

# What You Need to Know About “Biotics” and Your Health



For some reason it’s a flashbulb memory: In 2008, referring to a component of whole grains that encourages the growth of beneficial gut bacteria, I used the word “prebiotic.” My editor wasn’t familiar with the term, and she queried whether I meant “probiotic.” Probiotics are friendly bacteria like the lactobacilli provided by yogurt, which were then gaining traction as healthful substances.

How times have changed. Today it would be challenging to leave any supermarket without encountering a wide variety of probiotic foods, from yogurt and kefir to kombucha and kimchi.

Prebiotics are still not as visible— probably because they occur naturally in many plant foods like leafy greens, whole grains and legumes. However, many companies are actively developing products that deliver prebiotic benefits. And this is just the tip of the iceberg. Shopping for groceries, you may also come across terms like “symbiotic” and “postbiotic.” The following are a few basics, in case you need help navigating this muddled terrain.

First some background. Ingestibles providing biotics are known as “functional foods,” which means they confer health benefits beyond the nutrients they provide. Functional foods are a multi-billion-dollar component of the food industry, and their share is rapidly growing. According to food industry trend-trackers The Hartman Group, significant numbers of Americans are actively seeking products to boost their resilience. This opens the door to increased opportunities for functional foods — and, it probably goes without saying, the potential for marketing abuse.

## Definitions Mean a Lot

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In part to ensure that functional foods deliver the health benefits consumers expect, a group of industry experts founded the International Scientific Association for Probiotics and Prebiotics (ISAPP) in 2002. Its achievements include well-thought-out definitions of relevant terminology.

### Probiotics

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ISAPP defines probiotics as “live microorganisms that, when administered in adequate amounts, confer a health benefit on the host.” Only a small number of potentially beneficial bacteria (known as commensal) have been studied in the context of human health and each works its magic in particular ways. If you’re expecting health benefits, it’s important to know the probiotic’s specifics — its genus, species and strain. For example: Genus: *Bifidobacterium*; Species: *Infantis*; Strain: 3562. This probiotic is marketed under the name Align. It has been clinically tested and shown to improve symptoms associated with IBS when taken in the recommended dose (also important).

### Fermented Foods

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Although many have functional value, fermented foods don’t meet ISAPP’s strict definition of probiotics. Yes, they provide living microbes known to boost health. Like probiotics, they also have different benefits. However, fermented foods may not contain the exact strains and/or provide the dosage required to deliver the benefit that specifically formulated probiotics can guarantee.

### Prebiotics

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ISAPP defines prebiotics as substances that encourage the growth of existing beneficial bacteria and/or their activity. A preponderance of beneficial (commensal) gut bacteria is linked with good health, so it’s a good idea to ramp up their numbers. Plant foods like fruits, vegetables, whole grains and legumes provide prebiotics (which include substances like fiber, resistant starch, polyphenols and oligosaccharides, also found in human breast milk.)

In addition, prebiotics encourage commensal bacteria to produce substances known as metabolites. These compounds are known to support your metabolism, immune system and even your mental well-being. Prebiotics also help your body to absorb nutrients like calcium and have been effective in treating certain gastrointestinal disorders. Unsurprisingly, manufacturers are adding prebiotics to prepared foods. To meet their criteria, ISAPP notes that foods designated as having prebiotic value would need to increase specific probiotic microorganisms like Bifidobacteria and Lactobacilli.

## **Synbiotics**

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Synbiotics are a mixture of probiotics and prebiotics that work together synergistically. That means their pairing delivers health benefits greater than each constituent would provide on its own. For instance, one study found the combination of probiotic *Bifidobacterium longum* 2 with the prebiotic psyllium was more effective in relieving the symptoms of ulcerative colitis than either constituent.

Once again, manufacturers are actively developing products utilizing this concept: for instance, yogurt spiked with a “brittle” of walnuts and various whole grains. To be labelled a symbiotic food, ISAPP notes that the probiotic component should include live organisms proven to deliver the health benefits claimed.

## **Postbiotics**

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At its simplest, postbiotics are the metabolites produced when your commensal bacteria digest prebiotics. These include short-chain fatty acids, which have many well-documented physiological benefits as well as certain “non-viable” probiotics.

Postbiotics are naturally found in some traditional foods like Japanese natto and sourdough bread. ISAPP’s definition focuses on inactivated bacteria, which remain stable even when processed by heat. For instance, sourdough originates with fermented grains which produce lactic acid bacteria. The live organisms are killed in baking but many of their health benefits remain.

Given our traditional emphasis on the value of “live cultures” this concept may be challenging. However, we know that inactivated microorganisms can encourage the body to produce beneficial substances like bile salts, which support a healthy metabolism. Inactivated strains of specific bacterial have also been shown to improve certain gastrointestinal conditions like irritable bowel syndrome.

While there is no question that various biotics can support good health, it’s worth remembering that our microbial ecosystem is extremely complex. Numerous factors, including your genome and the quality of your existing microbiome determine their potential benefit. A healthy microbiome is still the best foundation for tapping into the power of

biotics. Research shows that the best way to build a thriving gut is by eating a diet high in nutritious whole foods, especially plant foods. Nutrients like fiber and polyphenols nourish your microbial friends, who in turn, help to keep this inner orchestra playing in tune.

### **Selected Resources**

Salminen, S. et al. The International Scientific Association of Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of postbiotics. Nat Rev Gastroenterol Hepatol (2021).

Guyonnet, D. Fermented milk containing Bifidobacterium lactis DN-173010 improves gastrointestinal well-being and digestive symptoms in women reporting minor digestive symptoms: a randomised, double-blind, parallel, controlled study. Br. J Nutr. 2009

Fujimori, S et al. A randomized controlled trial on the efficacy of symbiotic versus probiotic or prebiotic treatment to improve the quality of life in patients with ulcerative colitis. Nutrition 2009.

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