## THE BETTER HEALTH NEWS

## FIBROMYALGIA AND SIBO

According to research appearing in the Journal of Musculoskeletal Pain (2001;9(3):107-113), there may be a connection between fibromyalgia and bacterial overgrowth in the small intestine. There were 815 subjects, of whom 152 were diagnosed as having fibromyalgia. Of the 152 fibromyalgia patients, 29 had inflammatory bowel disease and were excluded from the study. Of the remaining 123 fibromyalgia patients. 96 tested positive for bacterial overgrowth in the small intestine, as diagnosed by the lactulose hydrogen breath test. Also, 107 of the subjects met the criteria for irritable bowel syndrome.

In a follow up test following antibiotic therapy, the 25 subjects returned for testing. Of those 25 patients, 11 had the small intestine bacteria eliminated and 14 had incomplete eradication of the bacteria. Of the 25 patients, 57% had a global improvement in their symptoms.

The article notes a correlation between fibromyalgia symptoms and certain species of bacteria. Certain species of Chlamydia and Borrelia may produce endotoxins that can cause the systemic symptoms.

# HYDROGEN BREATH TEST

Bacteria do not belong in the small intestine in any appreciable levels. If they are present in the small intestine, gas, bloating and other digestive symptoms may ensue. When certain anaerobic bacteria are fed certain sugars, they produce hydrogen. If there are a lot of bacteria in the small intestine, a lot of hydrogen is produced. If you give a fixed amount of a sugar, like lactulose, and measure the amount of hydrogen produced, you can get an idea of how much bacteria is present in the small intestine.

Generally the patient fasts for 12 hours before the test, which begins by breathing into a balloon. The patient then eats a measured dose of a specific sugar (which will cause bacteria to produce hydrogen). Breath samples are then taken every 15 minutes for three to five hours. The test is interpreted by how much hydrogen is produced in the breath and when it is produced. It is not a perfect test; some bacteria do not produce hydrogen. The test can also be misinterpreted, but in many instances it can show if there are bacteria present in the small intestine.

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SIBO AND GERD Medication

FREE HEALTH QUESTIONNAIRE

IRRITABLE BOWEL 6

### SIBO

The entire gastrointestinal tract, including the small intestine, normally contains bacteria. The number of bacteria is greatest in the colon (usually defined as at least 1,000,000,000 bacteria/mL of fluid and much lower in the small intestine (less than 10,000 bacteria/ mL of fluid). Moreover, the types of bacteria within the small intestine are different than the types of bacteria within the colon. SIBO is an acronym for "Small Intestine Bacterial Overgrowth". As noted above, normally there are few bacteria in the small intestine. In SIBO abnormally large numbers of bacteria (usually defined as at least 100,000 bacteria/mL of fluid) are present in the small intestine. Also, colonic-type bacteria (resembling bacteria normally found in the colon) proliferate in abnormally large numbers in the small intestine.

The symptoms of SIBO are similar to irritable bowel syndrome; they include abdominal bloating or distension, gas, diarrhea, and abdominal pain. In advanced cases, there may be vitamin and mineral deficiencies and weight loss.

SIBO can be caused by damage to the nerves or muscles in the gut, resulting in leftover bacteria in the small intestine. For example, diabetes mellitus and scleroderma can both affect the muscles in the gut, leaving room for SIBO to develop. Physical obstructions in the gut, like scarring from surgeries or Crohn's disease, can also cause an abnormal buildup of bacteria in the small intestine. Diverticulum, although much less common in the small intestine, can also collect bacteria instead of passing it on to the colon, where it belongs. There are also medications that influence or disrupt the normal gut flora, such as antibiotics, acid-blocking drugs, and steroids. Another common cause is from a diet high in sugar, refined carbohydrates and alcohol.

The symptoms from SIBO are the result of the fermentation produced by the bacteria in the small intestine. Carbohydrates can feed the bacteria, producing gas and other irritating metabolic byproducts. A variety of dietary carbs can make symptoms of SIBO worse, including fructose and sorbitol in fruits, lactose in dairy, fructans in wheat or onions, and more complex fibers in beans and broccoli. Indeed, the more easily fermentable the carbs, the more suffering they are likely to produce even if the foods they're found in are objectively "healthy." These families

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of highly fermentable carbs are sometimes referred to as FODMAPs. The term FODMAP is an acronym, derived from "Fermentable, Oligo, Di, Mono-saccharides And Polyols." These carbohydrates are commonly found in the modern Western diet.

The standard medical treatment for SIBO is an antibiotic called Xifaxan. Because Xifaxan is not well absorbed throughout the body, it mostly stays in the gut and is very effective against SIBO. There are, of course, natural substances that can kill the unwanted bacteria.

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### SIBO AND GERD MEDICATION

Proton pump inhibitors (PPIs) reduce the production of acid by blocking the enzyme in the wall of the stomach that produces acid. PPIs may increase the risk of Clostridium difficile infection of the colon. High doses and long-term use (1 year or longer) may increase the risk of osteoporosis-related fractures of the hip, wrist, or spine. Prolonged use also reduces absorption of vitamin B<sub>12</sub> (cyanocobalamin). Long-term use of PPIs has also been associated with low levels of magnesium (hypomagnesemia). Analysis of patients taking PPIs for long periods of time showed an increased risk of heart attacks.

Use of Proton Pump Inhibitors (drugs like Prilosec and Prevacid) have been linked to hip fracture in people over 50, according to research appearing in the Journal of the American Medical Association (2006;296:2947-2953). This may be due to a loss of protein and mineral digestion and absorption as a consequence of the lack of stomach acid. No one has proven the mechanism, but it is a reasonable assumption that there is interference with nutrient absorption.

Basically, we know that reduction of stomach HCl affects absorption of certain nutrients. PPIs can also be linked to SIBO (small intestine bacterial

overgrowth). Here is a quote from an abstract published in the World Journal of Gastroenterolgy (2015 Jun 14;21(22):6817-9): "Generally, proton-pump inhibitors (PPIs) have great benefit for patients with acid related disease with less frequently occurring side effects. According to a recent report, PPIs provoke dysbiosis of the small intestinal bacterial flora, exacerbating nonsteroidal anti-inflammatory drug induced small intestinal injury. Several meta-analyses and systematic reviews have reported that patients treated with PPIs, as well as post-gastrectomy patients, have a higher frequency of small intestinal bacterial overgrowth (SIBO) compared to patients who lack the aforementioned conditions. Furthermore, there is insufficient evidence that these conditions induce Clostridium difficile infection. At this time, PPI-induced dysbiosis is considered a type of SIBO. It now seems likely that intestinal bacterial flora influence many diseases, such as inflammatory bowel disease, diabetes mellitus, obesity, non-alcoholic fatty liver disease, and autoimmune diseases. When attempting to control intestinal bacterial flora with probiotics, prebiotics, and fecal microbiota transplantation, etc., the influence of acid suppression therapy, especially PPIs, should not be overlooked."

Your diet is a
bank account.
Good food
choices are
good
investments.

Bethenny Frankel

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### SIBO AND IBS

One possible cause of irritable bowel syndrome (IBS) is bacterial overgrowth in the small intestine. In research appearing in the *Journal of the American Medical Association* (2004;292(7):852-858) suggests that the bloating seen in IBS can be caused by bacteria in the small intestine. Bloating immediately following a meal is an indication of small intestine bacterial overgrowth.

Hydrogen excretion after ingesting lactulose (a sugar), is found in 84% of subjects suffering from IBS. It is an indirect method for finding bacterial overgrowth in the small intestine, but there is no good direct method available. The symptoms of 75% of patients with IBS improve when small intestine bacterial overgrowth is treated.

Research appearing in the *American Journal of Gastroenterology* (December 2000;95(12):3503-3506) studied patients with IBS. The researchers

were able to alleviate symptoms in 50% of the patients by killing the bacteria in the small intestine.

The intestinal tract is an ecosystem, containing several pounds of bacteria. Those bacteria should be confined to the large intestine. Many species of bacteria are beneficial and protect the intestinal lining, remove chemical toxins, produce vitamins and keep harmful bacteria in check. Supplements, known as probiotics, are often taken to replenish normal and helpful bowel bacteria. Research appearing in the *American Journal of Gastroenterology* (2000; 95(5):1231-8) demonstrated that taking probiotic bacteria can reduce the symptoms of IBS.

These small studies indicate that bacteria are involved with IBS. Looking at the intestinal tract like an ecosystem may be able to help us find an ef-