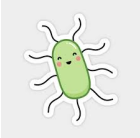
SMALL INTESTINE BACTERIAL OVERGROWTH (SIBO)- An Integrative Approach to Treating SIBO



What is SIBO?

SIBO stands for Small Intestine Bacterial Overgrowth. *This means that the colony of bacteria that should be in your large intestine has moved into your small intestine.* And although this sounds like an infection, SIBO actually isn't considered to be one. We need a diverse colony of organisms thriving in our gut, we just need them to be in the right place: the large intestine.

What are common symptoms of SIBO?

- Diarrhea
- Abdominal pain
- Gas, bloating
- Constipation

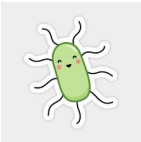
What causes SIBO?

SIBO is caused by factors that reduce gastric acid production or reduce small intestinal motility (or ability to move things along). *Common causes include irritable bowel syndrome (IBS), long term acid-reducing medication use (like PPI's), recurrent or long-term antibiotic use, as well as structural abnormalities in the small intestine that may be the result of surgeries or fistulas.*

How is SIBO diagnosed?

There is no perfect method to diagnose SIBO, but breath testing is one of the most common. Breath testing is also the least invasive. The bacteria and other organisms require nourishment to survive and thrive and feed off the food we eat. The bacteria also produce waste as a normal part of their digestion. The bacteria ferment two sugars, lactulose and glucose, which are two sugars used in SIBO breath testing. When the bacteria ferment either lactulose or glucose they release hydrogen, methane and/or hydrogen sulfide (gas) which can be measured by the breath test. These gasses are not produced by humans and their presence signifies the metabolic byproducts of carbohydrate fermentation by bacteria.

Of note, it's not technically bacteria, but single-celled organisms called archaea, that are responsible for the methane form of SIBO. Methane-predominant SIBO is associated with constipation and bloating as methane gas slows down transit time and causes constipation in most of those who test positive for methane SIBO.



How is SIBO treated?

SIBO is treated through: Diet Modification, Removal of the Bacterial Overgrowth and Repopulation with Good Bacteria
To treat SIBO, we must 1) remove foods that are irritating the lining 2) replace agents for digestive support, 3) remove the overgrowth of bacteria/archaea/fungi 3) reinoculate (or reintroduce) with friendly bacteria and the foods they need to grow, and 4) repair the lining of the intestines.

Diet Modification

There are a few approaches to removing irritants to the gastrointestinal lining:
A general elimination diet, the FODMAP diet, or the Specific Carbohydrate Diet.
An elimination diet is a "learning diet" with a strategy and a plan; close monitoring of your symptoms will help you learn how the food you eat affects you. Diet does not cure SIBO but rather helps manage symptoms and create a hospitable environment for healing. In general, the Specific Carbohydrate Diet is very strict/restrictive and can be harder to follow.

Choose the diet plan that seems best for you and take some time to plan out what foods you will substitute to give the diet changes a chance to allow your gut to heal.
Usually, you should follow the diet for 2 full weeks to see what changes you feel, and you may need to continue up to 6 weeks. You can then try reintroducing foods **one at a time** to see how you feel. Read below to learn more about the General Elimination Diet and the FODMAP diet. If you decide to continue to keep certain food groups out of your diet, it is important to discuss with a dietician or your doctor what nutrients need to be replaced. **It may help to take digestive enzymes and/or drink ginger tea to help with smoother digestion. Also, it is encouraged that you eat every 3-4 hours, and don't snack between meals. Additionally, it is important that if you try an elimination diet, this is meant to be short term, and not meant to be done for more than a few weeks.**

1) **A General Elimination Diet:**

Consider eliminating certain foods for at least 2 weeks.

Wheat (gluten)
Dairy (lactose)
Citrus
Eggs
Nuts
Soybeans
Red meat

2) **The FODMAP Elimination Diet:**

FODMAP stands for Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols. FODMAPs include fructose, lactose, mannitol, sorbitol, fructans and GOS.

A low-FODMAP diet avoids foods containing *certain sugars* and *certain fibers* capable of causing diarrhea, constipation, gas, bloating and abdominal pain in people with IBS. Examples of FODMAPs include:

- Lactose (also known as milk sugar; found in milk, yogurt and ice cream)
- Fructose (also known as fruit sugar; found in fruit, high-fructose corn syrup, honey and agave syrup)
- Sorbitol, mannitol, and other “-ol” sweeteners (also known as sugar alcohols; found in certain fruits and vegetables as well as some types of sugar-free gums and candies)
- Fructans (a type of fiber found in wheat, onions, garlic and chicory root)
- GOS (a type of fiber found in beans, hummus and soy milk)

These five types of FODMAPs have several things in common: They can be *poorly absorbed* during the digestive process. They are *rapidly fermented* by the bacteria that live in your gut. They are capable of pulling fluid into the gut in a process called *osmosis*. The increased fluid load, along with the type and amount of gas produced, cause distension and motility changes, leading to bouts of IBS symptoms. Symptoms are often delayed until hours after eating a high FODMAP meal or snack, because it takes time for FODMAPs to make their way through the stomach and into the intestines, where the effects occur. By reducing the overall dietary load of these carbohydrates, troublesome GI symptoms can be minimized or eliminated.

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What can I eat and what can I not eat on a FODMAP diet?

Read below to see what foods are "High-FODMAP" Foods (and therefore you should avoid/cut out) and what are "Low-FODMAP" alternatives (and you should include). We highly recommend visiting the Monash University website for more information.

	COMMON HIGH FODMAP FOODS-AVOID	COMMON LOW FODMAP FOODS-INCLUDE
Breads/pastas	Wheat (bread, pasta, crackers, biscuits, pizza crust) couscous	Gluten-free bread, 100% spelt bread, white sourdough wheat bread, gluten-free pasta, quinoa pasta
Milk/cheese	cow's/goat/sheep milk, soy milk, yogurt, ice cream, cream cheese, ricotta cheese, kefir	rice milk, almond milk, canned coconut milk, lactose free milk, cheddar, colby cheeses
Meats/Fish	Chorizo, corned beef, bratwurst sausage	Bacon, beef, chicken, deli ham and turkey slices, lamb, pork, all fish
Sweetener	High fructose corn syrup (in many processed foods), honey	Sweetener substitute: maple syrup
Vegetables	Cauliflower, mushrooms, asparagus, artichoke, brussel sprout, broccoli stalks, cabbage, fennel, peas, onions	Baby spinach, bok choy, broccoli heads, butter lettuce, carrots, collard greens, cucumber, edamame, green beans, kale, zucchini
Fruits	apple, pear, watermelon, mango, peach, avocado, very ripe banana, tinned fruits in natural juice	banana, blueberries, grapefruit, honeydew melon, kiwifruit, lemon/lime, mandarin, orange, raspberries, strawberries, pineapple
Beans/Lentils	Baked beans, black beans, butter beans, chickpeas/garbanzo beans, refried beans	Sprouted mung beans, canned lentils
Nuts	pistachios, cashews, almond	Walnuts, pine nuts, pecans, macadamia nuts
Drinks	Apple juice, orange juice, espresso with cow or soy milk, kombucha, chamomile tea, chai tea	Cranberry juice, drinking chocolate powder, peppermint tea/rooibos tea
Herbs/Spices	Garlic	Basil, chives, mint, thyme, parsley, turmeric, cinnamon, cumin, curry

For more specific guidance on how to do a FODMAP elimination diet, here are a few websites and Apps that may be helpful:

- University of Wisconsin Integrative Health, LOW FODMAP Diet Tool
- Monash University Low FODMAP App, https://www.monashfodmap.com/ (App)
- The Complete Low-FODMAP Diet (A Revolutionary Plan for Managing IBS and Other Digestive Disorders) Book by Sue Shepard, PhD and Peter Gibson, MD

Of note, if you have methane-dominant SIBO, it is important to include fermentable fibers, decrease red meats/animal proteins, and include soy based foods like miso and tofu.

Removal of the overgrowth of bacteria

Antibiotics: Doctors may prescribe antibiotics and/or herbal antimicrobials along with other supplements such as fiber or probiotics. Rifaximin is the most studied antibiotic for SIBO and may be the preferred option because it stays local to the small intestine and doesn't disrupt the good bacteria in the colon.

SIBO Herbal support and treatment:
Sometimes herbs are used in place of antibiotics. There are different approaches to herbal support and treatment for SIBO. Herbal antimicrobials are also broad spectrum so they can target bacteria, viruses, fungi, and parasites. Some people try a combination of herbal products to help eradicate overgrowth. It is recommended to use a combination of herbs to treat. Common herbs include: Berberine, Neem, Oil of Oregano, Allician, Cinnamon.

These should be started once you have made diet changes, typically dosed twice a day and continued for approximately 4-6 weeks. Discuss with your healthcare provider which would be a good choice for you. And, start low and go slow. There can be a bit of discomfort with starting the herbs and some people need to ease into them. If there are a lot of symptoms, you can consider using activated charcoal to help move out some of the toxins released from treatment.

Reinoculate and Reintroduce Foods

When SIBO overgrowth is eradicated, approximately 6-8 weeks after starting diet changes and herbal support, the next step is to repopulate the view with healthy bacteria. This is done with a prebiotic and probiotic supplement. There are many different kinds of probiotics (healthy bacteria) and a few that are thought to be more beneficial for SIBO. Prebiotics are foods or supplements that feed healthy bacteria.

The more beneficial strains of probiotics for SIBO include *Bifidobacterium, Lactobacillus, and Saccharomyces boulardii.* Discuss with your healthcare provider which would be a good choice for you.

You can also start reintroducing foods that you eliminated and see how your body feels with restarting the food.

It may be helpful to take a supplement that helps with moving food through the intestinal tract, called a “prokinetic.” This is often a supplement like Iberogast.

Other Treatment Options- Acupuncture and Traditional Chinese Medicine

Acupuncture is one of the oldest therapies within Traditional Chinese Medicine, dating back more than 3,000 years. Traditional Chinese Medicine is a “Whole Medical System” that often encompasses herbs, massage, nutrition, energy moving exercises, and acupuncture. According to Traditional Chinese Medicine, the body is a delicate balance of two opposing and inseparable forces: yin and yang. Yin represents the cold, slow, or passive principle, while yang represents the hot, excited, or active principle. Among the major assumptions in TCM are that health is achieved by maintaining the body in a "balanced state" and that disease is due to an internal imbalance of yin and yang.

Acupuncture stimulates different points on the body which are important for the normal functions of the body and encourages the body to return to homeostasis. These points, called acupoints, are located along the lines connecting different organs, and based on the principles of acupuncture, represent the channels carrying the vital energy (“qi”) through the body. The main goal of acupuncture is to balance, regulate or strengthen a patient’s energy, which is called qi [chee]. Scientists have found that many acupoints overlay with bundles of neurovascular cells, providing supporting evidence to the mechanism by which acupuncture can alleviate pain.

Chinese herbs are also an effective option and are similar to the herbs discussed in their antimicrobial actions.