



Using a carbon monoxide monitor



Monitoring carbon monoxide levels is a great way to engage patients in a conversation about quitting smoking.

A carbon monoxide monitor is a motivational tool that can be used as part of a smoking cessation intervention. It can provide an estimate of the level of dependency and the degree of harm from smoking.

What does a carbon monoxide monitor measure?

A carbon monoxide monitor measures the amount of carbon monoxide in the breath (ppm), which is an indirect, non-invasive measure of blood carboxyhaemoglobin (%COHb).

Carbon monoxide successfully competes with oxygen in the blood. The percentage of COHb is the proportion of red blood cells carrying carbon monoxide instead of oxygen. People who smoke have between 5–20% less oxygen in their blood than non-smokers.

Carbon monoxide leaves the body rapidly and is halved within around five hours. Within 24–48 hours of not smoking, the carbon monoxide level in a person's breath will reduce to that of a non-smoker.

How does a carbon monoxide reading help engage a patient in smoking cessation?

A carbon monoxide reading can alert the patient to the dangers of smoking and encourages them to make a quit attempt.

Carbon monoxide monitoring allows health professionals to have a conversation with patients who smoke that wouldn't otherwise be possible without this type of personal biofeedback. It can also help keep the patient interested and connected to treatment.

It may be useful to use the monitor at subsequent visits, including after a patient has stopped smoking, to maintain motivation to quit.

Importantly, the carbon monoxide monitor should not be used in a punitive way and/or to validate whether a patient has smoked.

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How to use the Micro+ Smokerlyzer carbon monoxide monitor

1

Explain to the patient what the carbon monoxide monitor measures and that this is a routine tool used in cancer treatment with people who smoke (and those exposed to second-hand smoke).

2

Attach a D-piece to the carbon monoxide monitor and insert a steri-breath disposable tube.

3

Ask the patient to take a breath and keep holding for a 15-second countdown. Two short beeps will sound during the last three seconds of the countdown.

4

At the commencement of a long beep, ask the patient to blow slowly into the mouth piece (for at least five seconds), aiming to empty their lungs completely.

5

The carbon monoxide ppm and equivalent percentage of carbon monoxide haemoglobin (COHb) levels appear on the screen. The coloured LED will light accordingly. For interpretation of the reading, refer to the chart included with the monitor.

Notes:

- It takes 24–48 hours for carbon monoxide levels in a person's breath to reduce to that of a non-smoker; but three months before it leaves the blood. If a patient smokes just prior to using the carbon monoxide monitor, their reading will be higher than usual.
- Never use alcohol or cleaning agents containing alcohol or other organic solvents. Long-term exposure to these vapours will damage the carbon monoxide sensor inside the monitor. Bedfont® provides instrument cleaning wipes specifically for this purpose.
- The carbon monoxide monitor does not measure alcohol, cannabis or other substances.
- Refer to the monitor's operating manual for information on correct use, calibration, maintenance and troubleshooting.

Related resources:

- *Managing Nicotine Dependence: A Guide for NSW Health Staff*, NSW Ministry of Health, 2015.
- *Using an expired carbon monoxide monitor*, NSW Ministry of Health, 2018.

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