



FOR TRAINING PURPOSES ONLY

LIFE START®

DAIRY POWDER, *Bifidobacterium infantis*, NLS super strain

Probiotic supplement for children, toddlers, expectant and nursing mothers

INGREDIENTS

Bifidobacterium infantis, NLS Super Strain, non-fat milk powder, and whey powder derived from cow's milk containing lactose.

FORMAT

Available in 1.25 ounce powder.

POTENCY GUARANTEE

Each 0.5 gram serving (1/4 teaspoon) supplies a minimum of one billion cfu of live and active *Bifidobacterium infantis* Super Strain NLS guaranteed through the expiration date.

SUGGESTED USE

Suggested Use for Infants of 1 year and older, Expecting or Nursing Mothers: Take 0.5 gram (1/4 level teaspoon) daily mixed with 30 ml (1 oz.) of unchilled, filtered (chlorine-free) water, preferably before meals to optimize digestion. Take at least two hours after herbs, garlic and prescription drugs.

UNIQUE FEATURES

Supernatant Delivery System

This unique and proprietary probiotic delivery system protects and nourishes probiotic bacteria by keeping them together with their original growth medium (supernatant) for maximum potency. Research shows that the supernatant can make a probiotic up to 50% more effective.

Micropure Technology

Genetic testing guarantees proper strain identification. Quality testing guarantees gluten free, soy free and dairy free probiotics with no GMOs** and no FOS.



STORAGE AND HANDLING

Keep dry and refrigerated to maintain potency guarantee. Do not freeze or expose to moisture, heat or direct sunlight. Do not accept if seal is broken.

WHY *Bifidobacterium infantis* NLS STRAIN?

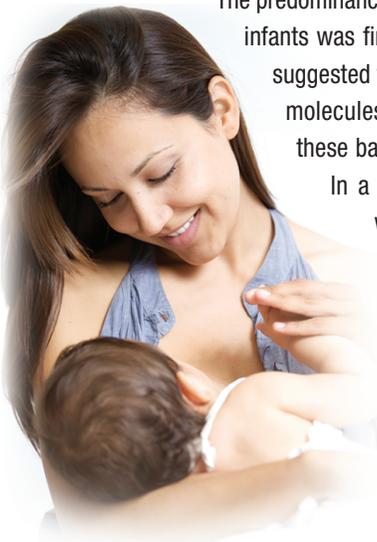
Infants are bathed in protective, beneficial microflora when they pass through their mother's birth canal. As a result, babies delivered vaginally have friendly, protective *Bifidobacteria*. In contrast, babies delivered by caesarian section (C-section) become bathed in the bacteria from their environment. Specifically, they're exposed to the bacteria on the skin of their mother and the bacteria in the delivery area. When this occurs, babies lose out because they miss the natural boost to their innate defenses, and don't receive digestive support for their neonatal gastrointestinal tract.

Breastfeeding by a healthy mother further enriches an infant's protective microflora and enhances an infant's growth and development. Probiotic microorganisms set up attachment sites on the infant gastrointestinal (GI) wall to form a microbial barrier that protects against invasion from less desirable and potentially harmful microorganisms. *B. infantis* is a natural inhabitant of the intestines in human infants and also occurs in small numbers in the human vagina.^{(1) (2)}

In addition, *B. infantis* represents one of the most predominant bacteria found in the gut of healthy, full-term, breastfed infants along with a small number of subspecies including *B. bifidum*, *B. longum* and *B. breve*. However, unlike these other subspecies *B. infantis* was recently named the 'champion colonizer of the infant gut' by researchers at U.C. Davis because of its unique ability to digest human breast milk oligosaccharides.

Bifidobacterium infantis **AND BREAST MILK**

Human breast milk evolved for three purposes: 1) Supply the nutritional needs of the infant; 2) Expose the infant to maternal immune properties; 3) Shape the infant gut microbiota. Breast milk is a fluid synthesized at the mother's expense and shaped throughout evolution to nourish the infant and improve its chance of survival. Breast milk provides many benefits for the infant. For example, not only is breast milk the best food for the infant, but it also provides human milk oligosaccharides that stimulate *Bifidobacterium infantis*. Many metagenomic studies show that *Bifidobacterium* is a dominant genus in the intestinal microbiota of breast-fed infants. In some cases, *Bifidobacterium* makes up approximately 75% of the total bacteria. Formula-fed infants have less *Bifidobacterium* than breast-fed infants. The difference in bacterial colonization between breast-fed and formula-fed infants can therefore be explained by the presence of human milk oligosaccharides (HMOs).



The predominance of *Bifidobacterium* in breast-fed infants was first noticed over 100 years ago. It suggested that breast milk contained certain molecules that stimulated the growth of these bacteria, defined as *Bifidus* factors.

In a 1980 German study, *B. infantis* was the predominant beneficial bacteria found in infants. Alarmingly, since that time, researchers have found a decline in the numbers of *B. infantis* found in infants, including breast-fed infants.^{1, 2} Basically, it appears that through the process of evolution and selection, breast-milk components

favor the growth of *B. infantis*. Therefore, we should mimic what evolution has taught us and supplement with only *B. infantis* to enhance the infant gut microbiota.⁽³⁾

Bifidobacterium infantis CHARACTERISTICS

Bifidobacteria, including *B. infantis*, have the following characteristics:

- Produce acetic and lactic acids, and small amounts of formic acid, from carbohydrates. These organic acids increase the acidity of the intestines and thereby inhibit undesirable bacteria.⁽⁴⁾⁽⁵⁾
- Prevent the colonization of the intestines by pathogens by competing for nutrients and attachment sites.⁽⁶⁾⁽⁷⁾
- Assist nitrogen retention and weight gain in infants.⁽¹⁾
- Inhibit bacteria that convert nitrates to potentially harmful nitrites.⁽⁸⁾
- Produce vitamins in the B-complex family.⁽⁹⁾

As reported, *Bifidobacteria* and the specific substances they secrete can protect the intestinal mucosa in infants.⁽¹⁰⁾⁽¹¹⁾ When the microflora of infants becomes disturbed from oral antibiotic therapy, vaccinations, convalescence or sudden weather changes, the levels of *Bifidobacteria* decline and lead to lower levels of digestive health. The use of *Bifidobacterium infantis* NLS can help with the nutritional restoration of the intestinal microflora.

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References:

1. Rasic, J; Kurmann, J. *Bifidobacteria and Their Role*. Basel, Switzerland. Birkhäuser AG. p. 24.
2. Jost, T., Lacroix, C. Braegger, C. and C. Chassard. "New Insights into Microbiota Establishment in Healthy Breastfed Neonates". *PLOS One*. (2012) 7.8.
3. Garrido, D.D., D.C.; Mills, D.A. "Consumption of human milk glycoconjugates by infant-associated bifidobacteria: mechanisms and implications." *Microbiology* (2013) 159: 649-664.
4. Kurmann, J. A., Rasic, J. L. "The health potential of products containing bifidobacteria". *Therapeutic Properties of Fermented Milk*. (1991) edited by R. K. Robinson:124-125. Book.
5. Bullen, C., Tearle, P.V., and A.T. Willis. "Bifidobacteria in the intestinal tract of infants: an invivo study". *J. Med. Microbiol.* (1976) . 9:325-333.
6. He, F., Ouwehand, A.C., Hashimoto, H., Isolauri, E., Benno, Y., and Salminen, S., "Adhesion of *Bifidobacterium* spp. to human intestinal mucus". *Microbiol Immunol.* (2001). 45.3: 259-262.

7. Liévin, V., PeiVer, I., Hudault, S., Rochat, F., Brassart, D., Neeser, J-R and A.L. Servin. "Bifidobacterium strains from resident infant human gastrointestinal microflora exert antimicrobial activity". *Gut* (2000) 47.5:646-652.
8. Sela, D.A., Chapman, J., Adeuya, A., Kim, J.H., Chen, F., Whitehead, T.R., Lapidus, A., Rokhsar, D.S., Lebrilla, C.B., German, J.B., Price, N.P., Richardson, P.M. and D.A. Mills. "The genome sequence of *Bifidobacterium longum* subsp. *infantis* reveals adaptations for milk utilization within the infant microbiome". *Proc. Natl. Acad. Sci. USA* (2008) 105:18964-18969.
9. Picard, C., Fioramonti, J., Francois, A., Robinson, T., Neant, T., and Matuchansky, C. "Review article: Bifidobacteria as probiotic agents-physiological effects and clinical benefits". *Aliment. Pharmacol. Ther.* (2005) 22:495-512.
10. Okamura, N., Nakaya, R., Yokota, H., Yanai, N., and T. Kawashima. "Interaction of *Shigella* with *Bifidobacteria*". *Bifidobacteria Microflora* (1986) 5.1:51-55.
11. Nakaya, R. "Role of *Bifidobacterium* in Enteric Infection" *Bifidobacteria Microflora* (1984) 3.1:3-9. Book