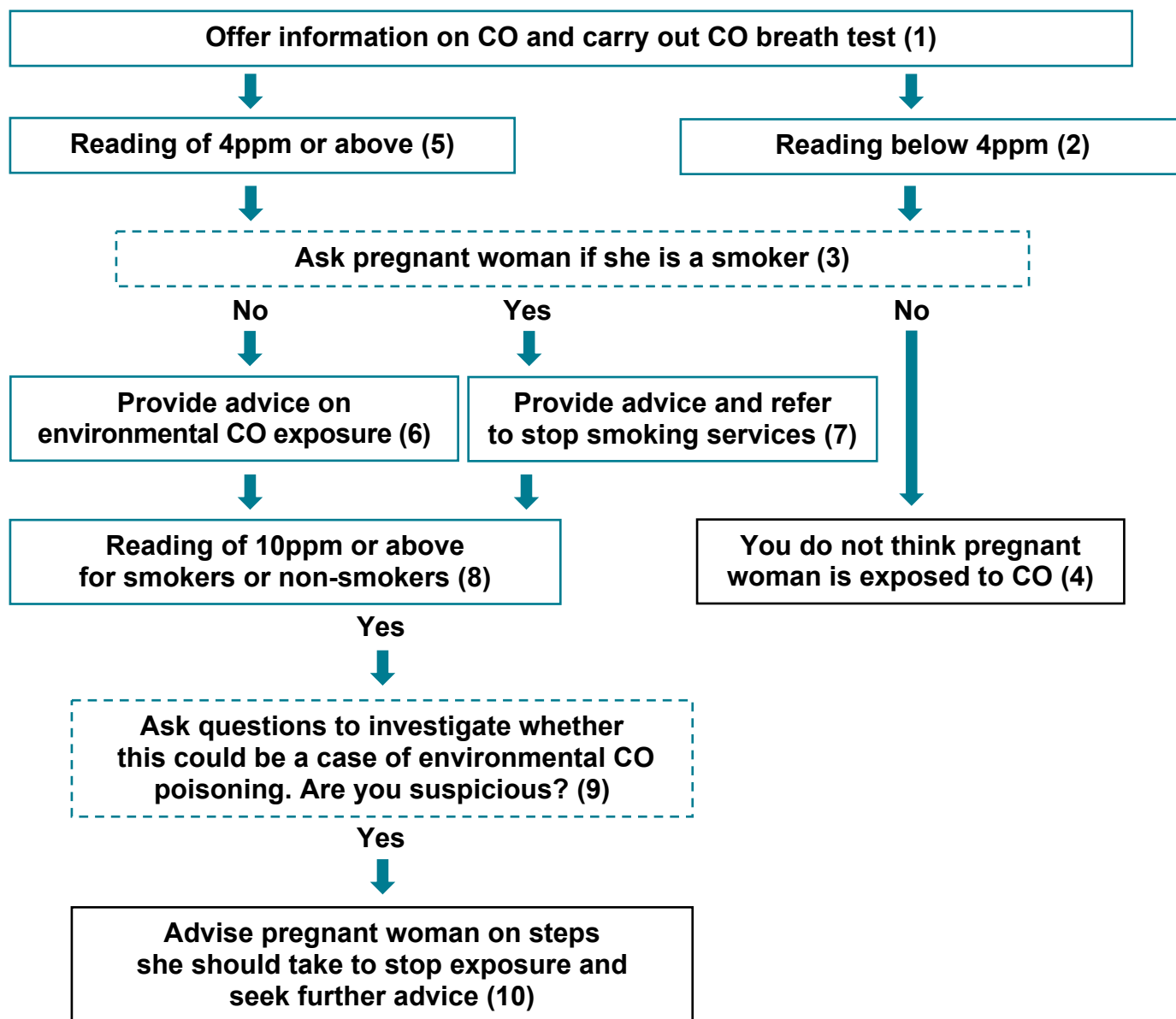




# Carbon monoxide (CO) antenatal checks algorithm: summary

This is an algorithm to help midwives and maternity staff diagnose environmental carbon monoxide (CO) poisoning in both smoking and non-smoking pregnant women and offer advice in the event of suspected exposure. This version is a summary. In this document, 'pregnant woman' refers to anyone who is pregnant or has given birth.

## Algorithm



This algorithm is meant to serve as a guide. Regardless of the potential source of CO exposure, if you feel concerned about raised levels of CO and/or signs and symptoms of CO poisoning, please use your clinical judgement and follow the local trust's policies.

Always record the exhaled CO level and any feedback given in the antenatal records. The National Poisons Information Service provides information on clinical management through the TOXBASE® website, [www.toxbase.org](http://www.toxbase.org), or phone 0344 892 0111.

**1. Offer information on CO and carry out CO breath test**

Provide information on carbon monoxide, its risks, sources of exposure and carry out breath test.

**2. Reading below 4ppm**

Advise the pregnant woman that she is unlikely to be exposed to CO.

**3. Ask pregnant woman if she is a smoker**

Ask the pregnant woman if she is a smoker or has ever smoked, however infrequently.

**4. You do not think pregnant woman is exposed to CO**

She is unlikely to be exposed to CO, particularly if previous readings have been below 4ppm.

**5. Reading of 4ppm or above**

Advise her that her reading is raised and the main source of exposure is usually smoking, but also have a conversation about second-hand smoke and other environmental sources of CO.

**6. Provide advice on environmental CO exposure**

Advise on second-hand smoke, environmental sources, signs or symptoms and reducing CO levels.

**7. Provide advice and refer to stop smoking services**

Regardless of her CO level, express concern for her and her baby and use local referral systems. However, the raised level may not be completely due to smoking. Advise on second-hand smoke, environmental sources, signs or symptoms and reducing CO levels.

**8. Reading of 10ppm or above for smokers or non-smokers**

Inform her that her reading is high, and to protect her and her baby, you want to check if the level recorded is due to smoking, second-hand smoke and/or other environmental sources of CO.

**9. Ask questions to investigate whether this could be a case of environmental CO poisoning. Are you suspicious?**

- 'Did you come here from your home, at what time did you leave and how did you travel here?'
- 'Did you have your last smoke within the 4 hours preceding this test?' (for smokers)

Positive responses to the following questions raise suspicion for both smokers and non-smokers:

- 'Do you or cohabitants suffer from headache, dizziness, flu-like symptoms, weakness, drowsiness, confusion and/or nausea? If so, do symptoms improve when you are outside?'
- 'Does your work involve exposure to smoke, fumes, or motor vehicle exhaust?'
- 'Do you have gas, oil, or solid fuel appliances that haven't been serviced recently, were newly installed, or are being used again after some time?'
- 'Do you ever use your gas oven or stove for heating purposes as well as for cooking?'
- 'Do you ever burn incense or ceremonial coals at home?'
- 'Have there been any changes in ventilation in your home recently?'

It is also important to ask: 'Do you have a working CO alarm in your home?'

If 'no', recommend the installation of an audible CO alarm (BS EN 50291-1 compliant)

If 'yes', ask: 'Has it sounded recently?'

**10. Advise pregnant woman on steps she should take to stop exposure and seek further advice**

Refer the pregnant woman and any cohabitants to emergency services if they are symptomatic (indicating that symptoms may be related to CO poisoning), unless there is a specific local pathway. Advise her to contact the National Gas Emergency Service for advice on all types of fuel burning appliances. She should turn off fuel-burning appliances, open windows to ventilate the building, and not go back into the suspected building (or vehicle) until she has got advice. She should install a CO alarm (BS EN 50291-1 compliant) or ask the landlord to install a CO alarm in the case of rental properties for each fixed combustion appliance.

**Emergency contacts**

Ambulance: 999

National Gas Emergency Service: 0800 111 999

**Non-emergency contacts**

NHS (non-emergency line): 111

Gas Safe Register: 0800 408 5500

HETAS: 01684 278170

**Priority Services Register:** <https://www.ofgem.gov.uk/information-consumers/energy-advice-households/join-your-suppliers-priority-services-register>