

Introduction

Carbon monoxide (CO) is a toxic, odourless, colourless and tasteless gas. It is formed by the incomplete combustion of organic material at high temperatures, with an insufficient oxygen supply. When inhaled, CO displaces oxygen in the bloodstream to form carboxyhaemoglobin (COHb). This starves body tissue of oxygen restricting the body's performance and causing health implications. CO can remain in the bloodstream for up to 24 hours.

What Is A CO Monitor?

For professionals, the CO monitor is a way to biochemically establish a person's smoking status. For smokers, it is a motivational visual aid to encourage them to quit, and to measure their progress whilst doing so.

CO Monitor:	D-Piece:	SteriBreath Mouthpieces:
An easy to use hand-held and non-invasive monitor for the testing of patients to determine the level of Carbon Monoxide (CO) in the breath. 	A one-way valve to prevent air being drawn back from the monitor. The breath then passes through an infection control filter, proven to remove and trap >99.9% of airborne bacteria. 	Single-use plastic tubes that attach to the D-piece, combining ease of use with optimum infection control. 

Why Is It Important?

Those who smoke can build up high levels of CO in the blood, which can lead to heart disease, circulation problems and high blood pressure. Measuring levels of CO can assist in smoking cessation, and can help to reduce the number of deaths from heart disease and cancer.

Taking a Breath Test

1. Attach the 'D-piece' and a new, unused 'SteriBreath mouthpiece'.
2. Turn on the monitor by pressing and holding the power button on top of the machine.
3. Press the 'breath test' symbol on screen:

or

4. Ask the patient to inhale and hold their breath for 15 seconds. A beep will sound during the last three seconds of the countdown.
5. Ask the patient to blow slowly into the mouthpiece, aiming to empty lungs completely.
6. The ppm and equivalent %COHb and/or %FCOHb levels will rise and stay on the screen.
7. When the test has finished the 'home' and 'music note' icon will appear at the bottom of the screen. If a high reading has been recorded, you can mute the sound by pressing the 'music note' icon.
8. To repeat the breath test, press the 'home' icon once to return to the home screen and repeat steps 3-7.
9. Remove the D-piece between tests to purge sensor with fresh air.
10. To switch the machine off, press and hold the power button for 3 seconds. The machine will also power off after 2 minutes of inactivity to save power.

What Do The Results Mean?

It is beneficial for the patient to have an understanding of what each result means. The chart provided with the CO monitor can be a valuable visual tool for the patient.

The CO (ppm) reading relates to gas in the lungs and on the breath (i.e. the amount of poisonous CO that has been inhaled).

The CO carboxyhaemoglobin (%COHb) and foetal carboxyhaemoglobin (%FCOHb) readings relate to the percentage of vital oxygen that has been replaced in the bloodstream.

The higher the reading, the higher the risk:

Traffic light colour	Description	Reading (ppm)	
		piCO™ & Micro™	piCO ^{baby} ™
Green	Non-smoker	0-6	0-3
Amber	Borderline	7-9	4-6
1 Red	Smoker – low addicted	10-15	7-10
2 Red	Smoker – moderately addicted	16-25	11-15
3 Red	Smoker – heavily addicted	26-35	16-25
3 Red Flashing	Smoker – very heavy addicted	36+	26+



Explanations for High Readings

- The patient is still smoking, either cigarettes or smoking another substance.
- Anything that causes incomplete combustion (burning) will cause CO e.g. BBQs, candles, traffic fumes.
- Exposure to ambient levels of CO at home or in the car e.g. faulty gas appliances, faulty exhaust pipe.
- Certain occupations may expose workers to high CO e.g. mechanics, machinery operators, chefs.
- If the patient is lactose intolerance.
- Certain medications e.g. some antidepressants, some drugs for epilepsy.
- Use of chewing gum, toothpaste and mouthwash before taking the test.

Infection Control and Cleaning the Machine

- Wash hands before and after testing.
- SteriBreath mouthpieces are single use only.
- The D-piece should be replaced every six months, or more often if visibly soiled.
- It is preferable that the user attaches their own SteriBreath mouthpiece before the breath test, and detaches and disposes of it once the test is complete.
- Whilst the user is exhaling, the operator should avoid positioning themselves in front of the exhaust port of the instrument.

1. The CO monitor is moulded with SteriTouch technology for optimum infection control and bacterial efficacy. However, Bedfont recommends wiping the monitor and D-piece external surfaces with a product specifically developed for this purpose.

2. The D-piece cannot be sterilised. NEVER use alcohol or cleaning agents containing alcohol or other organic solvents, as long term exposure to these vapours will damage the CO sensor inside.

3. Under no circumstances should the instrument be immersed in liquid or splashed with liquid.

Questions or Queries?

Please contact Smokefree South Gloucestershire on [01454 865502](tel:01454865502) or smokefree@southglos.gov.uk