

# WELSH HEALTH CIRCULAR



Llywodraeth Cymru  
Welsh Government

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**STATUS: ACTION**

**CATEGORY: HEALTH PROFESSIONAL LETTER**

**Title:** Raising Awareness of Carbon Monoxide Poisoning and Action Required by Health Professionals

**Date of Expiry / Review:** N/A

**For Action by:**

Doctors  
Pharmacists  
NHS Direct  
LHB Chief Executives  
LHB Medical Directors  
LHB Nurse Executive Directors  
Chief Executive Velindre NHS Trust  
Chief Executive Ambulance NHS Trust

**For Information To:**

LA Chief Executives  
LA Directors of Public Protection  
WLGA Chief Executive  
PHW Chief Executive  
Providers of Social Housing

**Action required:**

See section headed "Advice and Action Required"

**Sender:**

Chief Medical Officer and Chief Nursing Officer

**HSSG Welsh Government Contact(s) :**

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**Enclosure(s):** Joint letter from CMO and CNO and Algorithm

Dear colleagues,

As we move into the winter season and heating systems come back into regular use, we believe it is important to remind health professionals about the risks of carbon monoxide (CO) poisoning.

CO poisoning places an avoidable burden on health and health services in Wales. It can be both an acute life threatening problem and present insidiously with difficult to recognise symptoms and signs.

### **Symptoms**

Symptoms of CO poisoning can be vague and unspecific but include headache (as the most common symptom), tiredness, nausea, vomiting, vertigo, dizziness, cognitive impairment, long term neurological damage, convulsions, unconsciousness and death. Chronic low level CO poisoning may be confused with other illnesses such as influenza and food poisoning.

CO poisoning is more likely in those patients presenting after midnight or in the early morning, and in those who also had syncope. Risks to health from exposure to CO are more common in the winter months when malfunctioning heating appliances are used.

### **Advice and Action Required**

It is important to remember that the source of any case of CO poisoning must be identified to prevent more harm. CO poisoning may affect other people living at home or those in neighbouring homes. If you are treating a case, or suspected case, of CO poisoning you have a responsibility to inform Public Health Wales' Environmental Health Protection Team on **0300 003 0032** or out of office hours via ambulance control (see algorithm at ANNEX A - <http://www.publichealthwales.org/environmental-CO-healthcare-algorithm>), just as you would if you were treating a case of infectious disease. The algorithm attached to this circular can be printed off and gives more advice on what to do if you treat a case of CO poisoning.

Further advice on investigations for CO poisoning can be obtained from TOXBASE ([www.toxbase.org](http://www.toxbase.org)) or the National Poisons Information Service (NPIS) (Telephone 0344 892 0111).

### **Further information**

Further information can be found on the Welsh Government and Public Health Wales websites:

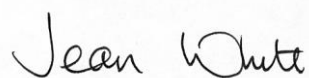
<http://gov.wales/topics/health/protection/environmental/carbon/?lang=en>

<http://howis.wales.nhs.uk/sitesplus/888/page/39069>

Yours faithfully



**DR FRANK ATHERTON**  
**Prif Swyddog Meddygol/Cyfarwyddwr Meddygol, GIG Cymru**  
**Chief Medical Officer/Medical Director NHS Wales**



**PROFESSOR JEAN WHITE CBE**  
**Prif Swyddog Nyrsio/Cyfarwyddwr Nyrs GIG Cymru**  
**Chief Nursing Officer/Nurse Director NHS Wales**

# Annex A

## Suspected carbon monoxide (CO) exposure: a guide for use in hospital Emergency Departments and primary care settings



**Presenting Complaint**  
Headache, nausea/vomiting, drowsiness, dizziness, dyspnoea, chest pain, falls, neurological symptoms, 'tired all the time'  
*Could this be a case of CO poisoning?*

Carbon monoxide poisoning can simulate conditions such as flu, migraine, food poisoning, tension headaches and depression. Headache is the most common symptom: **THINK CO!**

**Considerations**  
If you are suspicious then ask the patient:

- C Cohabitees/companions**  
*Is anyone else in the property affected (including pets)?*
- O Outdoors**  
*Do symptoms improve when out of the building? ('better outdoors')*
- M Maintenance**  
*Over a year since heating appliances/boilers serviced?*
- A Alarm**  
*Has your CO alarm been activated?*

### Sources of Carbon monoxide

CO may be in the home, car, workplace or in tents or caravans. Malfunctioning gas, oil, coal, coke- and wood-fuelled heating and cooking appliances are the most common sources in the home.

Poisoning can occur in all income groups and types of housing. CO can leak into houses from neighbouring premises. Pregnant women, young children, the elderly and housebound are most at risk.

**Yes to any**

**No to all**

### Testing for exposure

Breath tests and blood samples may prove inconclusive hours after exposure has ended: CO levels in the blood decline with a half-life of about 6 hours.

A normal concentration of carboxyhaemoglobin (COHb) does not disprove CO poisoning unless the sample has been taken during or soon after exposure ended.

For interpretation of results and detailed advice on CO poisoning see TOXBASE and call the NPIS.

**If you strongly suspect CO poisoning, do not wait for results, contact your local Public Health Wales HPT immediately**

### Acute or Chronic Exposure

1. Follow **TOXBASE ADVICE** for symptoms, signs and management of acute and chronic cases of CO poisoning. [www.toxbase.org](http://www.toxbase.org)

**For ACUTE EXPOSURES, TOXBASE recommends HIGH FLOW OXYGEN and, if in primary care, urgent referral to hospital.**

The half-life of carboxyhaemoglobin is reduced by the administration of high concentration supplemental oxygen.

2. Contact the National Poisons Information Service (NPIS) 0344 892 0111
3. **DO NOT** allow your patient to go home until the likely CO source is managed

Less suggestive of CO poisoning

Still clinically suspicious?

**If you suspect CO exposure you must notify the Environmental Public Health Wales Health Protection Team (HPT) on 0300 00 30032 (office hours) or via ambulance control (24 hours)**

**Remember to complete an online notification after discussing the case with the Health Protection Team. Available at: [www.publichealthwales.org/environmental-incident-form](http://www.publichealthwales.org/environmental-incident-form)**

Actions the HPT will take to prevent further exposure

- Notify others (including the gas emergency helpline on 0800 111 999)
- Investigate and assess the risk of exposure to others
- Recommend action to mitigate risk
- Provide advice on prevention
- Update the patient and clinician

Clinical follow-up is important as further consequences of chronic exposure to CO may be delayed, or mild symptoms may persist, multiply or intensify.

Recommend the purchase of an approved audible CO alarm (EN50291 compliant) for installation in the home.