



# Probiotics

## for Easing Gastrointestinal Distress

Probiotics, or “friendly bacteria,” may offer promising results when it comes to soothing symptoms associated with IBS.

By Trudie Mitschang

When you think of bacteria, you probably picture disease-causing microbes lurking beneath bathroom counters or hiding in the recesses of picnic potato salad. But not all bacteria are bad — or bad for you. Probiotics — also known as beneficial or “friendly” bacteria — naturally live in the digestive tract and perform many essential functions to keep a body healthy. The term “probiotic” comes from the root words *pro* and *biota*, meaning “for life,” and is commonly used to refer to dietary supplements or foods that contain beneficial bacteria similar to those normally found in the body.

The World Health Organization (WHO) defines probiotics as “live microorganisms that, when administered in adequate amounts, confer a health benefit on the host.” Probiotics are known to restore the balance of the intestinal microflora that can become unbalanced due to illness, stress, age, traveling or the use of medication such as antibiotics. In recent years, there has been a growing public and scientific interest in probiotics and their potential

health benefits. Researchers are studying whether probiotics taken as foods or supplements can help treat or prevent certain types of illness, including irritable bowel syndrome (IBS) and various digestive problems.

While study results vary, there is encouraging evidence, especially for those with autoimmune and immune deficiency diseases, that probiotics may help treat IBS and diarrhea, especially following treatment with certain antibiotics, as well as shorten the duration of intestinal infections. In addition, research shows that probiotics may help prevent and treat vaginal yeast infections and urinary tract infections, reduce bladder cancer recurrence and prevent and treat inflammation following colon surgery (pouchitis).

Some preliminary studies also report that certain probiotics can play a role in reducing the development of allergies in children, decreasing *Helicobacter pylori* colonization of the stomach, decreasing the risk of certain cancers, decreasing dental-caries-causing microbes in the mouth, and simply keeping healthy people healthy.<sup>1</sup>

"Probiotics are controversial, but I believe that establishing a 'normal' microbial flora of the gastrointestinal tract can only be helpful," says Terry Harville, MD, PhD, medical director of the Special Immunology Laboratory at the University of Arkansas for Medical Sciences.

### Probiotics in History

While awareness of the health benefits of probiotic-rich foods has been acknowledged for centuries (dating back to the ancient Assyrians), the actual field of probiotic study is relatively new. Russian physiologist and Nobel Prize winner Elie Metchnikoff (1845-1916) has been recognized as the first to document the link between probiotics and longevity, suggesting that consuming bacteria could have a beneficial effect on health. In 1907, he proposed that the acid-producing organisms in fermented dairy products, if consumed regularly, lead to a longer, healthier life.

Metchnikoff's theory was based on the observation that Bulgarians from the Balkan region of Eastern Europe who regularly consumed fermented dairy products such as yogurt were known for their longevity and good health. Since then, decades of microbiological and clinical research regarding probiotics and health have supported the theory that beneficial bacteria can improve key intestinal functions.

"In any condition of the GI tract where the microenvironment has been altered, inflammatory problems may arise. When a condition creates inflammation, it can further damage the microenvironment, causing cramps, diarrhea and bloating," states Harville. "The typical therapeutic approach is to use antimicrobial antibiotics to kill off the invading bacteria and fungi. Unfortunately, the antibiotics may also kill the normal-flora microorganisms. Using various lactobacilli species

such as acidophilus and bifidus at significantly high doses may counteract the bad flora and, thereby, prevent unwanted inflammation and clinical side effects."

### Probiotics and IBS

IBS is one of the most common gastrointestinal disorders. The condition, with symptoms including abdominal pain, constipation and/or diarrhea, affects up to one in five Americans and is second only to the common cold as a leading cause of workplace absenteeism in the United States.

Although IBS affects many people, it is especially prevalent among those with primary immune deficiency disease. There are many theories about what causes IBS, including an altered immune response or an imbalance of bacteria in the gut, which is why one area of growing interest in managing IBS is probiotics, beneficial bacteria that aid digestion while possibly strengthening the body's natural defenses and supporting a balance of healthy bacteria in the GI tract. While a final verdict on probiotics and their role in curbing IBS symptoms is still out, many case studies show promising results.

In a review of medical research, the American College of Gastroenterology Task Force on IBS found 11 studies in which probiotics were shown to reduce symptoms of IBS.

Researchers note that effectiveness varied depending on which probiotic was studied, with a trend toward combinations of probiotics providing the greatest improvement. This research was published in the January 2009 supplement to the *American Journal of Gastroenterology*.<sup>2</sup>

Another recent study published in the March issue of *Postgraduate Medicine* found that a strain of probiotic bacteria, *Bacillus coagulans*

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## Probiotics Shopping Guide

Some of the claims made by probiotics manufacturers are hard to swallow. To help consumers sort through the hype, the International Scientific Association for Probiotics and Prebiotics (ISAPP)<sup>5</sup> has developed the following criteria to help consumers make smart choices when shopping for probiotic supplements.

**Understand strains.** A probiotic is defined by its genus (e.g., *Lactobacillus*), species (e.g., *rhamnosus*) and strain designation (often a combination of letters or numbers). The concept of a bacterial “strain” is similar to the breed of a dog — all dogs are the same genus and species, but different breeds of dogs have different attributes. Likewise, different strains of even the same probiotic species may have different attributes.

**Food or supplement** — which is better? Probiotics can be found in various foods, yogurts and supplements. Probiotic content is generally more important than the way in which they are consumed.

Any claim made on a product, no matter how general, is supposed to be truthful and substantiated — even though FDA approval is not required to make these claims.

**Do your homework.** Product claims of health benefits must be based on sound research done on the particular probiotic. The product should contain the specific strain(s) of bacteria at the same levels as used in published research. The studies should be performed in humans and published in peer-reviewed, reputable journals. Check product websites to see study results. A pharmacist or healthcare provider should be able to help consumers sort through the scientific language.

### What to look for on a label:

- Strain: What probiotic is inside?
- Expiration date.
- CFU (Colony Forming Units): How many live microorganisms are in each serving?
- Suggested serving size: How much do I take?
- Health benefits: What are the product’s main claims?
- Proper storage conditions: Does the product need refrigeration?
- Corporate information: Who makes the product, and where is more information available?

GBI-30, PTA-6086 was effective in relieving abdominal pain and bloating in subjects with IBS.<sup>3</sup> Subjects taking the *Bacillus coagulans* probiotic strain, trademarked GanedenBC30 and marketed as an over-the-counter product, experienced statistically significant reductions in abdominal pain and bloating versus baseline at each of the weekly measurements taken throughout the eight-week study. Subjects taking a placebo experienced statistically significant reductions in just two of the weekly abdominal pain measurements and saw no statistically significant effect in bloating. According to Larisa Hun, MD, author of the 44-subject study, “A combination of *Bacillus coagulans*, *Lactobacillus acidophilus* and *Streptococcus thermophilus* was previously shown in a clinical trial to significantly improve IBS symptoms, but it was not possible to determine what effect, if any, each strain had by itself.”

This study, and others like it, adds to the growing body of evidence that certain probiotics can help with IBS and may provide IBS sufferers with a non-drug treatment option.

### The Antibiotic Dilemma

Many patients with primary immune deficiency disease (PIDD) are frequent users of antibiotics. Antibiotics are powerful aids in the fight against disease, but most antibiotics not only destroy harmful bacteria that make people ill, they also wipe out the good bacteria needed to stay healthy. And it’s not just a temporary upset; the beneficial microorganisms in the digestive tract can be negatively affected for as long as six months after a typical seven-day course of standard antibiotics. Many people who are regularly prescribed antibiotics know all too well that positive effects of antibiotic treatment are often tempered by unpleasant side effects like diarrhea, which develops because the antibiotics have destroyed the friendly bacteria in the gut.

Studies have shown that if you take probiotics in food or as an oral supplement, these beneficial bacteria cultures can reverse the harmful after-effects of antibiotic treatment and prevent the growth of negative bacteria during times of stress. For PIDD patients suffering from antibiotic therapy side effects, probiotic supplementation may offer hope and relief.

However, the U.S. Food and Drug Administration does not regulate supplements, so specific claims about the effects of supplements have not been tested to ensure they are accurate. In addition, supplements should not be considered the cure-all, and spending on supplements

should be made wisely. Naturally, individuals should discuss their situation with their doctor prior to beginning any supplement regimen.

### **A Yogurt a Day Keeps the Doctor Away**

Probiotic awareness has become more prevalent in the United States in recent years; you can find probiotic supplements at most grocery, drug and vitamin stores. But in many parts of Europe and Asia, the health benefits of probiotics have long been enjoyed as part of the typical diet. This is not surprising considering that people of other nations tend to turn to foods and natural remedies to maintain their health, while Americans rely far more heavily on pills and medications. In fact, according to the International Probiotics Association,<sup>4</sup> Japanese grocery store shelves are stocked with dozens of probiotic-containing foods such as miso and tempeh, while in Europe, yogurts and fermented milks are the most widely consumed probiotic products. In the U.S., consumption of probiotic supplements far outweighs consumption of foods containing these beneficial bacteria.

Part of the reason for this is that much of the American diet is heavily pasteurized and preserved, while foods typically known to contain probiotics are either unfamiliar or unappetizing to the typical American palate. Foods like kefir (a cultured milk beverage), plain yogurt, naturally fermented sauerkraut and kimchi (a Korean pickled vegetable dish) are unlikely to replace mainstream American meals and snacks, regardless of their health benefits.

Thankfully, many American food manufacturers are catching on, and more and more familiar foods are now being packaged with "live active cultures," which could make it easier for people to get their daily dose of good bacteria. Foods to try include select cheeses such as Kraft's LiveActive natural cheese snacks (which contain the probiotic *Bifidobacterium lactis*) and Lavarone Bros. Specially Selected Amish Yogurt Cheese (prepared with the probiotic live cultures *Lactobacillus acidophilus* and *bifid bacterium*). Other good sources of probiotics include blue cheese and other aged

cheeses. Probiotic-rich cheeses often feature words such as "live culture," "active culture" or "probiotics" on the packaging. Other products to try include Dannon Activa Yogurt, DanActive Dairy Drink, Sunny Crunch Probiotic Chewy Cereal Bars and Kashi Vive Probiotic Digestive Wellness Cereal.

It should be noted that there have been problems in the U.S. with unpasteurized products causing severe, and sometimes deadly, *E. coli* infections. These issues are particularly problematic in patients with a chronic disease, so caution should be taken when consuming such products.

### **Probiotics: Do They Spell Relief?**

Individuals who suffer from IBS or other chronic digestive disorders have undoubtedly tried multiple courses of treatment, from medications to dietary restrictions, with varying degrees of success. If considering probiotic supplementation, the topic should be discussed with the patient's doctor. Studies on the effects of probiotics on patients with IBS are

ongoing, and while some have shown that probiotics are helpful to IBS sufferers, not all patients experience positive results. Still, clinical trials have shown no harmful side effects. Of course, a doctor should always be consulted before starting any treatment or regimen. A specialist can help to find an effective IBS treatment to suit unique needs, and can monitor progress toward healing. For more information about probiotics and probiotic supplements, visit [www.usprobiotics.org](http://www.usprobiotics.org). ■

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**TRUDIE MITSCHANG** is a staff writer for IG Living magazine.