

# Could your patient have carbon monoxide (CO) poisoning?

## Common symptoms include:

Headache (commonest complaint)  
Drowsiness / tiredness / lethargy  
'Flu'-like symptoms / myalgia  
Nausea / vomiting  
GI upset (especially in children)  
Dizziness  
Confusion

## Higher level exposure will lead to:

Altered conscious level  
A comatose patient  
Focal neurology possible

## Commonest misdiagnoses:

Chronic fatigue / 'Tired all the time'  
Migraine or other cause of acute headache  
Labyrinthitis/ear infection  
'Stroke' / TIA  
'Collapse ? cause'  
A 'viral illness'/URTI

## TESTS:

Do NOT rely on so-called 'cherry pink' colouration of mucous membranes.

Carboxyhaemoglobin (COHb) is the only useful test, but interpret with extreme caution. COHb has half-life of just FOUR hours breathing 'clean' air (shorter with O<sub>2</sub>). You must not use low/normal COHb to rule out CO poisoning – a careful history is much more likely to give the diagnosis – but raised levels (>4% in non-smokers, >10% in smokers) suggest recent CO exposure.

To measure COHb use pulse CO-oximetry (needs dedicated pulse oximeter designed to read COHb), breath analysis, or blood gas analysis as soon as possible, and preferably before commencement of oxygen therapy; but do not delay oxygen. Blood for analysis can be arterial, venous, or capillary. Ordinary pulse oximeters are unreliable in presence of CO – they mis-read COHb as oxy-Hb.

Treatment (usually only necessary in more severe cases): High-flow oxygen will help displace CO from the blood. Supportive treatment and baseline investigations as for any other poisoned patient, if required. More on Toxbase.

Discuss with local hyperbaric unit any of the following:

- Patient unconscious at any time
- Persisting altered conscious level
- Any focal neurology
- Pre-existing ischaemic heart disease
- Pregnant patient

What to do if CO suspected, but not 'proved' by raised COHb level:

Take focused history, concentrating on when symptoms are worst.

How is the patient's house heated? Have appliances been maintained regularly? Does their home share a wall with another property? Potential CO sources include heating appliances in neighbouring properties. Do they have a landlord (responsibility for safety issues may rest with them)?

If CO still suspected, and patient well enough to discharge:

Advise not to use any carbon fuelled appliances until demonstrated to be safe by a trades person competent to work on that fuel. Advise patient or relative to contact relevant agency (or landlord to do so if rented property). Advise to ask trades person about fitting of CO alarms (always in accordance with the manufacturer's instructions found in the manual provided with each alarm). Document that you have given this advice.

Carbon monoxide is produced from ANY carbon-containing fuel; so gas (mains or bottled), fuel oil ('kerosene'), coal, charcoal, petrol, diesel, wood – even paper. Symptoms will be worse when inside the affected area, and improve when outside. Any fuel-burning appliance can discharge CO into the breathable atmosphere if incorrectly installed or not maintained properly.

## ASK the 'COMA' questions:

- C** for Cohabitees & companions - is anyone else in the house affected (including pets)?
- O** for Outdoors - do your symptoms improve when out of the house?
- M** for Maintenance - are any heating appliances properly maintained?
- A** for Alarm – do you have a carbon monoxide alarm?

Patients who are misdiagnosed and sent home are at risk of continuing exposure, which may result in serious illness or death.

## Support for those affected:

CO-Awareness supports victims, their families and friends poisoned by Carbon Monoxide (CO) while trying to raise awareness among health professionals and the general public, of the dangers of CO.

Telephone Lynn on 0771 589 9296

Email: [Lynn@COvictim.org](mailto:Lynn@COvictim.org)

REGISTERED CHARITY NO. 1125755

*Trust in us to help you understand the effects of Carbon Monoxide (CO) and other toxic products of combustion*  
*CO is the chemical formula for carbon monoxide*



## Kindly supported by:



**Carbon Monoxide (CO) remains the biggest cause of accidental death by poisoning in the UK**

CO-Awareness Week starts on the third Monday in November

[www.COvictim.org](http://www.COvictim.org)

