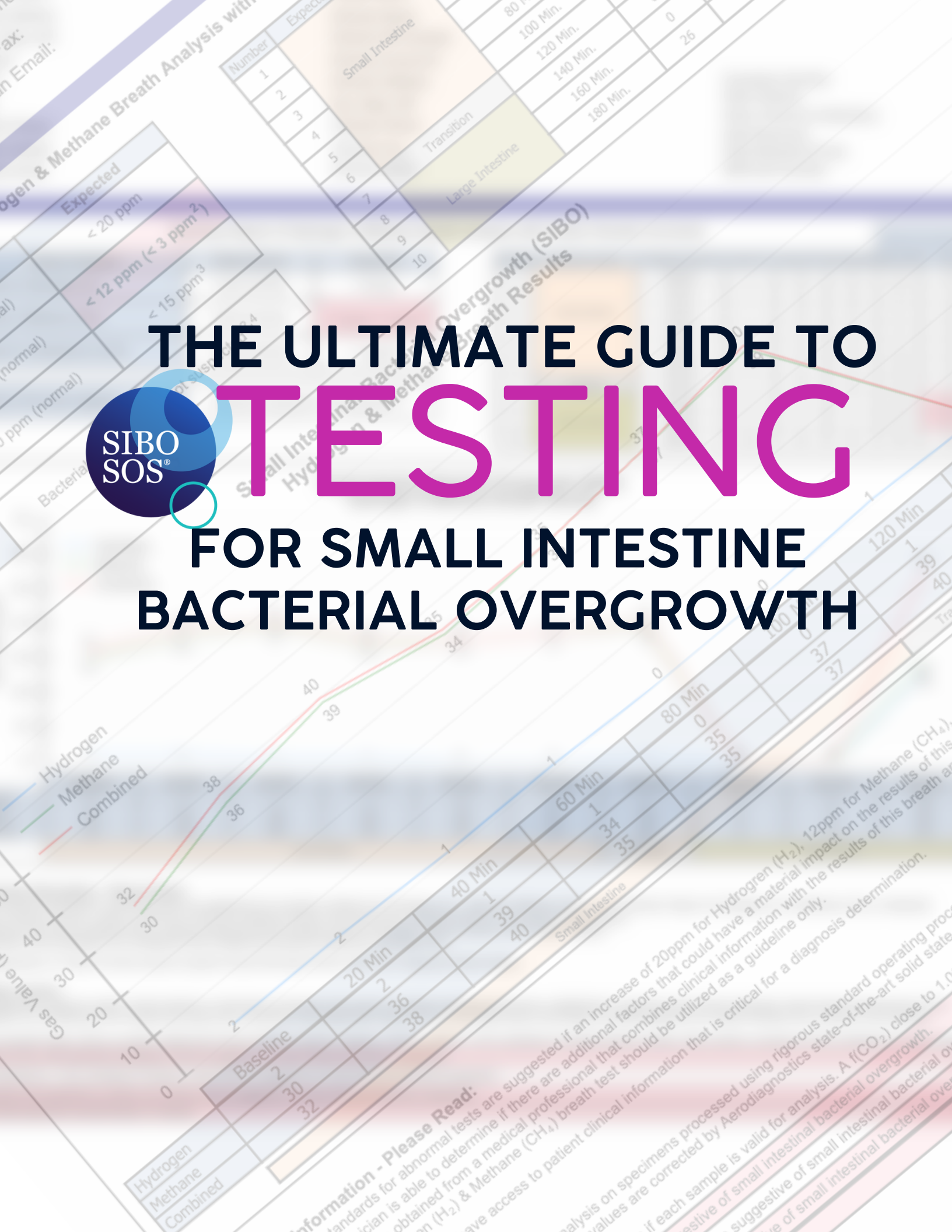
THE ULTIMATE GUIDE TO TESTING FOR SMALL INTESTINE BACTERIAL OVERGROWTH

SIBO SOS®



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The Ultimate Guide to Testing for Small Intestine Bacterial Overgrowth (SIBO)

So you think you have Small Intestine Bacterial Overgrowth? There's only one way to know for sure - with proper testing!

But getting tested for Small Intestine Bacterial Overgrowth (SIBO) isn't as simple as a quick blood draw or exam - it requires a specialized test.

And even more importantly - SIBO cannot be diagnosed based on symptoms, which means testing is a true necessity!

I'm Shivan Sarna, a **SIBO patient-turned-advocate**. Testing is a topic close to my own heart, because I almost wasn't diagnosed with SIBO! If I had not found someone who really knew how to read the test, I would never have found out I had SIBO. (And I would still be suffering with painful symptoms, if I hadn't finally connected with the experts who shared the correct information).

I want to save you that time!

Look, if you don't have SIBO - awesome, but that no gets you closer to a yes as to what you do have. If it is SIBO that moves you forward too. If you test, you know.

Here's my story: I suffered with **Irritable Bowel Syndrome** from the time I was 5 years old - basically, my entire life. Sometimes it was worse than others, and in 2014 it was the worst it had EVER been.

On paper my life was great - married to the love of my life, working my dream job as a host on HSN - but behind the scenes I was uncomfortable, embarrassed, bloated, and in pain everyday.

Travel, eating out, and exercise had all become torture. When I wasn't working, I just wanted to stay under the covers. It was no way to live!

I was trying to get better - doing the classics like eating more fiber and an apple every day. (Turns out those "healthy habits" were actually making me feel worse!) I knew I had to try something else.

That's when a friend told me about a condition she had just learned about- SIBO. I called my gastroenterologist and practically demanded to be tested. I had my test at the University Of South Florida.

A few weeks later, I got the call from my doctor: **the test was negative!**

I was SO (weirdly) disappointed - I really thought SIBO explained all my symptoms.

Luckily, I didn't give up then. I was on a mission and knew something was wrong and someone had to know what it was. I decided to start seeing a new doctor, and he requested my test results. I'd never actually seen the graph of the results. I just heard it was negative and

that was that. ... and when they arrived at his office, we were both shocked.

Right there on the results was the word POSITIVE crossed out;and underneath it... negative. My test results were actually positive! I DID have SIBO!

Sadly, this story isn't uncommon. Testing for SIBO is complex both in execution and interpretation, and the results are often inaccurate as a result of some small mistake along the way.

That's why it is absolutely critical that you don't just trust someone else to administer and interpret the test properly. It's time to take your health into your own hands and be certain you're getting the best care possible.

Over the years, I've done many more SIBO tests, interviewed the people who develop and perform the tests, and worked with the top SIBO doctors in the world. By now, I know a thing or two about testing!

Today, my goal is to share all of that knowledge with you - from the science of how the test works to practical tips for making the whole process less miserable, and even the basics of interpreting test results.

There's no need to feel confused or overwhelmed. There are proven methods for effective, accurate testing, and this guide will teach you everything you need to know.

XOXO,

Shivan

Why You Must Test for SIBO

If you suspect Small Intestine Bacterial Overgrowth, testing is essential. **You can't skip it!**

First, testing is the ONLY way to know for certain that you have SIBO. The symptoms of SIBO can be quite nonspecific - things like bloating, constipation, diarrhea, and gas can be caused by SIBO or many other conditions. And, SIBO can't be seen or felt on a physical exam.

Even if you have every single symptom of SIBO, it can't be diagnosed without a test.

Why does it matter that you really have SIBO and not some other condition?

Well, what if you actually have Celiac Disease, but it is mistaken for SIBO?

SIBO doesn't require a gluten-free diet - but Celiac Disease certainly does! And if you continue eating gluten with undiagnosed Celiac, you will get more and more sick.

Or imagine you assume your chronic gut pain and bloating are SIBO... only to later find out it's actually ovarian cancer!

These are VERY rare instances, since SIBO is much more common than Celiac or ovarian cancer - but they underline the importance of getting tested.

But there's another REALLY important reason to get tested for SIBO:

Testing Guides Your Treatment

Testing will not only reveal what TYPE of SIBO you have, but also how SEVERE your SIBO is.

Different types of SIBO require different treatments. And different treatments have different levels of efficacy.

Imagine if you have very severe methane-type SIBO... but you keep doing a treatment more appropriate for mild Hydrogen-type SIBO. That's a recipe for frustration.

Bottom line: testing is absolutely essential.

The 3 Types of SIBO

Quick reminder: there are 3 different types of SIBO - **hydrogen**, **methane**, and **hydrogen sulfide**. (As of 2020, methane-type SIBO is also called Intestinal Methanogen Overgrowth or IMO.)

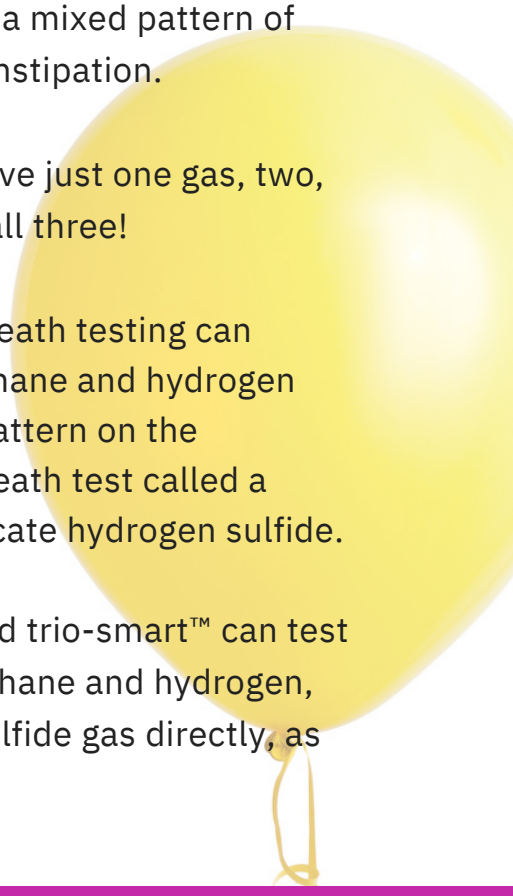
Hydrogen, methane, and hydrogen sulfide are 3 different types of gas created by overgrown bacteria as they ferment food in the small intestine.

Methane overgrowth is associated with constipation, hydrogen overgrowth is associated with diarrhea, and hydrogen sulfide is associated with a mixed pattern of diarrhea and constipation.

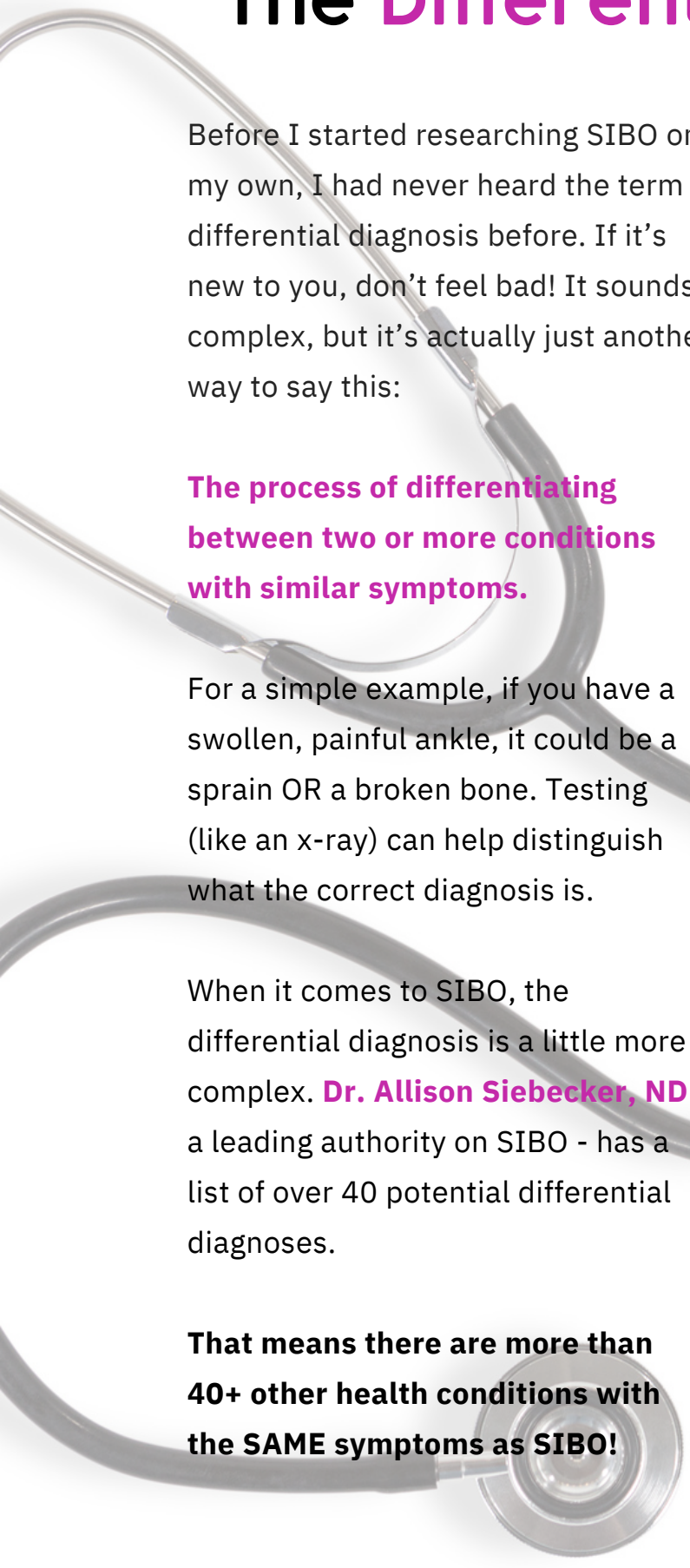
A person can have just one gas, two, or a mixture of all three!

Conventional breath testing can distinguish methane and hydrogen gas. A special pattern on the conventional breath test called a flatline can indicate hydrogen sulfide.

A new test called trio-smart™ can test for not only methane and hydrogen, but hydrogen sulfide gas directly, as well.



The Differential Diagnoses



Before I started researching SIBO on my own, I had never heard the term differential diagnosis before. If it's new to you, don't feel bad! It sounds complex, but it's actually just another way to say this:

The process of differentiating between two or more conditions with similar symptoms.

For a simple example, if you have a swollen, painful ankle, it could be a sprain OR a broken bone. Testing (like an x-ray) can help distinguish what the correct diagnosis is.

When it comes to SIBO, the differential diagnosis is a little more complex. **Dr. Allison Siebecker, ND** - a leading authority on SIBO - has a list of over 40 potential differential diagnoses.

That means there are more than 40+ other health conditions with the SAME symptoms as SIBO!

But what's extra tricky is that many people can have SIBO and another condition that causes the same symptoms - at the very same time!

For example, you might be lactose intolerant (unable to digest the sugar in dairy milk) AND have SIBO... so even if SIBO was resolved, if you continued to consume lactose, you'd continue to have symptoms.

It's really important to consider the differential diagnosis for 2 main reasons:

1) If you have SIBO, treat the SIBO, but don't feel better, it may be because you have another condition that causes the same symptoms, as well

2) If you don't have SIBO, but have all the symptoms, it may be due to a different condition.

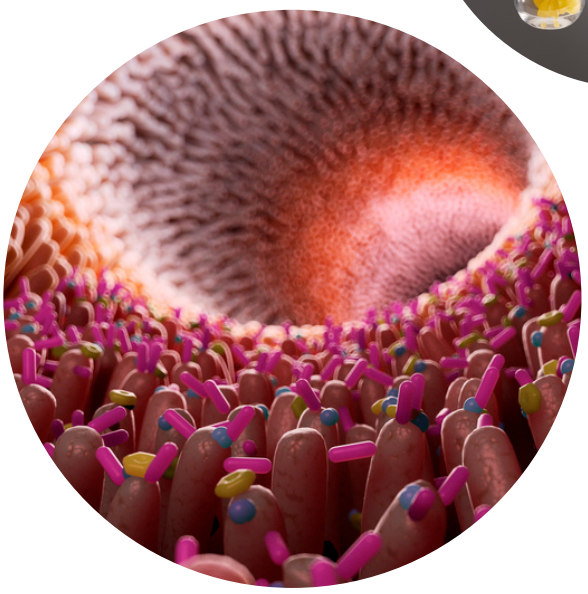
When should I consider the differential diagnosis?

Keeping the possibility of a different or secondary condition in mind from day 1 is a good idea - but don't let yourself get too caught up until you've had testing for SIBO!

Here's my advice: skip this section for now and only come back if your SIBO test was negative.

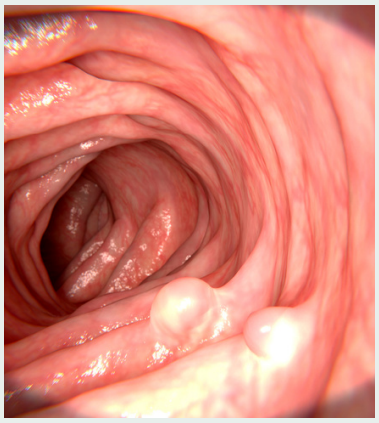
Other conditions that cause the same symptoms as SIBO:

- Yeast Overgrowth
- Parasites
- Large intestine bacterial disorder (overgrowth or dysbiosis)
- H. pylori infection
- Celiac disease / non-Celiac gluten sensitivity
- Inflammatory Bowel Disease
- Carbohydrate malabsorption
- Food sensitivity or allergy
- Hypochlorhydria
- Pancreatic enzyme insufficiency
- Hypo- or hyperthyroidism
- Bile acid malabsorption
- VIPoma / Zollinger-Ellison Syndrome
- Endometriosis



How to Get Tested for SIBO

There are 3 ways to be tested for SIBO - but one is definitely better than the rest. Let's go over them all.



ENDOSCOPY WITH CULTURE

This was once the "gold standard" test, but is now not commonly used.

BLOOD TEST FOR IBS

This simple blood test can ONLY diagnose Post-infectious IBS, not SIBO - but it is often recommended as a first step, since most people with post-infectious IBS have SIBO. It still needs to be followed with a breath test.

THE SIBO BREATH TEST

The breath test is the modern-day Gold Standard of SIBO testing. Not only can it diagnose SIBO, but it can tell you which type and at what severity you have it. This is the type of testing I'll cover in-depth in this guide.

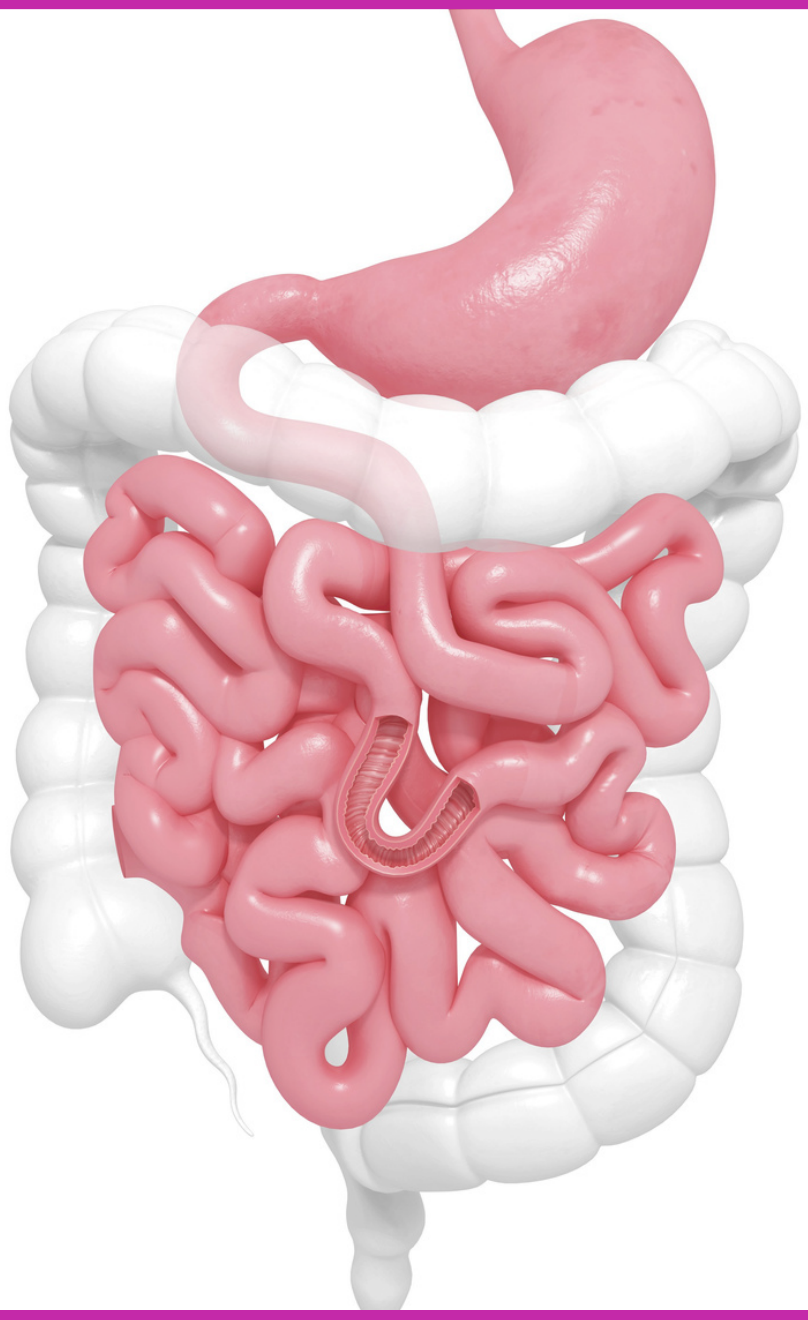
Don't Be Fooled - These Tests CAN'T Diagnose SIBO!

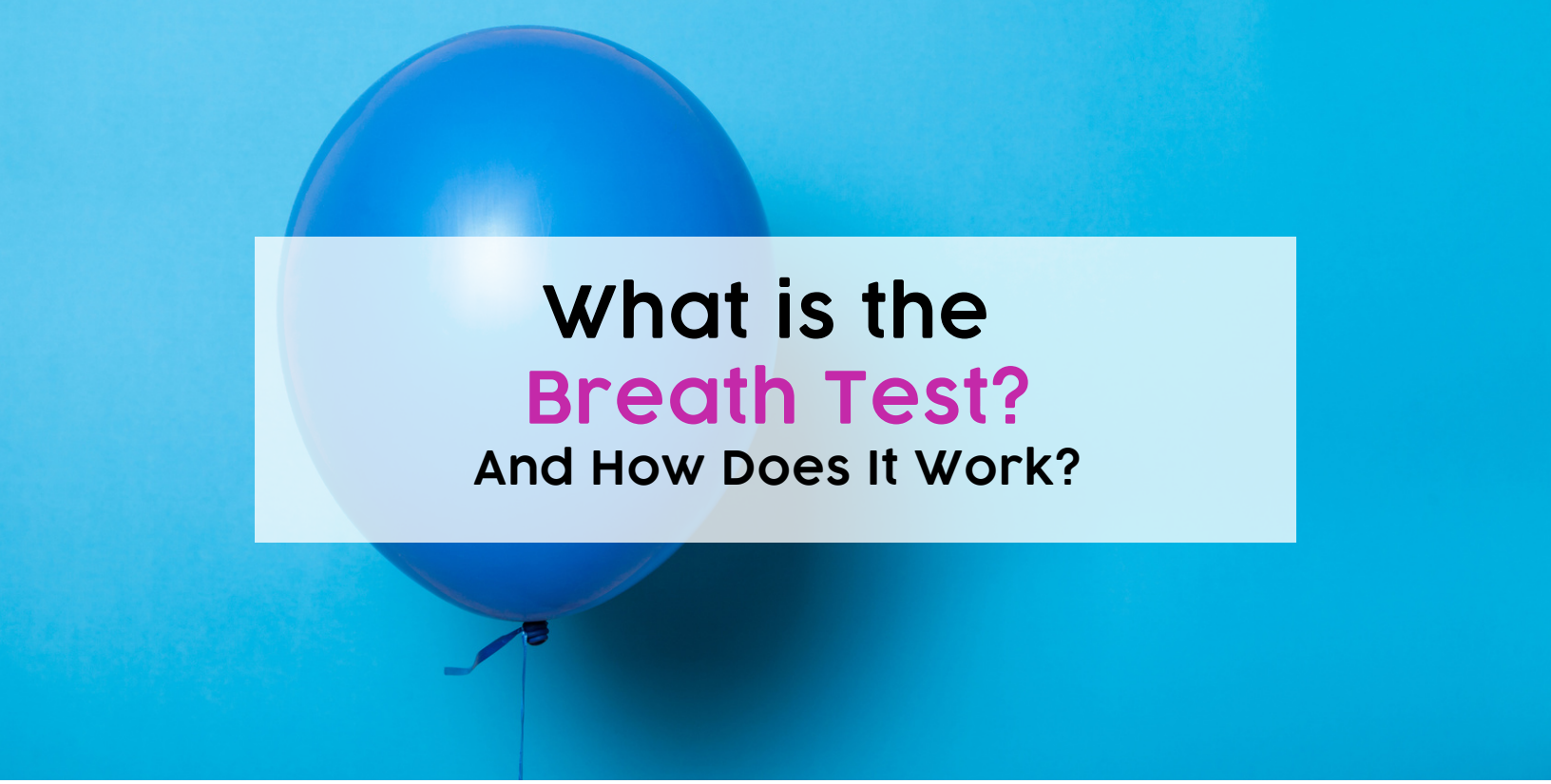
There's a lot of misconceptions about testing for SIBO, and a big one is that two kinds of tests can be used to diagnose SIBO (but they really CAN'T): **stool tests** and **urine organic acids tests.**

Stool tests, which look at bacteria in the stool, only give a picture of what is happening in the LARGE intestine, not the small intestine. They can detect a dysbiosis or overgrowth only in the large intestine.

Organic acids urine tests can also detect dysbiosis, but they cannot differentiate between the small and large intestine. That means you may find out you have an overgrowth, but don't know where it is, and therefore can't treat it effectively.

If you've been told you do or don't have SIBO based on a stool or urine test, it's time to retest properly with a breath test and get the accurate information!





What is the Breath Test?
And How Does It Work?

The first time I heard of a breath test I assumed it was like a breathalyzer used by police when they suspect drinking and driving. It turns out this was partially right and partially wrong: in a SIBO breath test you do breathe in to a collection device, but the device isn't looking for alcohol - it's looking for gas!

With SIBO, overgrown bacteria "eat" undigested carbs in the small intestine and produce gas that can't be produced by humans.The breath test works by measuring the gas produced by the bacteria in your breath.

Basically, you'll "feed" the bacteria a sugar solution (called the substrate), then breathe into a collection device (which looks like a tube and/or a plastic bag). A specialized machine then analyzes how many parts per million of gas there are in your breath.

Breath tests for SIBO take place over several hours and require a special prep diet to get ready for an accurate test.

While the concept of drinking the solution and breathing into the collection device is simple enough, the breath test is ebay to mess up (I know, as I've messed up many myself!). My goal with this guide is to give you ALL the information you need for accurate breath testing the first time.

Is Breath Testing Legitimate?

I'll be the first to admit it: there is some serious controversy around breath testing. Some people (wrongly) believe breath tests are wildly unreliable and pretty much good for nothing.

Why?

I think it has to do with the many different types of breath testing that are available... as you will learn in the coming sections of this book, you can mix and match to make a huge number of different breath tests, and every variable you change will impact the reliability of the test.

If you choose the wrong length of test - or the wrong substrate (that's the sugar solution) to drink, you might NOT get a reliable result... but that doesn't mean all breath tests are bunk!

In fact, the right breath test is the best test we have for SIBO. And in this guide, I'm going to make sure you have ALL the information you need to properly choose the right test for you, for the most reliable results.

Choosing the Right Test!

When choosing the right breath test, there are several factors to consider:

Where the test will be performed	What substrate will be used	Length of the test

Some of these factors don't matter much or a matter of personal choice - but others can mean the difference between a false positive or negative result.

Let's break down each one.

Lab versus Home Testing

One cool thing about SIBO Breath Testing is that it can be done in a lab or doctor's office OR completed in the comfort of your own home - and whichever way you prefer to be tested, both are equally accurate when done correctly.

Having done both, **I much prefer the ease and convenience of home testing**.

If you are getting tested in a lab, one tip I have is to **double check the substrate** and duration of the test being used, since many labs don't often perform breath tests and may be unfamiliar with best practices!

If you choose to test at home, you'll be mailed a special kit with complete directions and all the collection tubes, plus the substrate. After you finish the test, you simply mail it back to be analyzed. Test samples can remain at room temperature for as long as 14 days after testing, so there is plenty of time to mail back your samples and get results.

Which Substrate is Right?

In breath testing, the substrate is the sugar solution you will drink after giving your first sample (the baseline) that "feeds" the bacteria and causes them to produce gas.

Choosing the right substrate is very important.

The two most commonly used substrates are lactulose and glucose. Less commonly, sucrose and lactose are used, but these are not recommended for SIBO breath testing.

Lactulose is a sugar that can only be consumed by bacteria. (Important: this is not the same as the sugar found in dairy, lactose.) Because it isn't able to be absorbed by the small intestine, it can detect bacteria in any part of the small intestine.

Glucose is a sugar that can be absorbed by the small intestine or overgrown bacteria. Because it can be absorbed, it can only detect bacteria in the first 2-3 feet of the small intestine (called "proximal SIBO").

Glucose versus Lactulose

	LACTULOSE	GLUCOSE
can detect SIBO in the small intestine	✓	✗ only the first 2 - 3 ft. of the small intestine
can detect SIBO in the large intestine	✓	✗
bacteria's affinity to the substrate	✗ some bacteria don't "like" lactulose, so there's a slight chance of a false negative	✓ glucose is consumed by ALL bacteria
accessibility	✗ requires a prescription in the US	✓ available to patients

*** Some practitioners use **BOTH** a glucose and a lactulose test ***

How Long Should My Test Be?

Breath testing doesn't just require one sample of breath - to work, you need multiple samples over time. This is because the breath test is tracking where in the body bacteria are based on how long it takes the substrate to move through the small intestine.

Generally, it takes about 2 hours for the substrate to move through the small intestine and enter the large intestine. For that reason, most SIBO breath tests are either 2 or 3 hours long.

The benefit of a 3-hour test is that it shows the transition as the substrate moves from the small intestine to the large intestine. In most people, gas levels will rise dramatically as the substrate enters the large intestine, because there are lots of bacteria there.

Whether your test is 2 or 3 hours, **breath samples should be taken every ~20 minutes**, including a baseline sample before you drink the substrate.

The new trio-smart™ Breath Test is a 2-hour test, with samples taken every 15 minutes. Because the trio-smart™ test measures hydrogen sulfide directly, a 2-hour test is sufficient.

Prescription versus Patient Direct Testing

In the United States, lactulose breath tests require a doctor's prescription, but the glucose test is available over the counter.

There are two services that offer an 8-sample (instead of 10 samples) 3-hour conventional lactulose breath test directly to patients: **Direct Labs** and **True Health Labs**.

You or your practitioner can also order glucose or lactulose tests directly from:

Aerodiagnostics
Advancing Health Care into Human Care

QUINTRON
The Global Standard in Breath Testing

trio smart™

The new trio-smart™ Breath Test is available in either glucose or lactulose via Gemelli Labs.

You may need to have your doctor fill out a **requisition form** - a special form that allows the doctor to request tests from the laboratory. Be sure to request a requisition form from the company you order your test from.

How Much Does Testing Cost?

The cost of testing depends on how you order your test.

If your doctor orders the test, it may be covered by your insurance. However, even if ordered by a doctor, not all insurance will cover breath testing.

You may need to submit your testing expenses to your insurance for reimbursement, though reimbursement is not always approved.

Fortunately, even if you're paying out of pocket, **breath testing is affordable**, ranging from $150-$250 for home test kits.

Exactly Which Test Should I Order?

As you can see, there's a lot to consider when ordering the test.

Now that the new 3-gas trio-smart™ Breath Test is available, it is my preferred test. It is the only breath test that can detect hydrogen, methane, and hydrogen sulfide. However, it is still new and only available via one lab, so it might not be available to you yet.

My second choice is the conventional **3-hour lactulose breath test**, which does require a doctor's order. I like this test because it can detect SIBO in the entire small intestine and shows the transition from small intestine to large intestine.

Yes, your doc should know all this but if they don't you are going to have to train them.

Another option is the 8-sample 3-hour lactulose breath test, available directly to consumers through Direct Labs.

The 3-hour glucose test, which is available directly to consumers, is also a good choice. But keep in mind that if you get a negative result, and have the symptoms of SIBO, you may want to re-test with lactulose to look for SIBO in the lower part of the small intestine.

Prepping for the Breath Test

Woohoo - you've picked a test and placed your order! Now it's time to get ready for the test.

Before you can complete the test, you need to follow **prep guidelines for at least 7 days, with a special diet for the last 24 hours**.

Why? This period ensures that there is nothing that could interfere with test results - like undigested food or a faster transit time caused by laxatives.

First up, breath testing shouldn't be done within 14 days of colonoscopy, antibiotic treatment, or barium studies. (The only exception is if you are RE-testing after antibiotic treatment for SIBO). If you've had unusual watery diarrhea, wait 14 days to test.

7 days before you plan to take your breath test, you need to stop taking:

- Probiotics
- Laxatives of any kind
  (anything you take that makes you go is a laxative - including magnesium!)

Help! I Can't Quit Laxatives for a Week!

If you started sweating hearing that you need to quit laxatives or any other supplements that help you go #2 a week before the test, I get it!

Yes, you really do need to stop all laxatives or risk getting incorrect test results.

But there is good news! You CAN safely use glycerin suppositories or enemas before the test without impacting your results. Make the swap from anything you take to help you go to enemas at least 7 days before your test day.

The SIBO Breath Test
Prep Diet

Start the prep diet 24 hours before you plan to diet, unless you have chronic, severe constipation, in which case you may want to start the prep diet 48 hours before testing.

On the prep diet, only these foods are allowed:

- Baked or broiled chicken, turkey, or fish (salt and pepper only)
- White bread or white rice
- Clear chicken or beef broth
- Eggs
- Black coffee or tea
- Water

*Important: if eating white bread of white rice flares your SIBO symptoms, it's important to omit it on the prep diet and just eat the other foods. Not sure if white rice or white bread causes symptoms? Avoid it for 3 days, then have some and note if you have symptoms.

No, the prep diet is NOT fun, but it's only for a short period of time and it's completely necessary for accurate test results. It will be worth it to know! Trust me on this.

After 12 hours on the prep diet, fast for 12 hours before starting the test. You can have water while fasting. Most people spend the majority of the 12 hour fast asleep, which helps it go by very quickly!

Here's an example schedule:

DAY 1	7 am	begin prep diet
	7 pm	begin 12-hour fast
DAY 2	7 am	wake up, continue fasting
	9 am	begin breath test

Hate the thought of the prep diet? Some people choose to fast the 24 hours before the test (instead of just the last 12).

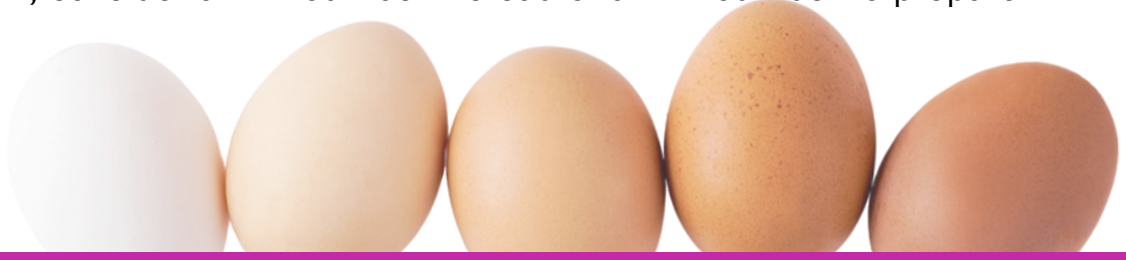
Are you a vegetarian? Me too - so I know exactly how daunting the prep diet can be if you don't eat meat!

First of all, **don't** make these substitutions:

- ✕ Tofu cannot be substituted for chicken or turkey
- ✕ Veggie broth cannot be substituted for chicken or beef broth
- ✕ No egg substitutes (like chia or flax eggs) can be used

If you're vegetarian, I recommend focusing on eggs as your main food. Remember, the diet only lasts 12 hours! (As you will fast 12 hours before the test.)

If you're vegan, white rice and bread are OK as long as you tolerate them. If you don't tolerate them, consider a 24 hour fast instead of a 12 hour fast to prepare for the test.



Do's & Don'ts
for Testing Mornings

Ok, you've quit taking your probiotics and laxatives, followed the prep diet for 12 hours, and done a 12 hour fast - you're finally ready to test!

After completing your 12 hour fast, you're ready to take the test as soon as you've been awake for at least 1 hour.

Here are some important Do's & Don'ts for test morning:

DO	DON'T
Get a timer ready (don't just watch the clock to keep track)	Exercise, as it can affect your test results
Brush your teeth before testing (but consider skipping mouthwash - experts disagree if it impacts results)	Eat or drink anything other than water and the test substrate (after you take your baseline!)
Wake up at least 1 hour before starting the test	Chew gum
Make a plan for a yummy lunch AFTER you're done with the test	Smoke, or be around second-hand smoke, for at least 1 hour before the test
Take your baseline sample before drinking the substrate	Forget to drink the substrate after the baseline

Will the Test Make Me Feel Sick?!

The goal of the breath test is to produce symptoms so that the gas can be measured... which means you might experience some symptoms like gas, bloating, or diarrhea during the test and shortly thereafter.

Other people experience the feelings of blood sugar swings - like shakiness, irritability, and brain fog.

But don't panic! many people experience NO negative symptoms whatsoever from the breath test.

My advice? It's best to **do the breath test on a day when you don't have a lot else going on**, in case it does cause a flare up of symptoms.

How to Collect Your Samples

Different brands of the breath test have different styles of collection tubes. They may look like a tube only, or like a tube attached to a plastic bag.

You might see tiny holes in the collection tube - this is a good thing and a result of the bag or tube being tested before it was sent to you. (If you have questions, be sure to reach out to your testing company for specifics.)

I prefer to label all my tubes before I start the test. As I complete each sample, I drop it back into the box.

Getting organized before you start the test is very important, because you can't "see" the breath in the collection tube, so unless you're labeled and organized ahead of time, you're likely to mix things up.

And trust me on this - **use a timer!** I have ruined my test results by losing track of time. Now, I always use a timer to keep me on track for my samples.

When you're done, seal up the package and mail it back using the included return label.

Breath test samples are good at room temperature for 14 days, so you don't need to panic, but want to ship them back ASAP.

Getting Your Results

They're finally here - your breath test results!

But what the heck does that graph mean?

Let me warn you right now: breath test results aren't as simple as "positive" or "negative" result.

First, let's go over what you'll see on your conventional breath test results: a **table** and a **graph**.

The table will show the levels of methane and hydrogen at the different sample times.

The graph shows that same data plotted out.

Here's an example test report.

On the top right is the table showing the different gas levels at different times. The graph is at the bottom. The different colored lines represent different gases.

What we're going to look at are the levels of hydrogen and methane during the test.

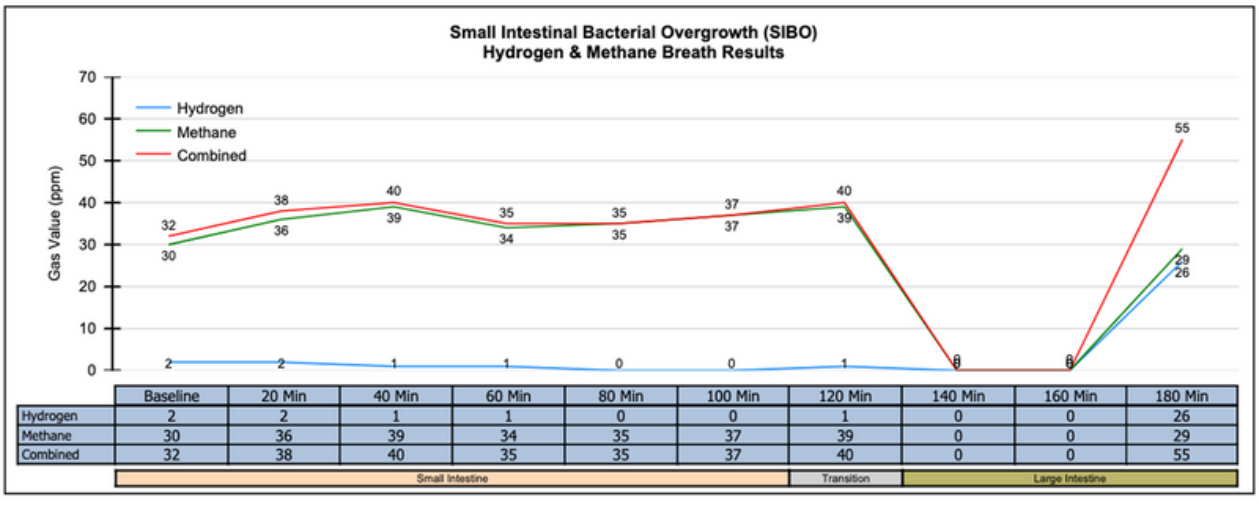
Breath test results require interpretation.

You can work with a practitioner for help interpreting your results or read the interpretation guidelines yourself.

Summary Report of Hydrogen & Methane Breath Analysis with Carbon Dioxide Correction

Gasses Analyzed	Patient Result	Expected
Increase in Hydrogen (H_2)	1 ppm (normal)	< 20 ppm
Increase in Methane (CH_4)	9 ppm (normal)	< 12 ppm (< 3 ppm[2])
Increase in combined H_2 & CH_4	10 ppm (normal)	< 15 ppm[3]
Analysis of the data suggests	Bacterial overgrowth is not suspected[2,4]	

Number	Expected Location	Collection Interval	ppm H2	ppm CH4	Combined	Sample Normalization[1] ppm CO2	Sample Normalization[1] fCO2
1	Small Intestine	Baseline	2	30	32	3.6	1.52
2		20 Min.	2	36	38	3.2	1.71
3		40 Min.	1	39	40	4.1	1.34
4		60 Min.	1	34	35	4.1	1.34
5		80 Min.	0	35	35	3.5	1.57
6		100 Min.	0	37	37	3.8	1.44
7	Transition	120 Min.	1	39	40	3.9	1.41
8	Large Intestine	140 Min.	0	0	0	0.0	NA[5]
9		160 Min.	0	0	0	0.0	NA[5]
10		180 Min.	26	29	55	4.6	1.19



	Baseline	20 Min	40 Min	60 Min	80 Min	100 Min	120 Min	140 Min	160 Min	180 Min
Hydrogen	2	2	1	1	0	0	1	0	0	26
Methane	30	36	39	34	35	37	39	0	0	29
Combined	32	38	40	35	35	37	40	0	0	55
	Small Intestine						Transition	Large Intestine		

Important Information - Please Read:

The North American Breath Testing Consensus Guidelines

Before 2017, there wasn't an accepted standard guide to interpreting breath test results. Each lab set its own guidelines, and many practitioners had their own ideas, too. Then in 2017, a group of practitioners met and came up with an agreed-upon set of guidelines for interpretation.

Because 3-gas testing was not yet available when the breath testing consensus guidelines were developed, hydrogen sulfide levels are not included. If you have a 3-gas breath test, look for hydrogen sulfide interpretation guidelines on your test results.

Here they are:

- Hydrogen above 20 in the first 2 hours of the test is considered positive
- Methane above 12 during the entire test is considered positive
- Hydrogen sulfide looks like a zeroes (or a max of 1-2) for both hydrogen and methane the entire test (on a conventional breath test)

Improper Red Flags

Is your baseline sample of hydrogen high? That's a sign of an improper prep diet. Maybe you ate something off the prep diet, have a very slow transit time, or reacted to either the white rice or white bread.

If you have high hydrogen at baseline, you may want to retest.

Remember, you can be positive for hydrogen, methane, hydrogen and methane, or hydrogen sulfide.

It's also possible to have all 3 gases mixed, but it will not be detectable on a conventional breath test, since hydrogen sulfide can't be measured directly. On a trio-smart™ 3-gas breath test, all 3 gas levels will be shown.

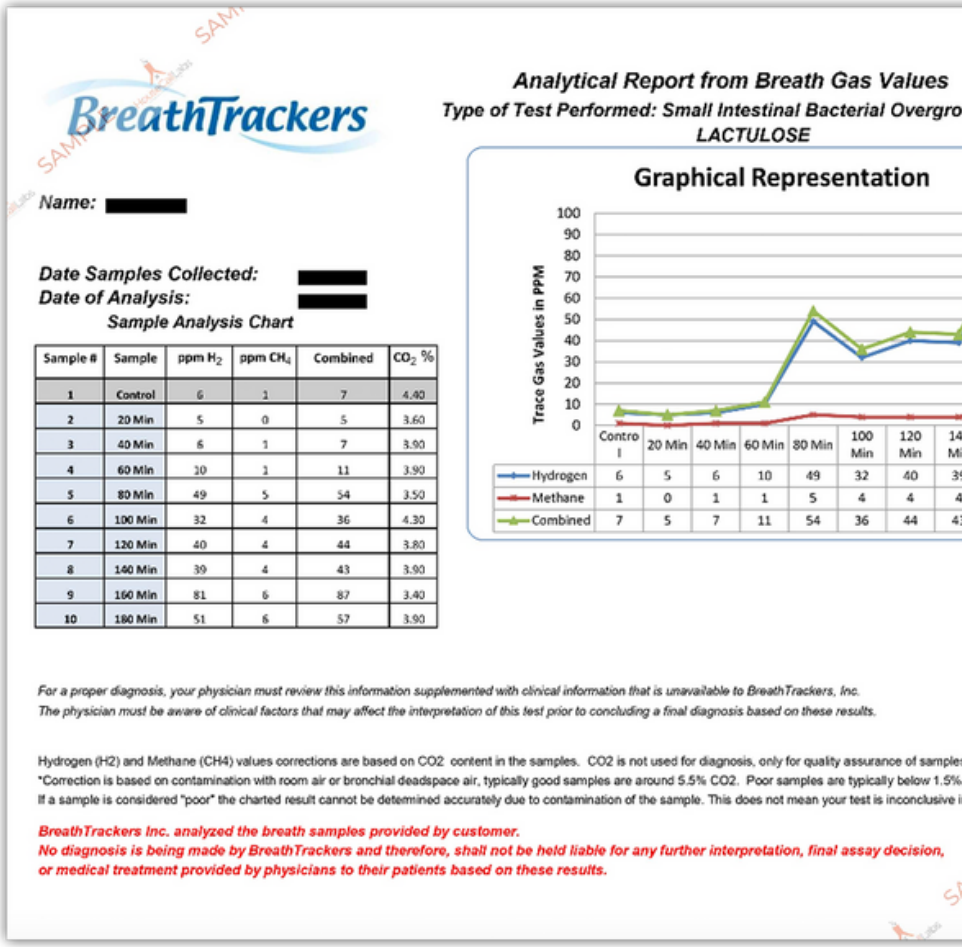
Sample Test Results

With the Consensus guidelines in mind, let's take another look at the breath test results example:

In this example, **hydrogen DOES rise above 20 in the first 2 hours** of the test: it gets to 49 by 80 minutes.

Methane does NOT rise above 12 the entirety of the test.

Based on North American Breath Testing Consensus guidelines, this test example would be **positive for hydrogen SIBO.**



BreathTrackers

Analytical Report from Breath Gas Values

Type of Test Performed: Small Intestinal Bacterial Overgro

LACTULOSE

Name: [redacted]

Date Samples Collected: [redacted]

Date of Analysis: [redacted]

Sample Analysis Chart

Sample #	Sample	ppm H_2	ppm CH_4	Combined	CO_2 %
1	Control	6	1	7	4.40
2	20 Min	5	0	5	3.60
3	40 Min	6	1	7	3.90
4	60 Min	10	1	11	3.90
5	80 Min	49	5	54	3.50
6	100 Min	32	4	36	4.30
7	120 Min	40	4	44	3.80
8	140 Min	39	4	43	3.90
9	160 Min	81	6	87	3.40
10	180 Min	51	6	57	3.90

Graphical Representation

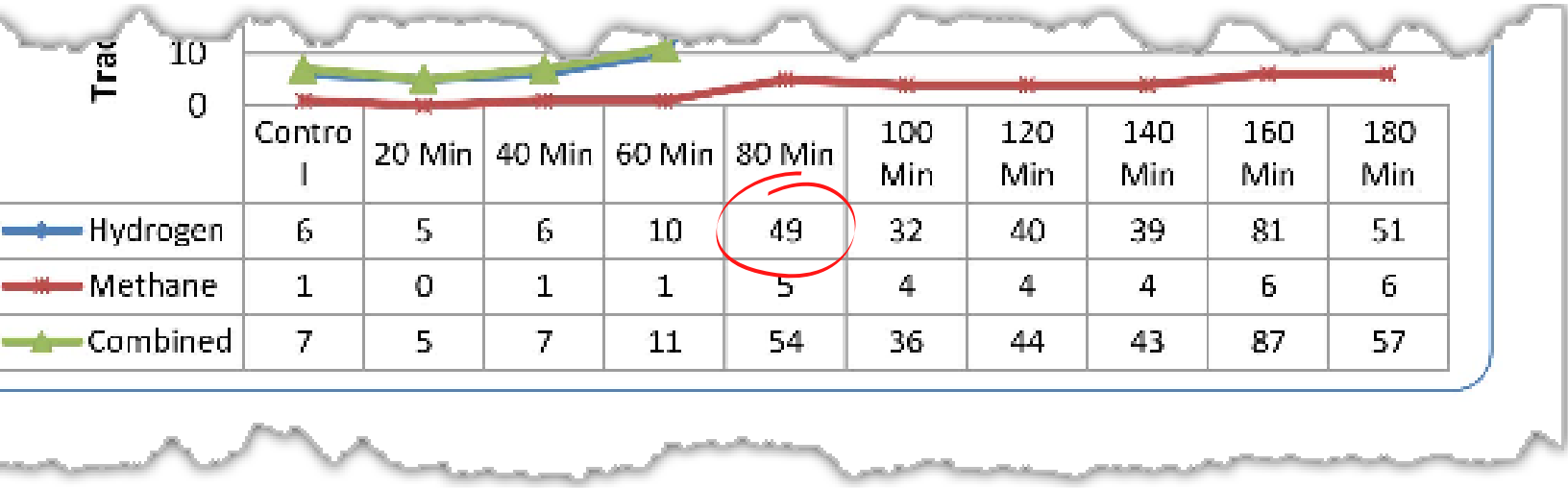
Trace Gas Values in PPM

	Control	20 Min	40 Min	60 Min	80 Min	100 Min	120 Min	140 Min
Hydrogen	6	5	6	10	49	32	40	39
Methane	1	0	1	1	5	4	4	4
Combined	7	5	7	11	54	36	44	43

For a proper diagnosis, your physician must review this information supplemented with clinical information that is unavailable to BreathTrackers, Inc. The physician must be aware of clinical factors that may affect the interpretation of this test prior to concluding a final diagnosis based on these results.

Hydrogen (H2) and Methane (CH4) values corrections are based on CO2 content in the samples. CO2 is not used for diagnosis, only for quality assurance of samples
*Correction is based on contamination with room air or bronchial deadspace air, typically good samples are around 5.5% CO2. Poor samples are typically below 1.5%
If a sample is considered "poor" the charted result cannot be determined accurately due to contamination of the sample. This does not mean your test is inconclusive

BreathTrackers Inc. analyzed the breath samples provided by customer.
No diagnosis is being made by BreathTrackers and therefore, shall not be held liable for any further interpretation, final assay decision, or medical treatment provided by physicians to their patients based on these results.



	Control	20 Min	40 Min	60 Min	80 Min	100 Min	120 Min	140 Min	160 Min	180 Min
Hydrogen	6	5	6	10	49	32	40	39	81	51
Methane	1	0	1	1	5	4	4	4	6	6
Combined	7	5	7	11	54	36	44	43	87	57

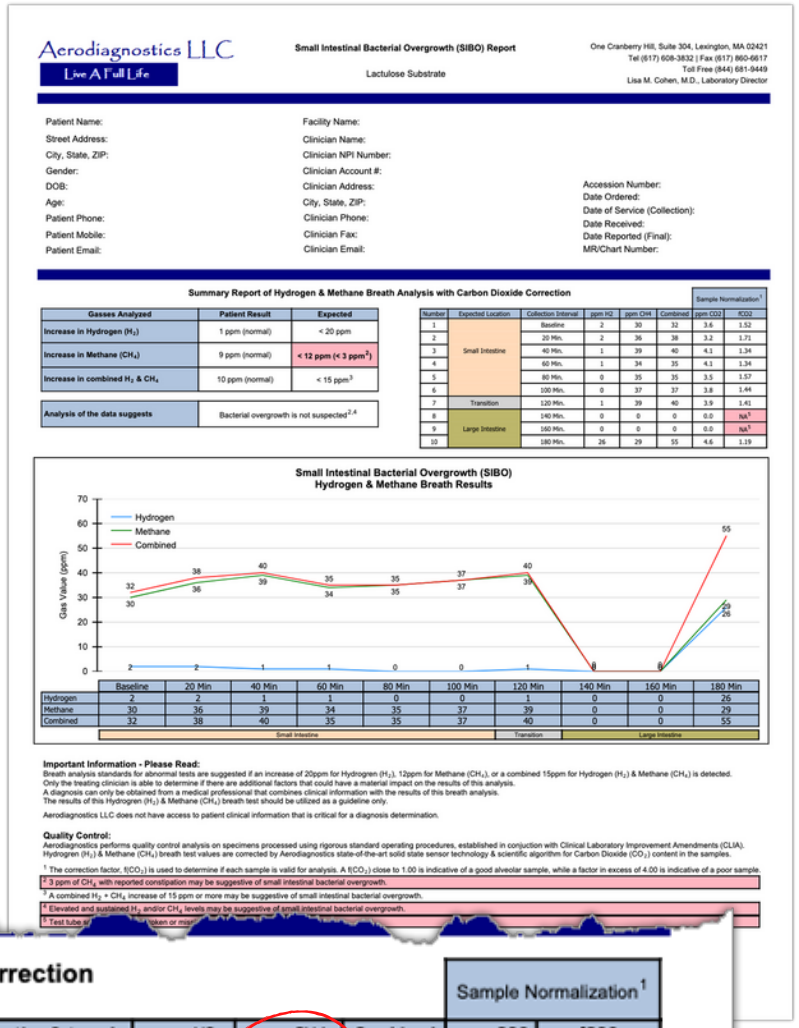
Sample Test Results

Here's another example:

Here, hydrogen does not rise above 20 within the first 2 hours of the test.

Methane is consistently above 12 throughout the entirety of the test.

Based on North American Breath Testing Consensus guidelines, this test example would be **positive for methane SIBO**.



Aerodiagnostics LLC
Live A Full Life

Small Intestinal Bacterial Overgrowth (SIBO) Report
Lactulose Substrate

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Tel (617) 608-3832 | Fax (617) 860-6617
Toll Free (844) 681-9449
Lisa M. Cohen, M.D., Laboratory Director

Patient Name:
Street Address:
City, State, ZIP:
Gender:
DOB:
Age:
Patient Phone:
Patient Mobile:
Patient Email:

Facility Name:
Clinician Name:
Clinician NPI Number:
Clinician Account #:
Clinician Address:
City, State, ZIP:
Clinician Phone:
Clinician Fax:
Clinician Email:

Accession Number:
Date Ordered:
Date of Service (Collection):
Date Received:
Date Reported (Final):
MR/Chart Number:

Summary Report of Hydrogen & Methane Breath Analysis with Carbon Dioxide Correction

Gasses Analyzed	Patient Result	Expected
Increase in Hydrogen (H_2)	1 ppm (normal)	< 20 ppm
Increase in Methane (CH_4)	9 ppm (normal)	< 12 ppm (< 3 ppm[2])
Increase in combined H_2 & CH_4	10 ppm (normal)	< 15 ppm[3]
Analysis of the data suggests	Bacterial overgrowth is not suspected[2,4]	

Number	Expected Location	Collection Interval	ppm H2	ppm CH4	Combined	Sample Normalization[1] ppm CO2	Sample Normalization[1] fCO2
1	Small Intestine	Baseline	2	30	32	3.6	1.52
2		20 Min.	2	36	38	3.2	1.71
3		40 Min.	1	39	40	4.1	1.34
4		60 Min.	1	34	35	4.1	1.34
5		80 Min.	0	35	35	3.5	1.57
6		100 Min.	0	37	37	3.8	1.44
7	Transition	120 Min.	1	39	40	3.9	1.41
8	Large Intestine	140 Min.	0	0	0	0.0	NA[5]
9		160 Min.	0	0	0	0.0	NA[5]
10		180 Min.	26	29	55	4.6	1.19

Small Intestinal Bacterial Overgrowth (SIBO)
Hydrogen & Methane Breath Results

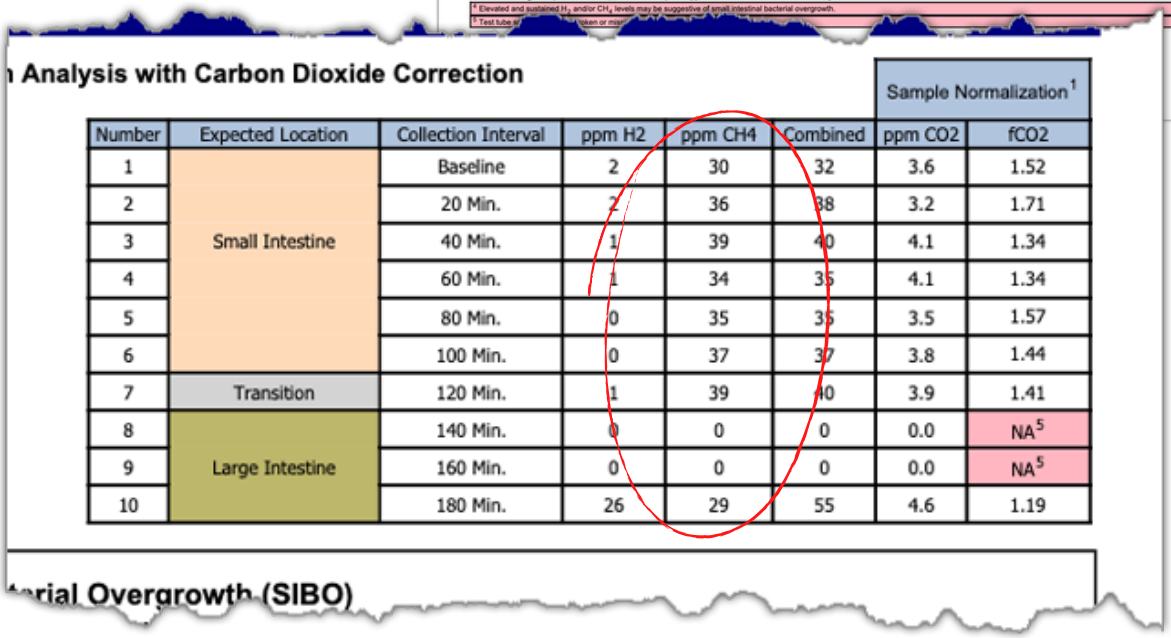
	Baseline	20 Min	40 Min	60 Min	80 Min	100 Min	120 Min	140 Min	160 Min	180 Min
Hydrogen	2	2	1	1	0	0	1	0	0	26
Methane	30	36	39	34	35	37	39	0	0	29
Combined	32	38	40	35	35	37	40	0	0	55
	Small Intestine						Transition	Large Intestine		

Important Information - Please Read:
Breath analysis standards for abnormal tests are suggested if an increase of 20ppm for Hydrogen (H_2), 12ppm for Methane (CH_4), or a combined 15ppm for Hydrogen (H_2) & Methane (CH_4) is detected.
Only the treating clinician is able to determine if there are additional factors that could have a material impact on the results of this analysis.
A diagnosis can only be obtained from a medical professional that combines clinical information with the results of this breath analysis.
The results of this Hydrogen (H_2) & Methane (CH_4) breath test should be utilized as a guideline only.

Aerodiagnostics LLC does not have access to patient clinical information that is critical for a diagnosis determination.

Quality Control:
Aerodiagnostics performs quality control analysis on specimens processed using rigorous standard operating procedures, established in conjuction with Clinical Laboratory Improvement Amendments (CLIA).
Hydrogen (H_2) & Methane (CH_4) breath test values are corrected by Aerodiagnostics state-of-the-art solid state sensor technology & scientific algorithm for Carbon Dioxide (CO_2) content in the samples.

[1] The correction factor, f(CO_2) is used to determine if each sample is valid for analysis. A f(CO_2) close to 1.00 is indicative of a good alveolar sample, while a factor in excess of 4.00 is indicative of a poor sample.
[2] 3 ppm of CH_4 with reported constipation may be suggestive of small intestinal bacterial overgrowth.
[3] A combined H_2 + CH_4 increase of 15 ppm or more may be suggestive of small intestinal bacterial overgrowth.
[4] Elevated and sustained H_2 and/or CH_4 levels may be suggestive of small intestinal bacterial overgrowth.
[5] Test tube s... broken or miss...



...Analysis with Carbon Dioxide Correction

Number	Expected Location	Collection Interval	ppm H2	ppm CH4	Combined	Sample Normalization[1] ppm CO2	Sample Normalization[1] fCO2
1	Small Intestine	Baseline	2	30	32	3.6	1.52
2		20 Min.	2	36	38	3.2	1.71
3		40 Min.	1	39	40	4.1	1.34
4		60 Min.	1	34	35	4.1	1.34
5		80 Min.	0	35	35	3.5	1.57
6		100 Min.	0	37	37	3.8	1.44
7	Transition	120 Min.	1	39	40	3.9	1.41
8	Large Intestine	140 Min.	0	0	0	0.0	NA[5]
9		160 Min.	0	0	0	0.0	NA[5]
10		180 Min.	26	29	55	4.6	1.19

...rial Overgrowth (SIBO)

Sample Test Results

With the Consensus guidelines in mind, let's take another look at the breath test results example:

In this example, **hydrogen does rise above 20 by 2 hours**, getting to 28 at 120 minutes.

Methane rises above 12, getting as high as 94 by the end of the 3 hour test.

Based on North American Breath Testing Consensus guidelines, this test example would be **positive for hydrogen and methane SIBO**.

BreathTrackers

Analytical Report from Breath Gas Values

Type of Test Performed: Small Intestinal Bacterial Overgrov

LACTULOSE

Name: [redacted]

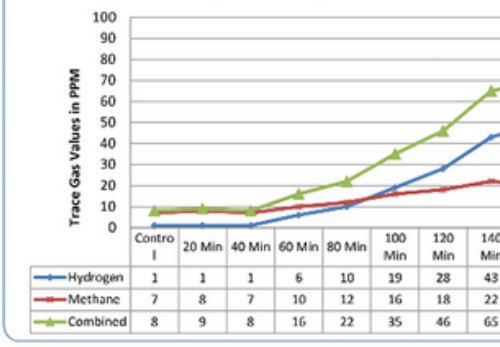
Date Samples Collected: [redacted]

Date of Analysis: [redacted]

Sample Analysis Chart

Sample #	Sample	ppm H_2	ppm CH_4	Combined	CO_2 %
1	Control	1	7	8	4.60
2	20 Min	1	8	9	4.60
3	40 Min	1	7	8	4.50
4	60 Min	6	10	16	4.50
5	80 Min	10	12	22	4.50
6	100 Min	19	16	35	4.40
7	120 Min	28	18	46	3.90
8	140 Min	43	22	65	4.50
9	160 Min	50	20	70	4.40
10	180 Min	70	24	94	4.10

Graphical Representation



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I've Got My Results Now What?!

Congrats - you've made it through choosing your test, the prep diet, completing the test, and even interpreting your results - phew!

You deserve a major pat on the back just for making it this far - but this is only the beginning!

Don't be discouraged - be excited! With the breath test results in your hands, you're ready to **make a treatment plan and finally start feeling BETTER!**

Using your breath test results, you can:

- ☑ Choose what treatment is right for you
- ☑ Estimate how long treatment will take

There's so much more to learn (and I have a LOT more to share) - far more than can fit in this book!

If you're ready to take the next steps, and get into the nitty-gritty of treating SIBO - everything from supplements and antibiotics to the best diet for SIBO - I invite you to join me in the **SIBO Recovery Roadmap® Course**.

The SIBO Recovery Roadmap® is **the information I wish I had when I was first diagnosed with SIBO**... but it's much more than just information!

It's actually a plan and a proven technique for treating and beating SIBO - including a specific roadmap used and created by the best doctors in the world for treating their patients with SIBO! We call it **the algorithm**.

Now that you understand testing, you're ready to dive into the roadmap and start healing!

So I have a little gift for you...

Click here to download the SIBO Recovery Roadmap® Algorithm FREE!

Use the algorithm to start planning your next steps - and whenever you need even more guidance along the way, be sure to join the SIBO Recovery Roadmap® Course.

Even better - when you DO **join the course**, you can deduct the cost of this testing guide from the cost of the course. Just use code **TESTINGGUIDE** at checkout.

(And by the way - this discount doesn't expire - it's my gift to you for investing in your health and this book.)

So download the Algorithm FREE here, and don't forget to use that coupon code when you decide to join.

Hope & hugs,

Shivan

Click Here to Download
The SIBO Recovery Roadmap® Algorithm