

NATREN • PHARMACEUTICAL GRADE QUALITY PROBIOTICS



HEALTHY TRINITY

WHY THIS IS THE MOST EFFECTIVE PROBIOTIC FOR YOU

Rejuvenate your digestive and overall health by balancing micro-flora in the GI tract – our second brain



UNIQUE & POWERFUL PROBIOTICS

866-4-NATREN
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THE HEALTHY TRINITY®

Natren has developed a unique and innovative micro-enrobing delivery system with three carefully selected super strains totaling 30 billion cfu:

- *Lactobacillus acidophilus* NAS super strain – 5 billion cfu
- *Bifidobacterium bifidum* Malyoth super strain – 20 billion cfu
- *Lactobacillus bulgaricus* LB-51 super strain – 5 billion cfu

Natren isolates the most effective combination of naturally selected super strains of *L. acidophilus* and *B. bifidum* bacteria to optimize the health of the small and large intestines, while the *L. bulgaricus* super strain assists in regulating the often-neglected transient flora. Each microorganism is FDA referenced as a GRAS (Generally Recognized As Safe) substance. These bacteria are incorporated in an oil matrix carrier and encapsulated in **HEALTHY TRINITY's** two-piece hard gel capsule, which helps maintain healthy intestinal flora, aids digestion and absorption. **HEALTHY TRINITY** is free from:



Gluten Free



Dairy Free



Soy Free



NO GMOs**



NO FOS

**Natren does not use and ingredients produced by biotechnology.

WHAT MAKES AN EFFECTIVE DELIVERY SYSTEM?

The HEALTHY TRINITY Capsule

The **HEALTHY TRINITY** capsule provides an exceptional delivery system and is an innovative technology on its own. The two-piece hard gelatin capsule is banded and sealed with gelatine; then each capsule is monitored individually, by eye, to ensure full containment of the oil matrix micro-enrobed probiotic formula. Gelatin was chosen because of its low-moisture content and the capsule color is all natural (because of this it may vary slightly batch to batch). We specifically designed the capsule to be dark in color to further protect the probiotic from damaging UV light. The capsules are 100% beef gelatin, and kosher certified.



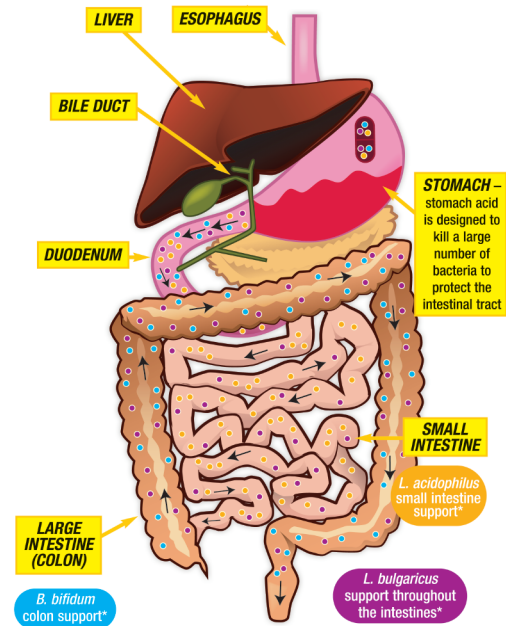
The Trenev Process®

The Trenev Process is a unique protective oil matrix delivery system only available from Natren technology. We believe there is no better protection for the probiotic bacteria to survive the harsh gastric environment and to successfully reach their destination in the upper small intestine. Large numbers of bacterial cells can die due to a lack of protection from stomach acids, making potency guarantees meaningless without an independent measurement of survivability. When selecting a probiotic it is important to think about these challenges and ask

What does 50 or 100 billion cfu mean if the probiotic product does NOT reach the intestines where it is most active?

questions. What does 50 or 100 billion cfu mean if the probiotic product does not reach the intestines where it is most active?

Natren's proprietary oil matrix delivery system micro-enrobes each strain of bacteria, this process arrests their growth, keeps the three strains separate and noncompetitive and ensures that beneficial **Natren strains are shielded from harsh and corrosive stomach acids, providing virtually 100% survivability for over one hour in a pH as low as 1.8.** This has been tested and validated by an independent third-party internationally acclaimed European institute. Natren's micro-enrobing delivery system consists of sunflower oil and vitamin E, with all oxygen and water removed by a gentle chemical-free process, creating a totally anaerobic (oxygen-free) environment.



Natren's oil matrix complex significantly improves the probiotic effect of **HEALTHY TRINITY** because oil is not broken down by gastric juices; it is emulsified by bile, which is secreted by the bile duct located just above the intestines. It is important to note that Natren super strains show excellent bile tolerance, as evidenced by continuous in vitro studies conducted by Silliker Laboratories in southern California. (1) The probiotic will remain potent through the acidic stomach barrier, to flourish in the small and large intestines where they provide optimal benefit. The potency of **HEALTHY TRINITY** is improved substantially by (1) ensuring we start with high-quality and well tested cells; (2) do not stress the cells by exposing them to competing bacteria and enrobe each strain individually from one another; (3) protect the probiotic cells through an exceptional, tested and proven delivery system. This technology cannot be obtained from any other manufacturer in the world.

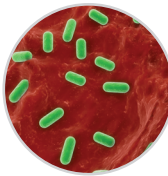
THE HEALTHY TRINITY SUPER STRAINS

What is a super strain?

A super strain is just as it sounds; a strain that is of higher quality or superior in action to other bacterial strains. Natren super strains are of high quality, efficacy and have been verified by clinical trials, and backed by decades of safety and efficacy records. Below, we will look at each strain in The **HEALTHY TRINITY** in detail.

What makes the NAS super strain unique?

HEALTHY TRINITY oil matrix capsules contain *L. acidophilus*, NAS adhesion strain, a gram-positive facultative anaerobic rod. This is an organism normally found in the major part of the small intestine beyond the duodenum.



An *L. acidophilus* strain that adheres to the intestinal wall, known as a “sticker” is superior to *L. acidophilus* strains that do not express this feature. It has a polysaccharide cell wall surface (similar to the Velcro® phenomenon) that facilitates better adhesion. For the host to benefit from the consumption of *L. acidophilus*, the strain should be able to adhere and grow in the dynamic environment of the gastrointestinal tract. Typically, calcium found in milk provides natural adhesion to the intestinal wall, however, **HEALTHY TRINITY** is dairy free and adherence can be a challenge for dairy free probiotics products, which do not have natural calcium ions.⁽²⁾ Natren’s dairy free NAS strain maintains this adherence feature without the milk base which is one reason it is distinguished as a super strain.⁽³⁾

How does NAS super strain help?

In vitro studies have demonstrated the following characteristics of certain strains of *L. acidophilus*, including NAS:

- Helps destroy invading hostile bacteria by producing natural antibiotic substances.^{(4) (5) (6) (7) (8) (9)}
- Produces hydrogen peroxide (H₂O₂) found necessary to inhibit vaginal yeast.^{(10) (11)}
- As an antimicrobial, may suppress undesirable microorganisms in the intestines, by some competitive means, e.g., production of lactic acid and other inhibitory substances.^{(4) (5) (6) (7) (8) (9) (12) (13) (14) (15) (16) (17) (18) (19)}
- May help reduce levels of potentially harmful bacterial enzyme activities in the large intestine.^{(12) (13) (15) (16) (17) (18) (19) (20) (21) (22)}
- Helps lessen the production of hostile yeasts.^{(5) (10) (11) (23)}
- Helps maintain and support a healthy immune system.^{(24) (25) (26)}
- Produces the enzyme lactase, responsible for digestion of milk sugar, lactose.^{(27) (28) (29) (30) (31) (32) (33) (34)}
- May help maintain normal healthy cholesterol levels.^{(35) (36) (37) (38) (39) (40) (41) (42) (43)}

In vitro studies have demonstrated that *L. acidophilus*, has distinct antimicrobial and antifungal activity against potentially pathogenic organisms, including *Clostridium difficile*, *Candida albicans*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Staphylococcus aureus* and *Helicobacter pylori*.^{(12) (13) (14) (15) (16) (17) (5) (28) (23) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53)}

An additional in vitro study showed, *L. acidophilus*, NAS strain exhibited antimicrobial activity against *H. pylori*.⁽⁴⁸⁾

The NAS super strain also has proven ability to secrete a diverse array

of bacteriocins.⁽⁵⁴⁾ Bacteriocins are a group of peptides or proteins that have natural antimicrobial activity, thereby eliciting additional probiotic benefits.⁽⁵⁴⁾

What makes the Malyoth super strain unique?

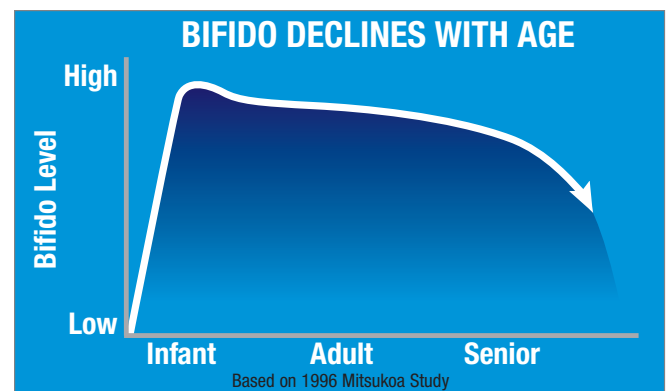
HEALTHY TRINITY oil matrix capsules contain *B. bifidum*, Malyoth super strain, a gram-positive obligate anaerobic branch shaped rod. This is an organism normally found in the large intestine.

Bifidobacterium species, such as *bifidum*, not only need to be human host specific, but also infant or adult specific. Biovar is the classification used to denote whether a species is adult or infant specific; for example, biovar a (adult) or biovar b (baby). For optimal benefit, the appropriate biovar of *bifidobacteria* should be administered. The Malyoth super strain of *B. bifidum* — biovar a is an appropriate supplement for adults and for children who have been weaned from breast milk. This strain has been used successfully in liver detoxification studies.^{(55) (56) (57)}

How does Malyoth super strain help?

Bifidobacterium bifidum possesses the following positive characteristics:

- Helps in the production of B vitamins in the gastrointestinal (GI) tract.^{(55) (58) (59) (60)}
- By producing acetic acid and lactic acids, it lowers the pH of the intestines thus inhibiting undesirable bacteria, acting as an antimicrobial agent.^{(55) (58)}
- Helps to inhibit the colonization of the intestines by invading pathogens with which it competes for nutrients and attachment sites.^{(55) (58) (61)}
- Helps in liver function and detoxification.^{(55) (57) (56)}



Aging lowers gastric acidity and allows more competitive microorganisms to reach the large intestine, resulting in a loss of valuable *bifidobacteria*. The spaces left vacant on the wall of the large intestine by the lack of *bifidobacteria* are gradually taken over by undesirable bacteria. Noxious bacteria form substances that cause putrefaction and contribute to intestinal problems.

HEALTHY TRINITY capsules are commonly used as a nutritional adjunct to replenish normally occurring beneficial organisms in the gastrointestinal tract. This is vital, particularly during and following antibiotics, corticosteroids (cortisone), chemotherapy, diarrhea, and chronic yeast or bacterial overgrowth. Ongoing stress also negatively alters the delicate balance of beneficial bacteria. In fact, Japanese research indicates that *Bifidobacterium* is the most important beneficial bacteria for human health.⁽⁶³⁾

In vitro studies have demonstrated the following effects of *Bifidobacteria bifidum*:

- Produces strong organic acids (lactic, formic, acetic) that inhibit the growth of undesirable microorganisms. ^{(55) (58) (60)}
- May suppress harmful bacteria that may ultimately lead to aging and geriatric diseases. ^{(55) (58) (61) (62)}
- Lower the fecal pH, which in turn decreases ammonia and frees phenols in the blood. ^{(55) (58) (56) (57)} Ammonia and phenols in the blood are markers for liver disease.

What makes the LB-51 super strain unique?

The third strain in the **HEALTHY TRINITY** oil matrix capsule is *L. bulgaricus*, LB-51 super strain. *L. bulgaricus*, LB-51 is a facultative anaerobic gram-positive rod. This is an organism that can be found throughout the digestive system; it progresses through the intestines as food is digested. It may take up to two weeks to pass through the digestive tract; along the way, *L. bulgaricus* naturally aids digestion and helps contain unfriendly organisms. *L. bulgaricus*, LB-51 super strain has been studied in Bulgaria for more than 30 years by leading scientists. Its unique properties are well documented.

Lactobacillus bulgaricus has recently been renamed *L. delbrueckii* subspecies *bulgaricus*.

How does LB-51 super strain help?

In vitro studies have demonstrated benefits of certain strains of *L. bulgaricus*:

- May help to promote regularity by stimulating peristaltic action. It may help alleviate the need for laxatives and help maintain the natural electrolyte balance, particularly with aging and a less active lifestyle. ^{(64) (65)}
- Produces lactase, which aids in the natural digestion of lactose (milk sugar) and may be effective with lactose intolerance. Yogurt contains *L. bulgaricus*, which provides 30 times the lactase activity of sweet acidophilus milk. ^{(27) (66) (31) (67) (68)}
- Helps the body digest carbohydrates, producing lactic acid, which creates a hostile environment for harmful bacteria. Lactic acid may also improve the digestibility of casein (a milk protein). ^{(69) (70) (4) (71) (72)}
- Naturally helps in the digestion of protein. Mild proteolytic activity of these bacteria may aid the digestion of nutrients, particularly milk protein. The protein in yogurt, which has been cultured by *L. bulgaricus*, becomes twice as digestible as regular milk protein. It has been shown to help produce small peptides and free-form amino acids which are readily absorbed by the body. The production of free-form amino acids also assists mineral absorption. ^{(70) (50) (72)}
- The lactic acid produced by *L. bulgaricus* may increase the bioavailability of minerals, especially calcium. The absorption is doubly important in lactose-intolerant individuals who may experience a deficiency of dietary calcium. ^{(70) (73) (27) (50) (74) (72)}
- Helps discourage undesirable microorganisms in other ways. In large numbers, it will out-compete hostile microorganisms searching for nutrients. ^{(75) (76)}
- Through its production of hydrogen peroxide, and of lactic acid, creating a more acidic environment, *L. bulgaricus*, LB-51 also acts as an antimicrobial, which is inhibitory to many undesirable microorganisms and yeasts. ^{(77) (4) (71)}
- *L. delbrueckii* subsp. *bulgaricus*, LB-51 super strain exhibited antimicrobial activity against *H. pylori*. ⁽⁴⁸⁾

WHY ONLY THREE STRAINS

Probiotic bacteria do not "play nice" together.

Symbiosis is not common to bacteria. Antagonism is more common. ⁽⁷⁸⁾ Strains that are mixed together fight for survival and may inhibit one another and decrease each other's growth, thereby decreasing health benefits. Blends of probiotics should be made so that each strain of probiotic is kept separate from one another.

World Renowned Probiotic Expert, Professor Gregor Reid agrees with Natren's long standing premise that multi-strain probiotics may not necessarily be better than products containing one, two or three strains.

That's why Natren mixes a maximum of only three organisms, and uses their own unique and scientifically tested technology to micro-enrobe each organism in a protective oil matrix delivery system to keep each strain separate and non-competitive. World Renowned Probiotic Expert, Professor Gregor Reid agrees with Natren's long standing premise that multi-strain probiotics may not necessarily be better than products containing one, two or three strains. Professor Reid commented that little is known about the way different species of bacteria interact because some strains inhibit the activity of others when placed together. ⁽⁷⁹⁾ He stated that "The tendency is 'let's have 15 strains...let's have 28 billion', 'you've got to know what they're doing. Are they really having an impact?' ⁽⁷⁹⁾ He questions, "... what is the point of putting them in the same container if they [different strains] inhibit each another?" ⁽⁷⁹⁾ Professor Reid is one of the leading experts in the field of probiotics. He is a Professor at the University of Western Ontario, but more impressively he has been the chairperson of the United Nations World Health Organization Expert Panel and Working Group on Probiotics.

UNSTUDIED PROBIOTIC BACTERIA MAY HAVE LITTLE OR NO VALUE

There is no agency checking the validity of these probiotic strains and assuring that they're of any value or worse yet, not causing any harm. For example, years ago multi-strain producers were including an organism called *Enterococcus faecium* in their products because it was hardy and resistant to heat and other damaging affects that normal probiotics are susceptible to.

Years later, it was discovered that *Enterococcus faecium* may induce antibiotic resistance in other bacteria and it was eventually removed from these probiotic products due to this potential danger. ⁽⁸⁰⁾

Not all strains provide health benefits. This is why you must rely on a reputable probiotics manufacturer to research and formulate its probiotics with the best and most beneficial bacteria available.

Natren has always used the core, scientifically proven safe, and effective bacterial strains such as *Lactobacillus acidophilus*, NAS,

Bifidobacterium bifidum, Mayloth and *Lactobacillus delbrueckii* subspecies *bulgaricus* LB-51.

Not all strains provide health benefits. This is why you must rely on a reputable probiotics manufacturer to research and formulate its probiotics with the best and most beneficial bacteria available.



THE GLOBAL INSTITUTE OF PROBIOTICS
a non-profit organization

Clinical Studies

Natren has completed several clinical trials and continues to explore future trials. Completed trials pertaining to **HEALTHY TRINITY** or its individual probiotic strains are outlined below:

- Yale University School of Nursing in 2001 studied the weekly administration of *L. acidophilus*, NAS super strain intravaginal suppository, the results showed 50% reduced relative risk of an episode of vaginal candidiasis in HIV-infected women. ⁽⁸¹⁾

-University of California, Davis, in a double blind, crossover clinical trial completed in 2003 found a significant reduction in yeast infections among college women who followed daily administration of *L. acidophilus*, NAS intravaginal suppository in combination with the **HEALTHY TRINITY** oral capsule. ⁽⁸²⁾

-*Lactobacillus bulgaricus*, LB-51 super strain was included in a Proof of Concept study in 2011 showing reduced hunger between meals in people taking this probiotic. ⁽⁸³⁾ Expansion into a larger clinical trial is planned.

-The University of Alberta, Edmonton in Canada completed a randomized clinical trial in 2013 that showed **HEALTHY TRINITY** helped reduce the mean lesion count of women affected with acne in an otherwise healthy population. ⁽⁸⁴⁾

-Natren has also completed numerous in vitro studies and additional Clinical Trials relevant to other probiotics they produce.

TRUSTED EXPERTS IN THE PROBIOTIC FIELD

The probiotic specialist recognized worldwide®

Natren's superior supplements consistently lead the field of probiotics with recognized pharmaceutical grade quality, in several ways:

(1) Tested Super Strains

Thorough and diligent selection of tested and naturally occurring super strains, with no artificial genetic manipulation. Natren does not use any ingredients produced by biotechnology.

For example, there are many different strains of *L. acidophilus*, each with varying strengths and each providing different probiotic benefits. Natren's *L. acidophilus*, NAS strain has been carefully selected for its numerous beneficial properties.

(2) Specialized Packaging

The number one enemy of probiotics is moisture. Plastic is not a sufficient barrier to moisture. Light and heat are also harmful to probiotics. Therefore, Natren probiotics are packaged in naturally dark capsules



placed into dark glass bottles with metal caps providing the ultimate protection against moisture and heat. Natren also manufactures in a temperature controlled environment and the probiotics are stored refrigerated and always shipped in thermally controlled boxes.

(3) Oil Matrix Process

Natren created an exclusive oil matrix delivery system to keep each bacterial strain separate and noncompetitive. Not only does this system maximize survival under the recommended shelf life conditions, it also protects the probiotics as they travel through the digestive system. The oil matrix protects bacteria as they travel through the stomach and is emulsified by bile in the upper GI tract where the (bile tolerant) bacteria are released to begin colonization and growth.

Each strain has been tested for bile tolerance by Silliker Laboratories. The laboratories' Technical Director of Microbiology, Western Region, has stated that no further bile tolerance tests need to be run, as Natren strains have "demonstrated (bile tolerance) repeatedly on sequential lots for a period exceeding two years, both on MRS and Rogosa agar containing 0.1 5% oxgall." ⁽¹⁾

(4) Guaranteed Potency

Natren takes pride in its accomplishments over the last 30 years to identify the most effective probiotic species and strains. The company is able to offer an unconditional guarantee of potency for each listed strain through the printed expiration date on its probiotic product labels, **NOT** the date of manufacture as stated on other probiotic brand labels.

Directions for use

For adults and children over 8 years of age. Take 1 or more capsules daily. **HEALTHY TRINITY** oil matrix capsules are formulated to be taken with meals to enhance digestion but may be taken at any time.

Note: **HEALTHY TRINITY** capsule size (00) may not be suitable for young children, although contents of capsule are nontoxic and safe for children. Those who have difficulty swallowing capsules, such as young children, may find Natren's powdered probiotic formulas more suitable.

Storage

Store at 2°C to 8°C. Keep refrigerated (do not freeze) to maintain guaranteed potency. Do not expose to moisture, heat or direct sunlight.



Potency guarantee

Each capsule is guaranteed to supply a minimum of:

- 5 billion cfu *L. acidophilus*, NAS
- 20 billion cfu *B. bifidum*, Malyoth
- 5 billion cfu *L. delbrueckii* subspecies *bulgaricus*, LB-51

through the printed expiration date when recommended storage conditions are maintained.

NATREN
INC.

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