke or excessive condensation accumulating in rooms due to faulty flues***
- ✓ ***Yellow or orange flames instead of blue flames from gas appliances or boiler pilot lights***
- ✓ ***Coal or wood fires burn slowly or go out***

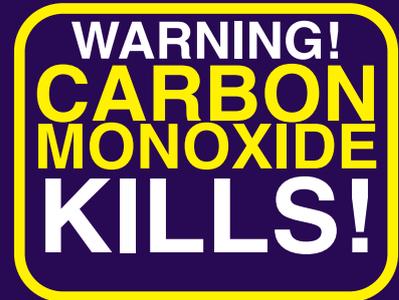


Knowing the symptoms of CO

Recognising CO poisoning is not easy as it can be similar to other conditions such as 'flu and food poisoning. But unlike 'flu, carbon monoxide poisoning does not cause a high temperature (fever).

The most common symptoms are:

- **Headaches**
- **Dizziness and nausea (feeling sick)**
- **Tiredness and confusion**
- **Stomach pain**
- **Vomiting (being sick)**
- **Shortness of breath and difficulty breathing**



Indications of domestic carbon monoxide poisoning:

- **Other people in your house, flat or workplace fall ill with similar symptoms**
- **Your symptoms disappear when away from the house e.g. at work but recur on returning home**
- **Symptoms related to cooking – stove in use**
- **Symptoms worse in winter – heating system in regular use**

The longer you inhale CO gas, the worse your symptoms will be. You may lose balance, vision and memory. Eventually, you may lose consciousness. This can happen within two hours if there is a lot of CO gas in the air and within minutes if the build-up of CO has reached dangerously high levels.

Be aware that some are more vulnerable than others

Whilst CO is a danger to everyone, certain groups are more vulnerable. These include:

- **Babies and young children**
- **Pregnant women**
- **People with chronic heart disease**
- **People with respiratory problems, such as asthma**

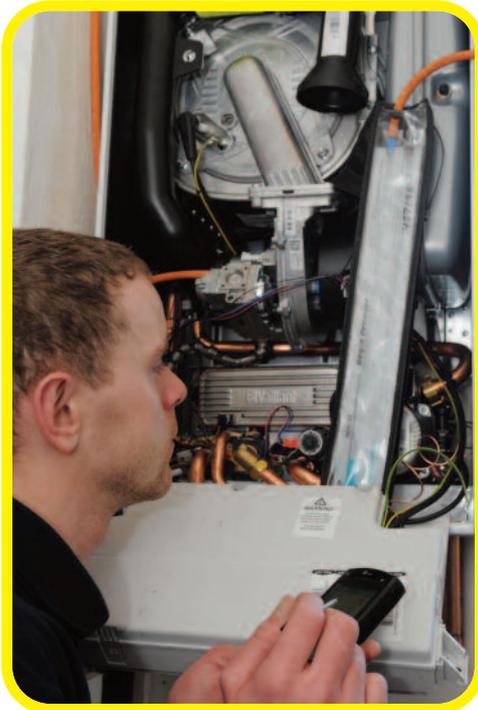
Pets may be the first to show signs of carbon monoxide poisoning because they are highly vulnerable to the effects of CO gas. The smaller an animal or a person is the faster CO gas will affect them.

If your pet suddenly becomes ill or dies unexpectedly, and death is not related to old age or an existing health condition, you should investigate the possibility of a CO leak.

What YOU can do to protect you and your family

There are two very important precautions you can take to minimise the danger of CO poisoning in the home. These are:

Step One Heating engineer



The first line of defence against CO poisoning and the most important thing you can do to keep you and your family out of harm's way is to ensure that all fuel burning appliances (boiler, cooker or fire) and any connected flues or extraction systems in your home are regularly maintained to keep them operating in safe working order and subject to annual safety checks by a qualified engineer. For gas this should be a **Gas Safe Registered** engineer, for oil an **OFTEC** member and for solid fuel a **HETAS** member. Never attempt to install or service an appliance yourself.

Make sure that all chimneys and flues are swept regularly by a qualified sweep who is a member of the National Association of Chimney Sweeps (NACS), the Guild of Master Sweeps (GMS) or the Association of Professional and Independent Chimney Sweeps (APICS).

Step Two CO alarm

A second but important line of defence is to fit one or more CO alarms. As you cannot see or smell carbon monoxide fitting a European Standard certified audible carbon monoxide alarm is a low cost but potentially life saving device. It is however essential that your alarm is marked with the EN50291 safety standard and with the CE mark. CO alarms are widely available to buy online or through electrical, hardware and home improvement stores. Local, reputable heating engineers will also usually fit one for you.



All alarms come with fitting and operating instructions and it is vital that you read these carefully when you fit the alarm, keeping the instructions somewhere safe and obvious to refer back to if needed.

When there are dangerous levels of CO present a red LED light on the alarm flashes accompanied by a series of on/off (loud) beeps. If this occurs follow the advice given in the section below: 'What you should do if your CO alarm sounds'.

However, remember that a CO alarm is **not a substitute for maintaining and regularly servicing household appliances**.

If your alarm sounds everyone should immediately open windows and doors then leave the house/building as quickly as possible. Call the CO Helpline on **0800 810 8464** for further advice.



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Some important Do's & Don'ts

- ✓ **DO** have your heating system, water heater and any other gas, oil, or coal burning appliances checked and serviced by a registered, qualified heating engineer every year.
 - ✓ **DO** make sure that rooms are well-ventilated and do not block air vents. If your home is double-glazed or draught-proofed, make sure there is still enough air circulating for any heaters that are in the room.
 - ✓ **DO** install a battery-operated CO alarm in your home. Check or replace the alarm battery as advised by the manufacturer – this may mean every year depending on the type you buy.
 - ✓ **DO** fit an extractor fan in your kitchen (if it doesn't already have one).
 - ✓ **DO** seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed or nauseous.
- ✗ **DON'T** use a generator, BBQ/charcoal grill, camp stove or other fuel burning device inside your home, garage or in a confined area like a tent or awning.
 - ✗ **DON'T** use ovens or gas cookers to heat your home.
 - ✗ **DON'T** leave petrol fuelled lawnmowers or cars running inside a garage.
 - ✗ **DON'T** burn charcoal such as using a BBQ in an enclosed space such as a tent or caravan awning.
 - ✗ **DON'T** sleep in a room that has an unflued gas fire or paraffin heater.
 - ✗ **DON'T** run a car inside a garage attached to your house, even if you leave the door open.
 - ✗ **DON'T** burn anything in a stove or fireplace that isn't well vented.

What YOU should do if you suspect a CO leak

If more than one person in the same property develops flu-like symptoms without a temperature and you think it could be linked to a CO leak then:

- ✓ **Immediately stop using all your cooking and heating appliances that use fuel (other than electricity).**
- ✓ **Open all of the windows in your house or building.**
- ✓ **Leave the property as quickly as possible – get out in the fresh air.**
- ✓ **Call the CO Helpline on 0800 810 8464 for further advice.**
- ✓ **Once outside, if anyone is still feeling ill call 999.**

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What YOU should do if your CO alarm sounds

If the CO alarm unit sounds you need to:

- ✓ **Open all doors and windows to ventilate the area and allow the carbon monoxide to disperse.**
- ✓ **Where possible turn off all fuel burning appliances and stop using them.**
- ✓ **Leave the property and make sure everyone is out in the fresh air as quickly as possible.**
- ✓ **Call the Carbon Monoxide Helpline on 0800 810 8464. If gas is the suspected problem the Helpline will direct you to Gas Emergency Services number (0800 111 999).**
- ✓ **Do not re-enter the premises until the alarm has stopped.**
- ✓ **If anyone is suffering from the effects of CO poisoning such as headaches, feeling dizzy, nauseous or feeling sick seek urgent medical attention – call 999.**
- ✓ **Do not use the fuel burning appliances again until they have been checked for use by a competent, qualified, engineer. For gas this should be a Gas Safe Registered engineer, for oil an OFTEC member and for solid fuel a HETAS member. Remember that CO can seep into properties via shared flues and chimneys and people can be poisoned by carbon monoxide produced by an appliance in a neighbouring property – a qualified engineer will be able to investigate this.**



How to find a trusted, reputable heating engineer



The Carbon Monoxide Helpline is operated and managed by B&ES – the Building & Engineering Services Association.

All B&ES members are subject to regular, third-party inspection and assessment of their technical competence and commercial capability, carried out by an independent certification body.

B&ES members who undertake gas installations are all registered with Gas Safe – the gas safety watchdog body – and are also members of TrustMark, the Government-endorsed scheme designed to direct consumers towards reliable tradespeople.

The CO Helpline website has a search facility to help you locate your nearest B&ES member companies or you can call the CO Helpline and they will advise.

In addition to this Carbon Monoxide Helpline, B&ES also operates the Heating Helpline T: 0800 810 8303 www.heatinghelpline.org.uk which provides consumers with free, impartial advice on every aspect of home heating and energy saving.

Useful websites

In addition to the CO Helpline website www.cohelpline.org the following other websites provide useful information about the dangers of CO poisoning:

Council of Gas Detection and Environmental Monitoring (CoGDEM) www.cogdem.org.uk

Be Gas Safe www.carbonmonoxidesafety.org.uk

Gas Safe Register www.gassaferegister.co.uk

Health and Safety Executive (HSE) www.hse.gov.uk

CO-Gas Safety www.co-gassafety.co.uk

Carbon Monoxide – Be Alarmed! www.co-bealarmed.co.uk

CO-Awareness www.covictim.org

Katie Haines Memorial Trust www.katiehaines.com



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