CONDITION

Small bowel bacterial overgrowth

Small bowel bacterial overgrowth is an excess of bacteria in the small intestine that can cause bloating, pain, diarrhoea, and poor nutrient absorption.

WHAT IT IS
Excess small-bowel bacteria causing digestive problems

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Bloating, abdominal pain, diarrhoea, excess gas

WHAT CAUSES IT
Poor bowel movement or altered small-bowel anatomy

HOW IT IS DIAGNOSED
Breath testing; sometimes small-bowel fluid culture

MAIN TREATMENT
Antibiotics and management of underlying causes

CAN IT BE CURED?
Sometimes - recurrence is common

IS IT AN EMERGENCY?
Sometimes - severe pain or persistent vomiting needs urgent assessment

LONG-TERM OUTLOOK
Often manageable, but recurrence may require repeat care

Overview

Small bowel bacterial overgrowth means that too many bacteria are present in the small bowel, also called the small intestine. It is often shortened to SIBO.

The small bowel normally contains fewer bacteria than the large bowel. It also uses coordinated muscle contractions to move food and bacteria forward. When bacteria collect in the small bowel, they may ferment food earlier than they should. Fermentation produces gases, which can cause bloating, pain, and changes in bowel movements.

The bacteria may also interfere with digestion and nutrient absorption. More severe or long-lasting overgrowth can contribute to weight loss or vitamin deficiencies, although this is less common.

SIBO is not always straightforward to identify. Its symptoms overlap with irritable bowel syndrome, coeliac disease, lactose intolerance, and several other digestive conditions. Breath tests are useful but imperfect, so results need to be considered alongside your symptoms, medical history, and risk factors.

Symptoms

Symptoms range from mild and occasional to persistent. They often become more noticeable after eating, especially when bacteria ferment carbohydrates in food.

Common symptoms include:

Some people have greasy, pale, or difficult-to-flush stools. This can happen when fat is not absorbed properly.

More significant problems with absorption may cause unplanned weight loss, tiredness, weakness, or symptoms of vitamin and mineral deficiencies. These features need medical assessment because they can have causes other than SIBO.

- Bloating or visible swelling of the abdomen
- Excess gas, belching, or wind
- Cramping, discomfort, or pain in the abdomen
- Diarrhoea or loose stools
- Constipation, particularly when methane production is present
- Nausea or feeling unusually full after eating

Causes and risk factors

SIBO usually develops because something has changed the movement, structure, or normal defences of the small bowel. It is not usually an infection caught from another person.

The small bowel normally clears bacteria through waves of muscle contractions between meals. Conditions that slow these movements can allow bacteria to build up. Examples include diabetes-related nerve damage, systemic sclerosis, and other conditions affecting the muscles or nerves of the digestive tract. Opioid medicines can also slow bowel movement.

Changes to the structure of the bowel may create areas where food and bacteria collect. These changes can follow some types of abdominal surgery. Narrowed areas, small-bowel pouches, abnormal connections between parts of the bowel, or a partially blocked bowel may

have a similar effect.

Other associated factors include Crohn's disease, coeliac disease, reduced immune function, and conditions affecting digestive secretions. Medicines that reduce stomach acid have been linked with SIBO in some studies, but taking one does not mean that you will develop it. Do not stop a prescribed medicine without discussing why you take it and what alternatives are available.

Sometimes no single cause is found.

Diagnosis

There is no perfect test for SIBO. A clinician will usually begin by asking about your symptoms, previous operations, medicines, existing conditions, weight changes, and diet. Blood or stool tests may be used to look for anaemia, inflammation, vitamin deficiencies, infection, or other explanations.

A hydrogen and methane breath test is commonly used. After drinking a measured sugar solution, you provide breath samples at set intervals. Bacteria and other microorganisms produce gases when they ferment the sugar. An early rise in hydrogen may support SIBO. Higher methane levels are more closely linked with constipation and are often described as intestinal methanogen overgrowth. Methanogens are not bacteria, even though testing is often discussed alongside SIBO.

Test preparation matters because food, smoking, exercise, antibiotics like amoxicillin or doxycycline , laxatives, and some other medicines can affect the result. Follow the instructions from the testing service rather than changing medicines independently.

Another option is to collect fluid from the small bowel during an endoscopy and grow organisms from it in a laboratory. This samples the bowel directly, but it is invasive, may miss overgrowth elsewhere, and can be contaminated as the instrument passes through the digestive tract. It is therefore not routinely needed.

A positive breath test does not explain every digestive symptom, and a negative test does not exclude every possible problem. The result should be interpreted in context.

Treatment and management

Treatment aims to reduce the overgrowth, correct nutritional problems, and manage whatever allowed the overgrowth to develop.

Antibiotics are the main medical treatment. Rifaximin, which acts mainly inside the bowel, is commonly used. Other antibiotics may be considered based on symptoms, test findings, previous treatment, allergies, and local practice. Methane-associated overgrowth may be managed differently from hydrogen-predominant SIBO. Treatment should be selected by a qualified prescriber rather than started using leftover or non-prescribed antibiotics.

Symptoms may return after successful treatment, particularly when an underlying problem with bowel movement or anatomy remains. Repeated symptoms do not always mean that another antibiotic course is needed; reassessment may help rule out another cause.

Management may also include treating coeliac disease or another digestive condition, reviewing medicines that slow the bowel, or considering whether a structural problem can be corrected. Vitamin or mineral deficiencies may need replacement after testing.

Diet can help control symptoms, but no single diet cures SIBO. A temporary reduction in highly fermentable carbohydrates may ease gas and bloating for some people. A low-FODMAP diet is one example, but it is restrictive and is best used with dietitian support. Long-term unnecessary restriction can reduce dietary variety and make it harder to meet nutritional needs.

Evidence for probiotics, herbal products, and "SIBO cleanses" is limited or inconsistent. Some products may cause side effects or interact with medicines.

Complications

Most people do not develop serious complications. When overgrowth is severe or prolonged, bacteria can interfere with the absorption of fats, carbohydrates, and vitamin B12.

Possible complications include:

These problems are more likely when there is significant bowel damage, altered anatomy, or another long-term digestive condition.

- Unplanned weight loss or undernutrition
- Vitamin B12 or fat-soluble vitamin deficiencies
- Anaemia
- Weakening of bones related to poor nutrient absorption
- Dehydration from ongoing diarrhoea

Prevention

SIBO cannot always be prevented. This is especially true when it results from unavoidable changes to bowel anatomy or a condition affecting intestinal movement.

Managing the underlying cause may reduce the chance of recurrence. This can include keeping diabetes well controlled, following treatment for coeliac or Crohn's disease, and having medicines reviewed if they slow the bowel. Do not stop prescribed acid-reducing medicines like omeprazole or lansoprazole , opioids like oxycodone or morphine , or other treatments without medical advice.

SIBO is not caused by poor hygiene and is not contagious. Food safety measures are important for preventing food poisoning, but they do not specifically prevent SIBO.

Living with it and what to expect

Many people improve after treatment, but symptoms may return over the following months or years. Recurrence is more likely when the underlying problem cannot be corrected. Some people need further testing or additional treatment courses, while others have long periods with few symptoms.

Keeping a brief record of symptoms, bowel movements, treatments, and major diet changes can help identify patterns. Avoid repeatedly cutting out foods without guidance, especially if you are losing weight.

If symptoms continue despite treatment, the diagnosis may need to be reconsidered. Irritable bowel syndrome, food intolerances, pelvic floor problems, coeliac disease, pancreatic conditions, and inflammatory bowel conditions can produce similar symptoms. Ongoing follow-up should focus on your symptoms and nutrition, not only on repeating breath tests.

Most people can continue usual work, exercise, travel, and social activities, although planning may be helpful during symptom flares.

When to get medical help

Arrange a routine medical appointment if bloating, pain, diarrhoea, or constipation keeps returning or interferes with daily life. You should also seek assessment for unplanned weight loss, ongoing greasy stools, persistent tiredness, signs of anaemia, or symptoms that have not improved after treatment.

Contact a medical service promptly if you have frequent vomiting, cannot keep fluids down,

have worsening diarrhoea with signs of dehydration, or develop a fever with significant abdominal symptoms.

Seek urgent or emergency care for:

These are not typical features of uncomplicated SIBO. They may indicate a bowel blockage, bleeding, severe dehydration, or another condition requiring urgent assessment.

- Sudden or severe abdominal pain
- A very swollen abdomen with inability to pass stool or gas
- Persistent vomiting, especially with severe pain
- Vomit containing blood or material resembling coffee grounds
- Black or bloody stools
- Fainting, confusion, marked weakness, or very little urine

Common questions

Is SIBO the same as irritable bowel syndrome?

No. They are different conditions, but they can cause similar symptoms and may occur together. Bloating or an irritable bowel syndrome diagnosis does not automatically mean that you have SIBO.

Can SIBO go away on its own?

Symptoms may settle temporarily, but persistent overgrowth often needs assessment and treatment. Improvement without treatment does not confirm that SIBO was the cause.

What foods should I avoid with SIBO?

There is no universal list. Foods that ferment easily may worsen bloating in some people, but reactions differ. A dietitian can help you test changes without making your diet unnecessarily restrictive.

Is SIBO contagious?

No. It usually results from changes in bowel movement, anatomy, or digestive defences. You cannot pass it to someone through food, touch, or close contact.

Can probiotics cure SIBO?

There is not enough consistent evidence to say that probiotics cure it. Some people report improvement, while others develop more gas or bloating. Products also differ widely.

Why does SIBO keep coming back?

Antibiotics can reduce bacteria without correcting the reason they collected. Slow bowel movement, altered anatomy, or another digestive condition may continue to promote overgrowth.

Sources

- Pimentel M, Saad RJ, Long MD, Rao SSC. "ACG Clinical Guideline: Small Intestinal Bacterial Overgrowth." The American Journal of Gastroenterology . 2020;115(2):165-178.
- Quigley EMM, Murray JA, Pimentel M. "AGA Clinical Practice Update on Small Intestinal Bacterial Overgrowth: Expert Review." Gastroenterology . 2020;159(4):1526-1532.
- Rezaie A, Buresi M, Lembo A, et al. "Hydrogen and Methane-Based Breath Testing in Gastrointestinal Disorders: The North American Consensus." The American Journal of Gastroenterology . 2017;112(5):775-784.
- Bushyhead D, Quigley EMM. "Small Intestinal Bacterial Overgrowth." Gastroenterology Clinics of North America . 2021;50(2):463-474.