Breath Carbon Monoxide (CO) Monitor Protocol

The EC50 ToxCO+ Breath Carbon Monoxide Monitor and accessories are used by healthcare professionals to determine levels of Carbon Monoxide (CO) poisoning.

Carboxyhaemoglobin (%COHb)

- Carbon Monoxide is a toxic, odourless, colourless, tasteless gas. It is formed from incomplete combustion of organic material at high temperatures with an insufficient Oxygen supply. When inhaled, CO competes successfully with Oxygen in the bloodstream to form carboxyhaemoglobin (COHb). This starves the body tissues of the Oxygen vital to repair, regeneration and general living.
- CO can remain in the bloodstream for up to 24 hours, depending on a range of factors including physical activity, gender and inhalation intensity. The half-life is about 5 hours with no treatment (normal environmental conditions), 1.5 hours if 100% oxygen is given and 0.58 hours if hyperbaric oxygenation at 100% oxygen is given.
- Breath Carbon Monoxide is measured in parts per million (ppm) and blood Carboxyhaemoglobin in percentages (%COHb).
- In fact the two are compatible and convertible, CO relating to lung/breath and COHb to blood gas. The monitor displays %COHb.
- Clinical research has demonstrated that a useful relationship between Carbon Monoxide and Carboxyhaemoglobin is obtained after a short period of breath holding by the person. Although this is not essential to assisting in a diagnosis.
- CO readings demonstrate the levels inhaled of poisonous CO, while the COHb reading shows the percentage of vital Oxygen that has been replaced in the bloodstream.

Instructios for use:

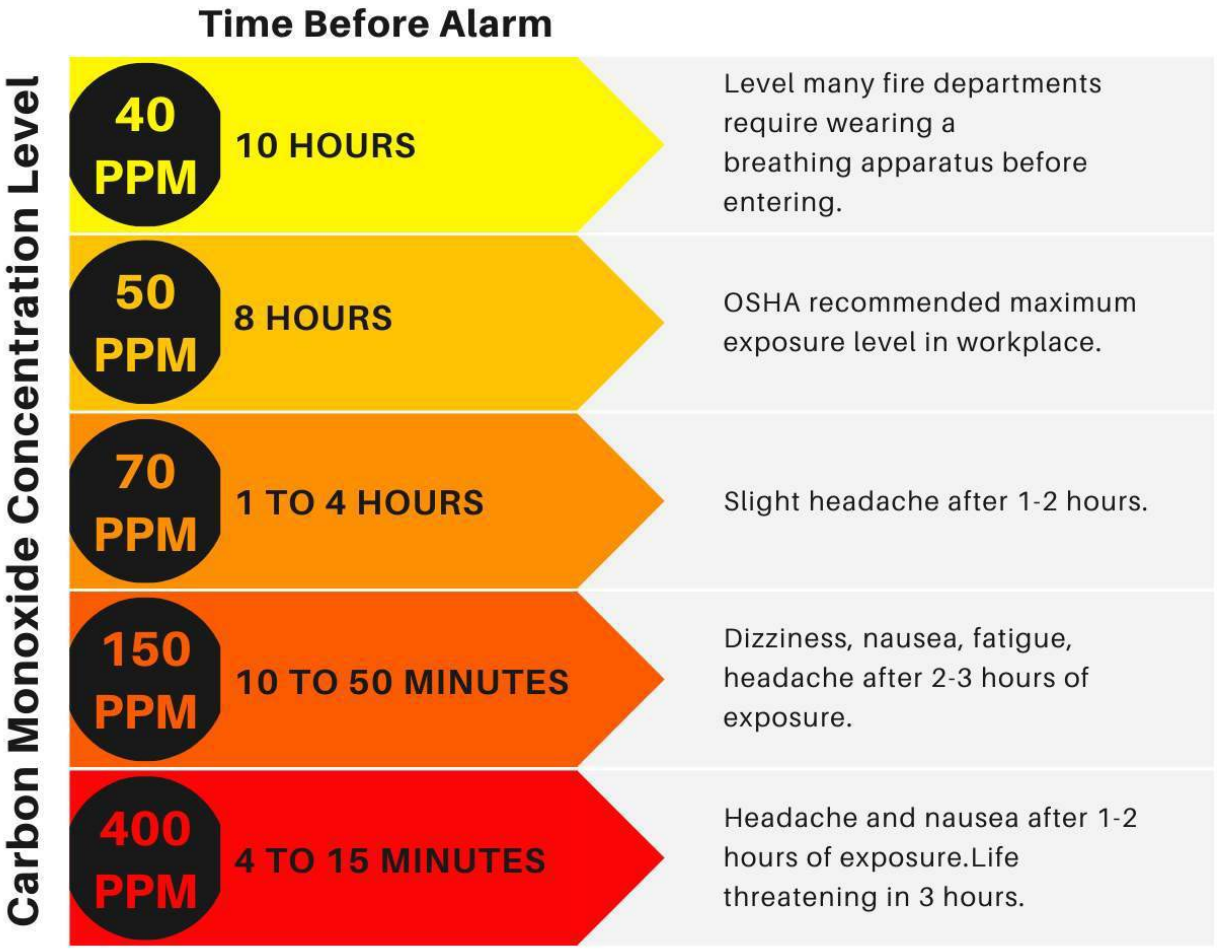
- Switch the instrument on by pressing and holding the On button until the display reads “Bedfont ToxCO+”.
- Release the button and allow the instrument to run through its zeroing routine. The display will flash “ZEROING”.
- While the instrument is zeroing (this takes a small amount of time), ensure that the mouthpiece and Tpiece or the breathing mask is firmly attached to the top of the instrument.
- When the display shows “O.K. ToxCO+”, the instrument is ready for use.
- Press and hold the On button until the display shows “Hold”, then release the button and the instrument will commence a 15 second countdown. The patient should inhale deeply at this point and should hold their breath during this 15 second countdown.
- As soon as the unit reaches zero on the countdown, the display shows “BLOW”. The patient should now exhale slowly and gently into the mouthpiece or breathing mask, emptying the lungs as far as possible.
- The instrument will now show a rising level of %COHb, which should become stable after several seconds, also displaying “O.K.”.
- After the exhaled breath test, the instrument will hold and display the highest level of %COHb. Pressing the On button resets the instrument into the “Hold” mode, so that another test can be performed.
- To recall the last test value, press the Recall button.
- To turn the instrument off, press and hold the On button. If the instrument remains unused for 10 minutes, it will Auto-power off.

8. Observe chest rise during ventilation cycles. Continue to monitor chest rise through out the remainder of patient care.
9. Vital signs are to be taken and monitored every 5 minutes
10. Use end tidal co2 for all patients on vent. Monitor co2 (EtCO2) desired level between 35-45mmHg
11. Personnel shall monitor p.s.i. levels in the oxygen cylinder. Note change out portable oxygen bottle at 500 p.s.i. and main oxygen bottle at 300 p.s.i. **Note: Monitor ventilator as cylinders reach these low levels of p.s.i. and change cylinders earlier if required . The ventilator needs to be able to function properly so change cylinder as needed.**
12. Post Use of vent

    Disconnect Device After Use

    - Turn off oxygen supply to the ventilator.
    - Disconnect oxygen supply hose.
    - Disconnect patient circuit from the output connector and discard properly.
    - Charge after each use once vent is cleaned.
    - Clean and disinfect the ventilator housing and supply hose using a damp cloth with a commercially available, legally marketed disinfectant solution which is compatible with the materials of manufacture in accordance with local protocols. Do not use chlorine based cleaning agents. Make sure no liquids enter the ventilator connections or the ventilator.

Note: There is a refrence guide for use of ventilator in the vent bag if needed.
Caution: The paramedic is responsible for all airway management and must frequently reassess endotracheal tube placement. Bilateral breath sounds are checked after each movement of the patient.



Warnings:

- People with lung disease or chest ailments may not be able to achieve the15 second breath-hold. In such cases, the user should inhale and hold their breath when the ON button is pressed, and exhale, if necessary, before the countdown has completed.
- Mouthpieces should be replaced after use.
- T-pieces should be replaced if contaminated.
- Hands should be washed regularly in accordance with infection control practice.
- Temperature may affect the accuracy of the ToxCO+

Routine Maintenance:

- It is recommended that the following routine maintenance be carried out every six months.
- Calibration using Bedfont calibration gas.
- Replace battery.
- Replace T-Piece.

Cleaning:

- Wipe the instrument and external T-piece surfaces with a product specifically developed for this purpose. Bedfont provides an ‘Instrument Cleansing Wipe’
- NEVER use alcohol or cleaning agents containing alcohol or other organic solvents as these vapours will damage the CO sensor inside.
- Under no circumstances should the instrument be immersed in liquid or splashed with liquid.