

NATREN
INC.

DISCOVER NATREN - THE ORIGINAL PROBIOTIC
since 1982

LIFE START[®] PRO

DAIRY FREE
Bifidobacterium infantis, NLS super strain

Probiotic supplement for children and expecting mothers

FOR HEALTH CARE
PROFESSIONALS ONLY.
NOT INTENDED FOR
PUBLIC USE.

INGREDIENTS

Bifidobacterium infantis NLS super strain containing organic whole grain brown rice milk concentrate, organic brown rice protein, cellulose powder, and organic whole grain brown rice syrup solids.



FORMAT

35.4 gram / 1.25 ounce powder

POTENCY GUARANTEE

Minimum of 2 billion colony forming units (cfu) of live, active *B. infantis* NLS super strain per serving (approximately 0.5 grams, or 1/4 teaspoon) guaranteed through the printed expiration date, if kept dry and refrigerated.

SUGGESTED USE

For infants: use 0.5 grams (approximately 1/4 level teaspoon) daily mixed with 30 ml (1 oz.) unchilled, filtered (chlorine-free) water, preferably before meals to optimize digestion. If using infant formula, use a portion of the formula to dissolve **LIFE START PRO**, then add the mixture to the remaining formula and shake the bottle to thoroughly mix.

LIFE START PRO should be taken at least 2 hours apart from herbs, garlic and prescription drugs for optimal results.



For expecting or nursing mothers: take 30 ml (1 oz.) (approximately 1/2 level teaspoon) daily mixed with 90 ml (3 oz.) of unchilled filtered water, non-fat rice, almond or soy milk or non-acidic juice. Mother's health is very important to developing and nursing babies. Mothers benefit from **LIFE START PRO** but should also supplement with **TRENEV TRIO**[®] for optimal health.

UNIQUE FEATURES

• The **Trenev Process**[®] uses a unique process to substantially increase the probiotic activity, while eliminating the need for additives. By keeping the bacteria in their natural environment (supernatant), provided by the brown rice ferment, the **Trenev Process** can ensure potency and effectiveness.

- ✓ Researched, formulated and manufactured by Natren Inc.
- ✓ Low-allergenic organic brown rice base
- ✓ Gluten free ✓ Soy Free ✓ No FOS ✓ No GMOs**
- ✓ True dairy free (no casein or *B-Lactoglobulin*)

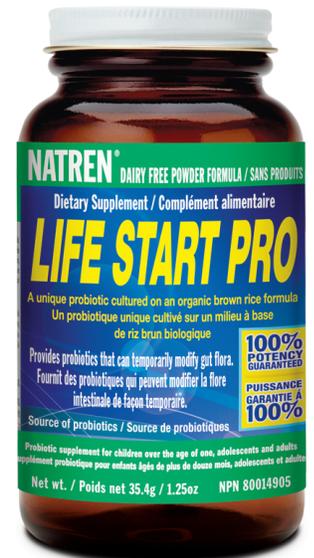
**No genetically modified organisms--Natren does not use ingredients produced by biotechnology

STORAGE AND HANDLING

Keep **refrigerated** and **dry** 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?

Infants are bathed in protective, beneficial microflora when they pass through their mother's birth canal. As a result, babies delivered vaginally are bathed with friendly, protective *Bifidobacteria*. In contrast, babies delivered by caesarian section (C-section) become bathed in the bacteria from their environment--most often, they're exposed to the bacteria on the skin of their mother and the bacteria in the hospital delivery room. When this occurs, babies lose out on the benefits that *B. infantis* supplies. They miss the natural boost to their innate defenses, and don't receive the digestive support for their inexperienced gastrointestinal tract--not the best start to lifelong health.



Breastfeeding by a healthy mother further enriches an infant's protective microflora and enhances an infant's growth and development. For example, 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, they form the predominant bacteria in the infant's large intestine along with other Bifidobacteria species such as *B. bifidum*, *B. longum*, and *B. breve*.

B. 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 rate 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* takes up approximately 75% of total bacteria. The representation of *Bifidobacterium* is less observed in formula-fed infants, who have a more diverse microbiota. The difference in bacterial colonization between breast-fed and formula-fed infants can be explained in great part by the non-essential components in human milk.

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} The difference of the microbiota of breast-fed healthy infants is demonstrated for its specific selection of *B. infantis* species and also to some extent *B. bifidum*. Basically, it appears that by 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

B. infantis CHARACTERISTICS

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

- Anaerobic bacteria (does not require oxygen for growth).
- 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}
- Optimum growth occurs at 37°-41° C (98-105° F).
- Prevent the colonization of the intestines by pathogens by competing for nutrient 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, convalescences or sudden weather changes, the levels of *Bifidobacteria* decline and lead to lower levels of digestive health. The use of a *Bifidobacterium infantis* NLS supplement 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