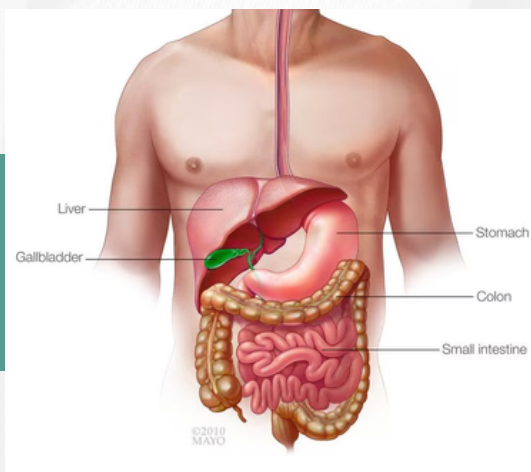




# SMALL INTESTINAL BACTERIAL OVERGROWTH



## WHAT IS SIBO?

Small intestinal bacterial overgrowth (SIBO) occurs when there is an abnormal increase in the overall bacterial population in the small intestine with bacteria that is not commonly found in the digestive tract.

SIBO commonly results when a disease, surgery or structural problem slows the passage of food and waste products in the digestive tract, creating a breeding ground for bacteria. The excess bacteria often cause diarrhea and may cause weight loss and malnutrition.

## SYMPTOMS

- Loss of appetite
- Abdominal pain
- Nausea
- Bloating
- An uncomfortable feeling of fullness after eating
- Diarrhea
- Unintentional weight loss
- Malnutrition

## CAUSES

1. **Complications of abdominal surgery** such as gastric bypass for obesity, gastrectomy to treat peptic ulcers and stomach cancer
2. **Structural problems in and around your small intestine**, including scar tissue (intestinal adhesions) that can wrap around the outside of the small bowel, and bulging pouches of tissue that protrude through the wall of the small intestine (intestinal diverticulosis)
3. **Certain medical conditions**, including Crohn's disease, radiation enteritis, scleroderma, celiac disease, diabetes or other conditions that can slow movement (motility) of food and waste products through the small intestine

## RISK FACTORS

- Gastric surgery
- A structural defect in the small intestine
- An injury to the small intestine
- An abnormal passageway (fistula) between two segments of bowel
- Crohn's disease,
- Intestinal lymphoma or scleroderma In small intestine
- History of radiation therapy to the abdomen
- Diabetes
- Diverticulosis of the small intestine
- Adhesions due to previous abdominal surgery

## COMPLICATIONS

- Poor absorption of fats, carbohydrates and proteins
  - Due to excess bacteria breaking down bile salts which normally digest fats
  - Due to Increased bacteria damaging mucous lining
- Vitamin deficiency (A, D, E, K, B-12)
  - Due to Incomplete absorption of fats
  - B-12 deficiency can lead to weakness, fatigue, tingling and numbness In your hands and feet)
- Weakened bones (osteoporosis)
  - Damage to Intestine can cause poor calcium absorption
- Kidney stones
  - Due to poor calcium absorption



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## HOW IS SIBO DIAGNOSED?

In order to diagnose SIBO tests to check for bacterial overgrowth in your small intestine, poor fat absorption, or other problems that may be causing or contributing to your symptoms are done.

Common tests include:

- **Breath testing**
  - This type of noninvasive test measures the amount of hydrogen or methane that you breathe out after drinking a mixture of glucose and water. A rapid rise in exhaled hydrogen or methane may indicate bacterial overgrowth in your small intestine. Although widely available, breath testing is less specific than other types of tests for diagnosing bacterial overgrowth.
- **Small intestine aspirate and fluid culture.**
  - This is currently the gold standard test for bacterial overgrowth. To obtain the fluid sample, doctors pass a long, flexible tube (endoscope) down your throat and through your upper digestive tract to your small intestine. A sample of intestinal fluid is withdrawn and then tested in a laboratory for the growth of bacteria

Other tests that could be recommended:

- Vitamin deficiency
- Stool evaluation to test for fat malabsorption
- X-Ray, CT Scan, MRI
  - To look for structural abnormalities

## TREATMENT

- Antibiotic therapy
  - Short course of antibiotics often significantly reduces the number of abnormal bacteria. But bacteria can return when the antibiotic is discontinued, so treatment may need to be long term.
  - Doctors may also switch among different antibiotics to help prevent bacterial resistance.
  - Antibiotics wipe out most intestinal bacteria, both normal and abnormal. As a result, antibiotics can cause some of the very problems they're trying to cure, including diarrhea. Switching among different drugs can help avoid this problem.
- Nutritional support
  - Nutritional Supplements for B12, calcium, Iron
  - Lactose free diet
    - Damage to the small intestine may cause you to lose the ability to digest milk sugar (lactose).