
The Possible Benefits of SymBiotics with FOS, a Dietary Supplement

- Helps maintain a healthy intestinal probiotic balance, especially in the large intestine*
 - Supports the structure and functional integrity of the epithelial lining in numerous ways*
 - May boost immune response and support resistance*
 - Can produce vitamins, enzymes, and organic acids that support normal intestinal pH*
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Description

SymBiotics with FOS puts the probiotics all together! Some suppliers claim that probiotic strains can only work if given one at a time, and that certain single strains have near magical properties. Yet the intestinal micro-ecosystem typically hosts up to 400 strains of bacteria. From the point of view of intestinal health, a product that provides bacteria for the different probiotic "niches" makes a lot more sense. The nine strains in SymBiotics are: *Lactobacillus acidophilus*, *L. rhamnosus A* and *L. rhamnosus B*, *L. bulgaricus*, *L. casei*, *L. sporogenes*, *Bifidobacterium longum*, *B. breve*, and *Streptococcus thermophilus*.

An optimally functioning intestinal system is crucial to the health of the whole body. The human gastrointestinal tract harbors trillions of microorganisms, some beneficial to our health and some not. The cells that line the intestines, called villi, form a single layer that regulates digestion and absorbs the digested products. Friendly (probiotic) bacteria live attached to the villi, finding food and shelter, and in turn providing benefits to their host. Probiotic bacteria naturally occur in fermented foods, such as live culture yogurt and sauerkraut. Nobel Prize laureate Elie Metchnikoff observed in the 19th century that people in the Balkans who ate yogurt and other foods cultured with lactobacilli were longer-lived. He theorized that ingestion of lactobacilli could prolong life by competitively inhibiting undesirable microbes, preventing them from taking up residence and producing toxins. Intestinal dysbiosis occurs when unfriendly bacteria imbalance probiotic bacteria. Factors that can promote dysbiosis include antibiotics, steroids including birth control pills, alcohol, bacterial infections, stress, traveling or a poor diet.

Trillions of probiotic microflora are found in the healthy small and large intestines. They can support the structure and functional integrity of the epithelial lining by helping to metabolize vitamins, minerals

and hormones, improve intestinal motility and assist in detoxification.* They can boost immune function, and have been shown to support resistance.* They produce metabolites such as lactic acid, hydrogen peroxide, bacteriocins and acetic acid that normalize the pH of the intestine and promote a healthy micro-ecological balance.* They support healthy conditions in the vagina, and cholesterol within normal levels.* They can produce lactase, the enzyme that digests lactose (milk sugar). When probiotics are depleted, supplemental probiotic bacteria are often needed in large amounts – in some cases, ten billion colony forming units (CFU) per day or more may be needed to restore intestinal balance.*

Members of the genus *Lactobacillus* take up residence primarily in the wall of the small intestine, where they provide many functions, including normalization of pH, promotion of digestive function, and stimulation of immune response.* *L. acidophilus* produces DL-lactic acid, amylase (carbohydrate-digesting enzyme), and bacteriocins. It is resistant to bile and gastric acids and has moderate lactase activity. *L. rhamnosus* has been shown to support the activity of both white blood cells and lymphocytic natural killer cells.* It also sometimes occurs in the large intestine, where it can create favorable conditions for the implantation of bifidobacteria. Compared to *L. acidophilus*, *L. rhamnosus* is less tolerant to bile and is more transient. It is a good releaser of lactase throughout the stomach and small intestine. *L. casei* can survive in a wide pH and temperature range, and it also produces DL-lactic acid and amylase. It is smaller than *L. acidophilus* and complements its growth. The name *casei* originates from the Latin word *caseus*, meaning cheese. All three of the above-mentioned lactobacilli were originally isolated from the human intestinal tract.

L. sporogenes is a particularly hardy member of the lactobacillus group. It is stably encapsulated in spores

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that can resist stomach acid, antibiotics and other chemicals, heat, radiation and freezing. It is aerobic, so it is unaffected by the presence of oxygen. Typically, *L. sporogenes* proliferates rapidly in the small intestine, where it metabolizes a wide range of sugars, and produces the superior L(+) form of lactic acid, which is utilized better than the L(-) form. *L. sporogenes* may work quickly to help crowd out undesirable bacteria and reduce their production of potentially harmful substances.*

L. bulgaricus and *S. thermophilus* are found in yogurt. They are transient intestinal bacteria - they benefit the gastrointestinal tract as they pass through, but do not take up residence there. They produce lactic acid, and readily release high levels of lactase when exposed to bile in the stomach and small intestine. They produce niacin, folic acid, pyridoxine, and biotin, and have been shown to help protect against radiation damage and deactivate toxic pollutants.

Almost 30 different species of *Bifidobacteria* have been identified, and they are the most plentiful probiotic bacterial group. They are more delicate than other common probiotics, and can easily be depleted by intestinal toxins or other stressors. Bifidobacteria are found in the large intestine and to a lesser extent in the lower part of the small intestine. *B. breve* was first isolated from human infants, *B. longum* from human adults. In breastfed infants bifidobacteria comprise more than 95% of intestinal bacteria. They

are anaerobic, and unlike other probiotic bacteria, they can ferment carbohydrates to both acetic and formic acids. They also produce lactic acid, creating a healthy pH in the colon.* They produce vitamins B1, B6, folic acid, and enzymes such as casein phosphatase and lysozyme. They also support the absorption of vitamins, and can take up iron from the contents of the bowel. They stimulate IgA production in the intestinal lining, bolstering the epithelial immune response.* They may help decompose potentially toxic metabolites.* Bifidobacteria are resistant to bile and gastric acids and have moderate lactase activity.

Fructooligosaccharides (FOS), naturally occurring long-chain carbohydrates that are not digested or absorbed by humans, are utilized by bifidobacteria for food. Ascorbic acid (vitamin C) is added as a stabilizer.

The friendly bacteria in SymBiotics are tested for authenticity of strain and for potency. They are packed in glass rather than plastic, produced in small batches, and refrigerated at all times. They are produced with 20% higher potency than the label claim at the time of manufacture to counter inevitable potency decay due to temperature abuse and shelf life (aging). Also, freeze drying substantially increases shelf life potency. High quality strains, a sophisticated lyophilization process and meticulous handling combine to make SymBiotics unsurpassed in quality.

Each teaspoon (3.5 g) contains:	Calories	10
	Total Carbohydrates	3 g
	Sugars	3 g
	Vitamin C (as Ascorbic Acid)	180 mg
	Fructooligosaccharides	3 g
	<i>Lactobacilli</i>	3 Billion
	<i>Bifidobacteria</i>	0.8 Billion
	<i>Streptococcus thermophilus</i>	0.4 Billion

Other ingredients: Silicon dioxide.

Suggested Use: As a dietary supplement, 1 level teaspoon one to three times per day, or as directed by a healthcare practitioner.

Caution: Some individuals using FOS experience gastrointestinal bloating that does not subside after 1 or 2 weeks of use. In those cases, FOS should be discontinued. Recent clinical experience by some practitioners suggests that there may be certain unfriendly microbial invaders that are suspected of feeding on FOS, possibly producing the symptoms indicated above.



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