

# The Smokerlyzer® Breath CO Test Instructions and Tips

**Important: Please Read Before You Begin Using Your Smokerlyzer®**

This document is intended for treatment professionals,  
it is **NOT** a hand-out for smokers, patients or test subjects.

1. **This guide is broken into three sections:** “Pre-test Instructions”, “During the Test Instructions” and “Helpful Tips”. This information is designed to help you conduct a test and to obtain consistent results with each subject.
2. The **tips at the end of the document** address many common concerns.
3. Make time to **practice the test**. Deliver your instructions clearly and confidently.
4. **Remember, this is your test**. Do not let the test subject dictate the performance of the test or the results. *You’re* in charge of the situation, not the test subject.
5. **Call coVita** at the number below for questions and support.

## Typical Smoking Ranges

The “non-smoker range” is based on published data, while the other ranges provided are only meant to be guides of the typical expected levels.

Compensatory smoking and inhalation intensity make it difficult to classify smokers in exact ranges. When analyzing a reading, remember to consider non-cigarette sources of CO including marijuana, cigars or other burning substances. The ranges below will be observed within 1-2 hours of smoking:

### 0-3 PPM | Non-Smoker Range

Non-smokers and former smokers typically register between 0-4 ppm, and while it is uncommon, you can have non-smokers up to 6 ppm. 0 ppm is not the goal of the test as very few non-smokers will ever register 0 ppm or stay at that level consistently. Subjects should be made aware that between 0-4 is considered normal and within this range, their level could fluctuate daily, up or down, within 1 to 2 ppm.

### 4-6 PPM | Light Smoking Range

Typically observed when smoking under a pack of cigarettes a day.

### 7+ PPM | Heavy Smoking Range

Typically observed when smoking over a pack of cigarettes a day. Remember to consider compensatory smoking. i.e. a smoker might cut back their smoking from a pack to half a pack of cigarettes a day but their body still requires the same amount of nicotine. To compensate, they smoke those fewer cigarettes harder leaving both their nicotine intake and CO level relatively unchanged.



## Test Instructions

### *Instructions for Pre-Test and During the Test*

**Use our six easy steps to successfully conduct tests with your Smokerlyzer®.**

Brief the subject with three pre-test instructions, then deliver three more instructions during the test.

We have provided the steps in a script format, to help you to convey these instructions to the subject being tested. You can adapt these instructions to a format that best suits your testing needs, but be sure to keep the basic elements of each step.

#### Pre-Test Instructions

**Explain the following before starting the test:**

##### **Step 1 – Define the Sample Needed**

Say: *“The goal of the test is for you to empty your lungs, by slowly pushing out as much air as possible.”*

##### **Step 2 – Explain Breath Hold and Countdown**

Say: *“When the test begins, you are going to take a deep breath in and I’m going to hand you the tester to hold while the tester counts down for a few seconds. Once started, please don’t talk until the test is finished.”*

##### **Step 3 – Describe the Exhalation Process**

Say: *“When the countdown reaches level 2, you are going to place your mouth over the cardboard mouthpiece and exhale slowly, pushing all of the air out of your lungs.”*

#### During the Test

##### **Step 1 – Breath Hold**

Say: *“Take a deep breath in and hold it.”*

Start the tester’s countdown as they breathe in, then hand them the tester to hold.

##### **Step 2 – Countdown**

As they hold their breath, say:

*“Don’t put your mouth on the mouthpiece until you’re ready to exhale and remember not to talk until the test is finished.”*

Watch the countdown to know when the subject should be blowing into the tester.

##### **Step 3 – Exhalation**

When the countdown reaches level 2, say:

*“Put your mouth over the mouthpiece and begin exhaling slowly. Push all of the air out nice and slowly; try and empty your lungs.”*

When the subject is finished exhaling deeply and completely, they can hand the tester back to you.

## Helpful Tips

### 1. Deep Breath:

A deep breath means inhaling deeply, filling the lungs with air.

### 2. No Practice Breath Holds:

Practice breath holds could affect the concentration of CO in the sample.

### 3. End-Tidal Breath Sample:

This refers to the bottom air in the lungs, which will have the most significant effect on the reading. Pushing out as much air as possible ensures that this portion of the sample is included.

### 4. Where to Take the Test:

Avoid testing in any area where there is the potential for interference from the presence of CO from other sources, or from chemical contamination (such as formaldehyde).

### 5. When to Take the Test:

Wait a minimum of 15 minutes after smoking a cigarette to avoid blowing smoke in to the monitor and to give the CO a chance to metabolize in the subject's body. Carbon monoxide can be detected in body for approximately 24 hours after smoking. Time of day for testing is up to the preference of the end-user.

### 6. Starting the Countdown:

As the subject takes a deep breath in, initiate the countdown by pressing and releasing the button on tester.

### 7. When to Exhale:

The countdown reaches level 2 on the tester, signifying that it is time to exhale. The most important part of the sample is the end-tidal portion, so don't worry if they blow a few seconds early.

### 8. Don't Reference the Breath Hold Period:

15 seconds sounds like a long time, so it's a good idea to avoid referencing the length of time. Help the countdown pass unnoticed by reminding the subject of what is expected of them when the countdown is finished.

### 9. Minimum Breath Hold Period:

Data supports a minimum of a 15 second breath hold.

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## Helpful Tips

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### 10. Standing vs. Sitting:

A person's breathing may be restricted while sitting, hindering their ability to take a deep breath and exhale fully. If a person can't stand, then have them sit as upright as possible.

### 11. Let the Subject Hold the Tester:

After the countdown has been initiated, hand the tester to the subject. Allow them to hold it while they are giving the breath sample.

### 12. No Talking:

Advise the subject not to talk once you start the test. This seems to be most effective when you say it while they are holding their breath and waiting for the countdown. Restart the test if they do talk.

### 13. Wait to Put the Cardboard Mouthpiece into the Mouth:

Don't have them put their mouth on the cardboard mouthpiece until the countdown is finished.

### 14. A Good Seal on the Mouthpiece:

The disposable cardboard mouthpiece should be placed inside the mouth, with the lips securely sealed around it, to prevent any escape of the breath sample.

### 15. Exhale Slowly & Completely:

They should continue exhaling until they can no longer push anymore air out of their lungs. The tester will continue to analyze the sample until the reading stabilizes.

### 16. Coaching the Subject:

Begin coaching immediately after the three beeps of the countdown as they begin to exhale, by saying something like this: *"Put your mouth over the mouthpiece and begin exhaling slowly. Push all of the air out nice and slow, try and empty your lungs."* Coaching will help set a pace as they exhale.

### 17. Interference from Alcohol:

Your tester should never be in the presence of any alcohol-based products (such as Purell or rubbing alcohol), as this can interfere electrochemical sensor in the tester. Only use approved alcohol-free hand sanitizers and wipes around your tester.

**Please refer to your coVita | Bedfont User Manual  
for detailed operating instructions.**