

# **Carbon Monoxide Detection and Data Analysis**

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*Louise Laing, August 2023*

# Discussion

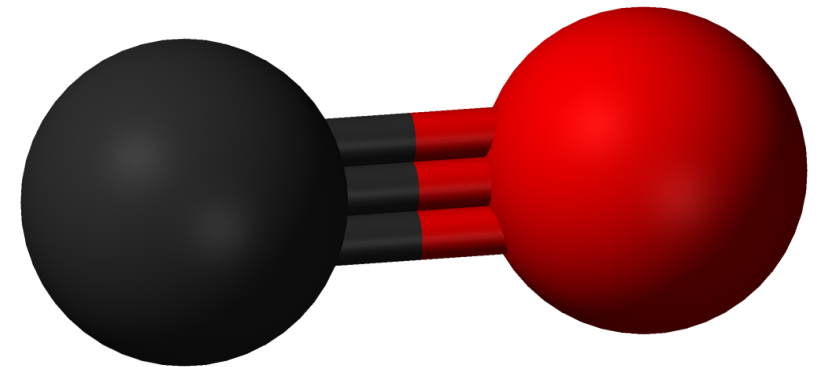
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Carbon monoxide is odorless, colorless, tasteless. It is impervious to our senses and can only be discovered using a detector.

**Remember CO IS NOT Heavier than air**

## Topics:

- Various types of detection
- The value of using a cloud data service
- The need for installation, maintenance, and repair technician to consistently use personal CO detectors



# CO Detection

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*Types of Detection*

# Ceiling/Wall Mounted Detection



- In alarm or not in alarm
  - CO sensor will not alarm to levels of CO below 30 ppm and will alarm in the following time range when exposed to the corresponding levels of CO
  - 70 ppm CO Concentration 60 –240 minutes
  - 150 ppm CO Concentration 10 –50 minutes
  - 400 ppm CO Concentration 4 –15 minutes
- 3<sup>rd</sup> party monitoring companies will have data to show which devices go into alarm BUT they do not track PPM levels

# Duct Mounted CO Detector

## What does it do?

- Samples air in the duct to help prevent the spread of CO
- If it senses CO; relays will switch off appliances
- The remote indicator is a horn, strobe with key reset
- Alarm Levels
  - 50ppm / 8H
  - 70ppm / 2H
  - 150ppm / 15M
  - 400ppm / 5M
- Data can be downloaded with software



# How can we detect all levels of Carbon Monoxide

## Personal monitors

- Real time readings
- Adjustable low and high alarms
- We recommend 4ppm, Low alarm and 30ppm, High alarm
- These type of devices can be set to various alarm levels



# Who Should Have a Personal CO Monitor



**The Mission = Everyone**



# Technicians/Contractors

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*The need to consistently use CO detectors*



# Technicians and Contractors

CO Personal Monitors  
Save Lives, Improving  
Quality of Life and Creates  
Revenue



## Why?

- Know real time readings
- Investigate source of CO leaks
- Fix or replace appliances
- Tell the owner of the issue so they can seek medical assistance
- Set up regular maintenance programs

# The value of using a cloud data service

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*Example “Crowcon Connect”*

# CROWCON CONNECT

- ✓ **Quick User Assign** enables you to tie a detector's exposure, events and gas logs to each user automatically, using existing technology so you can reduce losses and improve safety
- ✓ **Powerful insights** relevant to you and your business, ensuring you get the data you need to drive improvements
- ✓ **Fast, secure, automatic data upload-** either wired or wireless at the point of charge to match your processes
- ✓ **Fleet wide data in one place,** avoiding timely asset management and complex compliance evidence gathering which are costly and kill efficiency



## CROWCON CONNECT



# Summary

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How cool would it be for:

1. Everyone having a personal monitor for everyday use, vacations, workplace, shopping etc
2. Fire Fighters, Contractors and Technicians knowing real time readings during the daily workday
3. Easy cloud-based data management so we know what the exposure rates really are

**Summit Special:** \$74 for a 2-year personal monitor

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# Invasive vs. Non- invasive CO Detection on the Human Body

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*Co-Oximeter vs. Blood Test vs. Breath Test for Carbon Monoxide*

# 3 Different Ways a CO reading can be performed on a person

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1) Co-Oximeter (Finger Clip)

Non-Invasive

2) Blood Test

Invasive

3) Breath Test

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# Co-Oximeter

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*FDA Approved for monitoring not Diagnostics*



# Disadvantages with Finger Clip

- 1) Outside light interference (black sheath)
- 2) Finger positioning, children sized fingers
- 3) Skin thickness or color may interfere
- 4) Durability, no cord to break
- 5) Cost of device expensive



# CO Blood Test

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## Hospital

- spectrophotometric measurement in specific blood gas analyzers.

**Not a Field Test**  
Available

# CO Breath Test

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A breath test would be considered non-invasive because it is coming from a breath inside the body. Since you have to breath anyway, a breath test is an easy way to assess CO even into the poisonous range. Advantages and accuracy of a CO breath test is cleared by the FDA as a diagnostic device, where the finger clip CO device is not.

- 1) Readings are conducted at the alveolar level in the lungs where gas exchange occurs
- 2) You can use our device on a sunny day, no light interference whether ambient or ultraviolet
- 3) Nail polish or lotion on your hands not an issue
- 4) Children readings with breath and CO is fine, no restrictions or changes to the device
- 5) Durability – no cord to break
- 6) Minimal Breath can still obtain a reading
- 7) Cost

# Breath Tubes

Cardboard 22mm

Tubes with Spatum Filter

Plastic Tubes

Straws

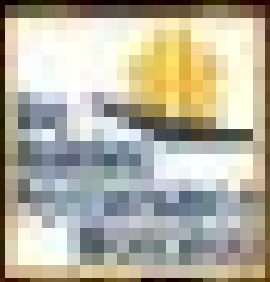


# Conclusion

A rapid way to test for CO in the Field or for Post Fire Rehab, the clear choice is a breath test. A Carbon Monoxide field blood test is not available. If a person has SPO2 (Oxygen Concentration) below 85%, the Co-Oximeter COHb function, no longer operates.

## CO Monitors





Healthy Homes

# CARBON MONOXIDE MONITORS

MYTHBUSTED

