

Probiotics in the management of irritable bowel syndrome

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Irritable bowel syndrome (IBS) is the most common functional bowel disorder diagnosed by primary care physicians and gastroenterologists.¹ Estimation of the exact prevalence of IBS is complicated, because up to 70% of persons with symptoms of IBS do not seek medical treatment.² The ratio of female-to-male sufferers is approximately 2:1. IBS affects up to 1 in 5 Americans and is second only to the common cold as a leading cause of workplace absenteeism in the United States. IBS costs the US health care system up to an estimated \$20 to \$25 billion annually in direct and indirect costs.^{1,3} IBS is an episodic condition that is accompanied by a wide range of symptoms, including abdominal pain and discomfort, bloating, and altered bowel function (constipation and/or diarrhea).

Because IBS is not associated with excess mortality, the medical community has not until recently considered IBS to be a disease. Instead, it was considered to be a somatic response to excessive stress. However, there is significant morbidity associated with IBS, as patients suffering from IBS-related symptoms endure a great deal of distress, often preventing them from participating in activities they would normally enjoy. The impact of IBS on quality of life has been estimated to be greater than that of diabetes and similar to that of clinical depression.¹

Management of IBS

The etiology of IBS is currently unknown. Because of this, the goal of therapy is symptom management and reduction in the frequency and severity of episodes, or “bouts.” The management of IBS ranges from dietary and behavioral changes to medications. Dietary changes may involve slowly increasing fiber intake while also reducing intake of dairy products, fatty foods, spices, and caffeine. Patients are often encouraged to try an exclusion diet—restricting their diet to bland foods, gradually adding new foods, and then recording symptoms.³ Therapeutic agents, whether prescription or over the counter, are utilized primarily for symptom management. The most common prescription therapeutic agents have the greatest impact on bowel function by either slowing down or speeding up transit times. Other forms of therapy have targeted the gut-brain function and involved the use of agents such as antidepressants and even hypnosis.

Probiotics are currently under consideration to help in the management of IBS, as they support a healthy, normal digestive system.

Probiotics defined

Probiotics have been defined as live microbial food supplements that beneficially affect the host by improving the intestinal microbial balance, or, more broadly, as “living microorganisms, which upon ingestion in certain numbers, exert health benefits beyond inherent basic nutrition.”⁴ It was Metchnikoff in 1907 who first implied that ingested bacteria, in the form of yogurt and other fermented foods, could beneficially affect the normal gut flora.⁵

Many of the probiotic products on the market today contain lactobacilli (a type of lactic acid-producing bacteria [LAB]), which represents a relatively small proportion of the normal total gut microflora. LAB are a group of bacteria that are mostly of human origin, with the various strains differing in their features. All LAB colonize mucosal surfaces, including the intestinal system, and promote vitamin production, natural protection from invading pathogens, and food digestion. Bifidobacteria are one type of LAB. They are active in bile acid deconjugation, catabolism of dietary carbohydrates, and synthesis of vitamins.⁶

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Probiotics in IBS

A limited amount of data in scientific literature suggest that patients with IBS may have an imbalance in their gastrointestinal flora.⁷ This has been demonstrated through classic microbiology studies using conventional plating techniques as well as molecular approaches. In addition, function studies in the flora of patients with IBS have shown that patients with IBS produce an excessive amount of short-chain volatile fatty acids and hydrogen gas versus healthy controls.^{8,9} Therefore, it would appear plausible that some disturbance in the normal flora among these patients may indeed account for the symptoms observed or, alternatively, that the GI environment in patients with IBS provides conditions conducive to the proliferation of a more virulent flora. Recently, the concept of small intestinal bacterial overgrowth (SIBO) has been proposed as a plausible explanation for symptoms of IBS.^{10,11} Several studies in the scientific literature indicate that SIBO is much more common in individuals with IBS. These observations suggest that these individuals possess a modified flora both in composition as well as end product metabolism. Therefore, the concept of using a probiotic to help promote normal digestive function is an extremely intriguing approach.

Several studies in the scientific literature have explored the use of probiotic therapy for the alleviation of the symptoms of IBS with mixed results.¹²⁻¹⁴ The majority of these studies were small and many were poorly controlled, providing a possible explanation for the mixed results. A second possible explanation might be the type of probiotics evaluated in these studies. Certain probiotics have not been demonstrated to possess the ability to alter the composition or metabolism of the colonic flora in a manner that would be beneficial for the patient with IBS. Alternatively, various probiotics may not work in conjunction with the normal flora to have the positive impact on the human immune system necessary to alleviate the symptoms. However, recent studies that are much larger and well controlled are beginning to shed new light on the benefits of probiotics.^{15,16}

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