

Carbon monoxide poisoning in Pregnancy

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**Across England,
carbon monoxide
tests are undertaken
at the first
appointment with a
midwife.**



Testing is primarily undertaken to help identify women who smoke so midwives can raise their concern and refer them to a specialist service.

Acute co poisoning in pregnancy can lead to:

- Fetal and neonatal death
- Congenital malformations
- Neurological problems





Data also suggest that there may be an increased risk of such adverse outcomes after less severe maternal poisoning or following low level chronic exposure.

Smokerlyzer®



Breath carbon monoxide monitors
Helping people to stop smoking



Adult	
COppm	%COHb ¹
30	5.43
29	5.27
28	5.11
27	4.95
26	4.79
25	4.63
24	4.47
23	4.31
22	4.15
21	3.99
20	3.83
19	3.67
18	3.51
17	3.35
16	3.19
15	3.03
14	2.87
13	2.71
12	2.55
11	2.39
10	2.23
09	2.07
08	1.91
07	1.75
06	1.59
05	1.43
04	1.27
03	1.11
02	0.95
01	0.79

Maternity	
COppm	%FCOHb ²
20+	5.66
19	5.38
18	5.09
17	4.81
16	4.53
15	4.25
14	3.96
13	3.68
12	3.40
11	3.11
10	2.83
09	2.55
08	2.26
07	1.98
06	1.70
05	1.42
04	1.13
03	0.85
02	0.57
01	0.28

Having a reading in this zone indicates you may well be a **regular smoker** with higher levels of CO in your blood. Do not despair! Help is at hand and your stop smoking advisor can help you to give up smoking and lower your reading into the target "Green zone".

Having a reading in this zone would indicate a **light smoker** or a **non-smoker** breathing in poor air quality or passive smoke. Your stop smoking advisor will be able to advise on the best course of action to lower this reading to the target "Green zone".

This is where you really need to be!
It means you have less than 2% carbon monoxide (CO) in your blood. Most people have a small amount of CO in their breath, this is due to the air quality around you.

References:

1. COppm- %COHb calculation taken from: Jarvis M et al (1986) "low cost Carbon Monoxide monitors in smoking assessment." Thorax 41 pp 886-887.

2. COppm- %FCOHb calculation taken from: Gomez C. et al (2005) "Expired air carbon monoxide concentration in mothers and their spouses above 5ppm is associated with decreased fetal growth." Preventive Medicine 40 pp 10-15

A Case study

A 23 year old woman in her first pregnancy

- CO level 64ppm
- Partners level 82ppm
- Symptoms included headache and nausea – could have been recognised as symptoms of early pregnancy
- Referred to
- Emergency department – or therapy
- Engineer found level in house above 200ppm



Recommendation

A working group should be established to enable key organisations to develop a robust evidence-based pathway for the identification and prevention of exposure to environmental CO



Recommendation

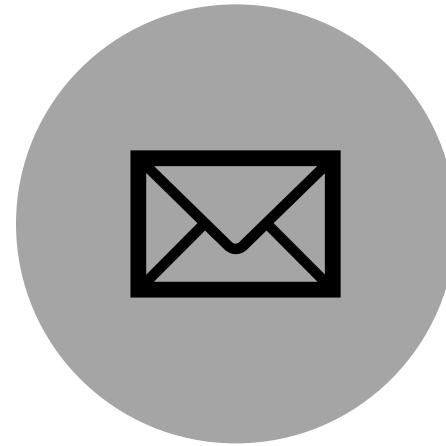
Appropriate bodies should fund research in order to:

- provide a better understanding of the scale of environmental CO poisoning in pregnancy
- establish the effects of repeated low dose exposure to CO on the developing fetus.
- gain a better understanding of the barriers and facilitators to the identification of CO poisoning in pregnant women.
- understand how to better protect women from CO poisoning by the actions of health professionals and other agencies.
- provide better information to individuals to help them protect themselves.

CO Poisoning in Pregnancy



ANY QUESTIONS



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