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What is it?

- Small Intestinal Bowel Overgrowth
- A chronic bacterial infection of the small intestine
- Caused by bad bacteria such as E Coli and Clostridium migrating to the small intestine
- There is not enough good bacteria to deal with it in the small intestines (remember the numbers are low)
- The pathogenic bacteria interferes with nutrient absorption as they damage the gut lining
- Also play a role in leaky gut
- Bile acids are deconjugated and this interferes with fat absorption as well as fat soluble vitamins

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SIBO and Symptoms

- Food particles and the bacteria itself can enter the bloodstream increasing food allergies and infection
- The bacteria secretes toxins and acids that can cause neurological and cognitive symptoms
- Immune system reactions to the bacteria and endotoxins causes aches and pains, chronic fatigue and stresses the liver
- Other symptoms include gas, bloating, diarrhea or constipation or both, flatulence, and belching – similar symptoms to IBS
- 84% of IBS sufferers have SIBO in one study but in another study, none had SIBO

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Symptoms

- Food sensitivities, headaches, joint pain, skin issues like eczema, acne or roseacea, heartburn, nausea, mood issues, brain symptoms (as seen in autism) and respiratory issues (such as asthma)
- Anemia (due to iron and B12 deficiency), undigested fat in stools and weight loss
- SIBO has been link to the same conditions like diabetes, gallstones, heart disease and autoimmune similar to dysbiosis and has all the same symptoms as Candidiasis

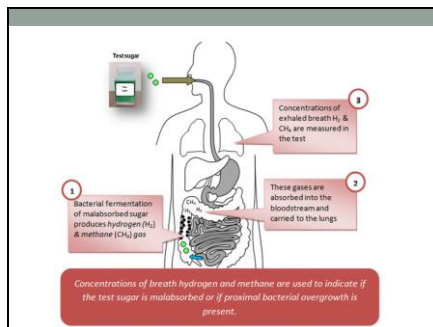
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Testing

- Hydrogen breath test: This test measures the hydrogen (H) & methane (M) gas which SI bacteria produces (food digestion does not)
- It diffuses into the blood and goes to the lungs for expiration.
- Two types of tests may be used: Lactulose or Glucose
- Other test: Determining anaerobic and aerobic colony counts in small intestines
- Intubation and aspiration of fluid involved



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Is It More Prevalent?

- Better testing methods have been able to help diagnose
- Normal amount in SI is 10^3 organisms/mL, overwhelmingly good bacteria - with SIBO it is 10^5 – 10^6 organisms/mL with a higher percentage of bad bacteria strains
- In one study of 289 healthy adults, young versus older, 5.6% of the young had SIBO versus 15.6 % of older people and a British study found incidence of SIBO in 14.5% of healthy older people
- A Japanese study found no cases of SIBO in a group of elderly people



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Cause

- Two common causes are:
- Lower stomach acid allowing more ingested pathogens into the small intestines
- Slow small intestine motility including delayed gastric emptying
- Also involved diverticulitis of the small intestine (low factor) and large intestines
- Ileocecal valve malfunction allowing colon bacteria into the small intestines
- Antibiotics and acid-blocking drugs are also factors



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- **Structural/Anatomic**
 - — Small intestine diverticula
 - — Small intestine strictures (radiation, medications, Crohn's disease)
 - — Surgically created blind loops
 - — Resection of ileocecal valve
 - — Fistulas between proximal and distal bowel
 - — Gastric resection
- **Motility Disorders**
 - — Gastroparesis
 - — Small bowel dysmotility
 - — Celiac disease
 - — Chronic intestinal pseudo-obstruction
- **Irritable Bowel Syndrome**
- **Metabolic Disorders**
 - — Diabetes
 - — Hypochlorhydria
- **Elderly**
- **Organ System Dysfunction**
 - — Cirrhosis
 - — Renal failure
 - — Pancreatitis
 - — Immunodeficiency states
 - — Crohn's disease
 - — Celiac disease
 - — Malnutrition
- **Medications**
 - — Recurrent antibiotics
 - — Gastric acid suppression

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Is SIBO Just Dysbiosis?

- Short Answer : No – although some people think so
- Dybiosis can results from lack of good bacteria only – and does not mean bad bacteria is present in excess in the small intestines
- Dysbiosis does not mean there is low gastric acid or slow motility
- Both require a similar protocol
- If there is an altered bowel anatomy in SIBO, surgery could be an option



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Protocol

- Ensure enough vitamins and minerals especially B12 and other B's and fat-soluble vitamins (especially in cases of weight loss)
- Antibiotic therapy may be employed by MDs (not a lot of proof that this works)
- Glutamine/gut health product
- Digestive enzymes with HCL
- Probiotics
- Cranial sacral or osteopath for ileocecal valve issues
- Antimicrobials



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And Finally...

- You will not consider SIBO without consultation with MD or ND assessment
- Regular dysbiosis protocol will help with SIBO
- One theory is that fructans (found in fruits and some vegetables) may be an issue
- A food journal can help decide if any foods aggravate
- High nutrient diet will help with nutritional deficiencies
- It takes time for this to correct

