

## **About The Breath CO**

The Vitalograph Breath CO measures the amount of a toxic gas called carbon monoxide (CO) present in your blood. Carbon Monoxide is one of the products of combustion (burning). It is present in car exhaust fumes and is the gas that kills people who commit suicide by feeding exhaust gases back into their cars.

Non-smokers have very low levels of CO in their blood but smoker's levels are usually much higher. The heavier the smoker, the higher the CO levels and the greater the dependence on nicotine. Having high levels of carbon monoxide in your bloodstream is very dangerous to health and smoking is therefore, a kind of 'slow-motion suicide'.

### **Features & Benefits of Breath CO:**

1. Portable (Battery Operated)
2. Light Weight: 284grams
3. Ease of use, simple, single breath (30 sec. test)
4. Robust & reliable
5. Compact (180mm x 100 mm x 45mm)
6. Electrochemical Sensor
7. Organic compounds & hydrogen filter avoids false positive readings

### **Why is carbon monoxide dangerous to health?**

Carbon Monoxide is a poisonous gas. Having high levels of CO in your blood is dangerous for two main reasons. Firstly, it displaces the oxygen that should be circulating in your bloodstream and secondly, it makes your blood thicker and stickier. This makes it more and more difficult for your heart to pump enough blood & oxygen around your body. That puts a great strain on your heart and is the reason why so many smokers die of heart disease before their time. It also makes it more likely that your blood will form dangerous clots that could lead to a stroke.

### **How the Breath CO helps you to quit smoking**

Checking your CO level will help you to decide what type of treatment and support you are likely to need to quit successfully. Re-checking it at regular intervals after quitting, will allow you to see the change in your readings as you progress through the first week and beyond.

## **Frequently Asked Questions:**

### **Q. What does a CO breath test show?**

A. It shows the amount of carbon monoxide (ppm CO) in breath, which is an indirect, non-evasive measure of blood carboxyhaemoglobin (%COHb).

### **Q. What does ppm mean?**

A. Parts Per Million. In this case one part CO in one million parts air (breath). 1ppm is like 1 inch in 15.5 miles!

### **Q. How does smoking elevate COHb?**

A. In a 'typical' puff of a cigarette smoke there is about 5% by volume CO. This will compete with oxygen very successfully to form COHb (combination of CO and blood). This will eventually be excreted via the lungs; the same way it went in!

### **Q. What else does breath CO show?**

A. It acts as an indicator as to the possible level of some 4000 toxic substances in cigarette smoke, some 60 of which cause cancer.

### **Q. How quickly does the CO disappear from the body after smoking stops?**

A. It takes about 5 to 6 hours to reduce the original level by a half. Usually after a maximum period of 48 hours the ex-smoker would show the level of a non-smoker living in the same environment.

### **Q. How long after a cigarette should the test be conducted?**

A. More than 10 minutes.

**Q. What levels of breath CO do you expect to see?**

A. Clinical research has shown that the best guidelines are (ppm):

- 0 -10: non-smoker
- 11 - 20: light smoker
- 21 - 100: heavy smoker

**Q. If a smoker cuts down; will this reduce breath CO by an equivalent amount?**

A. Probably not. A smoker may smoke fewer cigarettes, but will require the same amount of nicotine. Thus, they may smoke smaller number more aggressively and hence inhale more smoke than expected (and thus more CO).

**Q. Is it necessary to hold the breath before taking a test?**

A. Not absolutely necessary. Clinical research has shown that an optimum period of 20 seconds breath hold is required to get the best correlation with COHb. A 15-second breath hold gives almost the same correlation. Less than this will depress the breath reading. However, as long as the person is encouraged to exhale completely, this 'end-tidal' breath sample will give a good indication.

**Q. Do cigars and pipes give low readings?**

A. No. On the contrary. An inhaled puff of pipe or cigar smoke is much more concentrated and will give surprisingly high COHb.

**Q. Why do non-smokers sometimes give higher than expected readings?**

A. This could be for several reasons:

- They have been exposed to high ambient levels of CO. For example, at home or in the car. It could be useful to check other family members in order to eliminate possible chronic CO poisoning.
- Certain occupations may expose workers to high CO levels. The liver to produce COHb metabolizes a degreasing agent called trichloroethylene.
- Some CO monitors may have a cross interference from other breath constituents. The most likely ones are alcohol and hydrogen. The latter maybe present due to a gut condition called lactose intolerance an allergy to dairy products that produce hydrogen gas in the intestines. Some of this gas maybe excreted via the lungs. This condition exists in about 5 to 15% of Northern Europeans.

**Q. How hygienic is the test?**

A. A new disposable cardboard mouthpiece is used for each person taking the test. They are designed to be one use only. These mouthpieces usually fit into a connecting device to the CO monitor itself. With Breath Co, a T-piece is used to 'trap' and end-tidal breath sample between two non-return valves. These valves also stop people 'sucking back' air through this T-piece. These devices can also be sterilized by solution or autoclave.

**Q. Can I use your mouthpieces on other CO monitors?**

A. Yes. Our Mouthpieces are universal.