

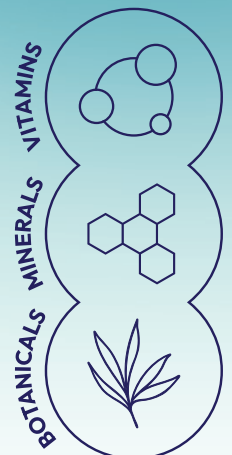
Evera[®]

NUTRITION

Your Health Redefined



**GUT
BIOTIC**



The human gut microbiome, a complex assemblage of trillions of microbes, has been recognised as a vital contributor to maintaining overall health and well-being.

**The Evera Nutrition
Consumer Promise
Pyramid**



Delivering innovation in supplementation

The gut response is crucial in maintaining optimal digestive function, regulating the immunological response, and impacting mental well-being. Maintaining a delicate equilibrium in this microbial ecosystem is essential to ensure good physiological functioning. The disruption of the gut microbiome has been associated with the emergence of many metabolic illnesses, highlighting the necessity for efficient approaches to foster and sustain this fragile microbial ecosystem.

Benefits of a Healthy Gut Microbiome

A healthy microbiome offers numerous benefits including supporting the immune system, aiding digestion, producing essential vitamins, and potentially influencing mental well-being. Maintaining a balanced microbiome can also protect against infections and may reduce the risk of various diseases (1).

It delivers the following benefits:

- **Physical Barrier:** The sheer number and diversity of bacteria in a healthy gut microbiota create a competitive environment, making it difficult for harmful bacteria to colonise and cause infection. They occupy binding sites on the intestinal cells, preventing pathogens from attaching and invading (2).
- **Antimicrobial Substances:** Many beneficial bacteria produce substances like bacteriocins and other antimicrobial peptides that inhibit the growth of, or kill, harmful bacteria (3).
- **Mucus Layer Maintenance:** The production and composition of the mucus layer that coats the intestinal lining is influenced by the gut flora (4). A healthy mucus layer acts as a protective barrier, preventing pathogens from reaching the epithelial cells and maintaining the integrity of the gut wall.
- **Immune System Modulation:** The gut microbiota plays a crucial role in educating and regulating the immune system (5). It helps to train the immune cells to distinguish between beneficial and harmful bacteria, promoting a balanced immune response. This prevents excessive inflammation and immune-mediated damage to the gut wall.
- **Metabolite Production:** The gut microbiota produces various metabolites which have been shown to have beneficial effects on gut health (6). These metabolites can promote the production of protective proteins in the gut lining and reduce inflammation.
- **Tight Junction Maintenance:** The gut microbiota can influence the expression and function of proteins that form tight junctions between intestinal cells, which are crucial for maintaining the barrier function of the gut (7).
- **Repair Mechanisms:** In cases of injury or inflammation, the gut microbiota can participate in the repair process by influencing the immune response and promoting the regeneration of the gut lining (8).
- **Digestive Health:** Beneficial bacteria help break down food, particularly fibre, which the body cannot digest on its own (9).

- **Mental Well-being:** Emerging research suggests a connection between the gut and the brain (the gut-brain axis). A balanced microbiome may positively influence mood, potentially protecting against conditions like anxiety and depression (10).
- **Disease Prevention:** An imbalanced gut microbiome has been linked to various health issues. Maintaining a diverse and balanced microbiome may reduce the risk of these conditions (11).
- **Nutrient Metabolism:** Gut bacteria can produce essential nutrients like vitamins and short-chain fatty acids (SCFAs), which have various health benefits. They also produce enzymes that aid in nutrient absorption and synthesise essential vitamins like B vitamins and vitamin K (12).
- **Potential Impact on the human microbiome:** A balanced gut microbiome can contribute to healthy skin, oral and sexual hygiene (13).

Combined Pre, Pro, and Post Biotics

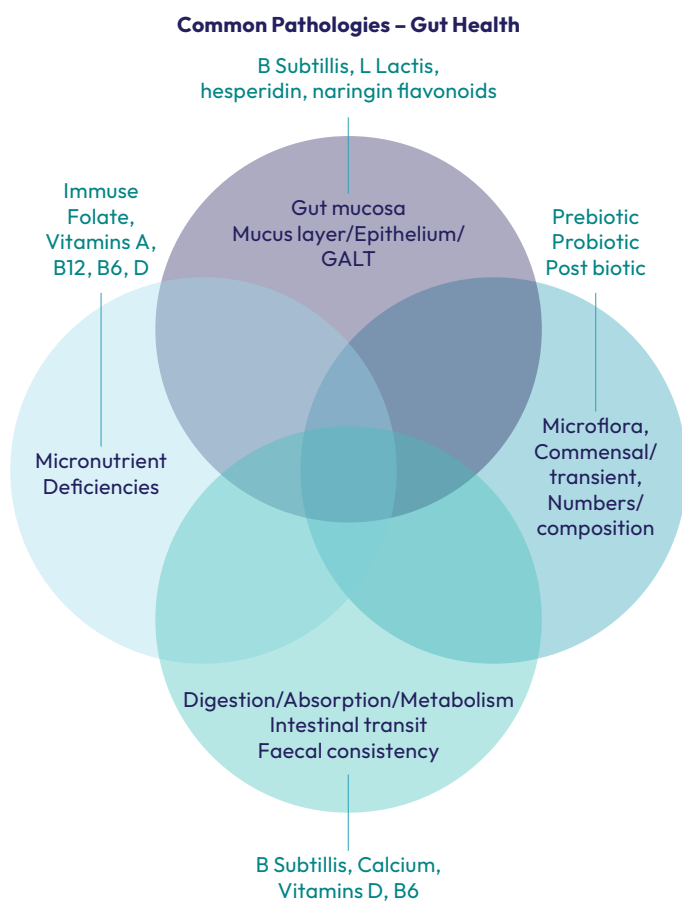
Combining prebiotics, probiotics, and postbiotics, often referred to as a “synbiotic approach,” can significantly enhance gut health and overall well-being. Prebiotics nourish beneficial gut bacteria, probiotics introduce live microorganisms that further improve gut health, and postbiotics are the beneficial byproducts of probiotic activity (14). Together they create a synergistic effect.

How Evera Nutrition Gut Biotic Supports a Healthy Gut Flora

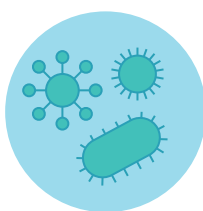
At Evera Nutrition we realise that the issues which might impact upon a healthy gut flora are complex and vary from individual to individual. Our team of scientists has reviewed the scientific literature to identify the most common causes and created a formulation that uses specific ingredients that work together synergistically to address the most likely causes and deliver efficacy in the most natural way.

Ingredient	Amount per 2 capsule serving	% NRV*
Vitamin A	800mcg RE	100
Vitamin D3	5mcg	100
Vitamin B1 (Thiamine)	1.1mg	100
Vitamin B6 (Pyridoxal-5-phosphate)	1.4mg	100
Folic Acid (5-methyltetrahydrofolate)	200mcg	100
Vitamin B12 (methylcobalamin)	2.5mcg	100
Selenium	55mcg	100
Calcium	120mg	15
Silica	20mg	**
MicrobiomeX® (standardised extracts of Hesperidin and Naringin)	250mg	**
Bacillus subtilis	10bn cfu	**
IMMUSE® Lactococcus lactis strain Plasma	36mg 100bn cells	**

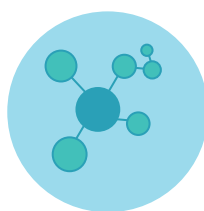
Evera Nutrition Gut Biotic Addresses the Most Frequent Common Issues Affecting a Healthy Gut Microbiome



Prebiotics
Nondigestible fibre that feeds the beneficial microorganisms (probiotics) in the gut



Probiotics
Living microorganisms that confer a benefit to the host



Postbiotics
Bioactive compounds that are created during digestion when the bacteria in the gut break down prebiotic fibres

Ingestion of indigestible dietary fibre



Fermentation by bacteria in the gut



Production of short-chain fatty acids

Microbiomex®: A Flavonoid Complex Prebiotic

Flavonoids are a group of phytonutrients (plant chemicals) that give colour to fruits and vegetables, but are also found in cacao, coffee and tea. Flavonoids have a wide range of beneficial effects, such as reducing chronic inflammation, and reducing risks associated with certain diseases (15). In this way flavonoids may improve intestinal barrier function via inhibition of inflammatory proteins such as nuclear factor-kappa B (NF-κB), and via reduction of oxidative stress (16).

Flavonoids also contribute to the preservation of the intestinal tight junction barrier and structure, which is important for remaining the physical barrier for pathogens (17). Additionally, it is found that flavonoids can increase short-chain fatty acids (SCFAs) production in the gut. SCFAs have different beneficial effects on the host and gut health which includes serving as energetic fuel for intestinal epithelial cells, and improving intestinal barrier function (18). An important SCFA for gut health is butyrate (19). It can bind to G-protein-coupled receptors. Upon binding, different anti-inflammatory signalling pathways can be promoted in macrophages and dendritic cells, which are important in the immune system of the colon (20).

Hesperidin and naringin are flavanones, a subclass of flavonoids. After oral consumption, hesperidin and naringin reach the colon almost completely intact, because they are difficult to degrade by the enzymes in the stomach and the small intestine (21). This means the gut microbiota can digest them and convert hesperidin and naringin to hesperetin and naringenin. Hesperetin and naringenin, along with other metabolites, can selectively promote the growth of specific beneficial bacteria like *Bifidobacterium bifidum* and *Lactobacillus* (22).

It has been shown that naringin can reduce microbial dysbiosis caused by a high fat diet (23). This means that harmful bacteria were reduced and there was an increase in beneficial bacteria. Hesperidin and naringin also play a role in immune system regulation (24). They can inhibit gut inflammation and oxidative stress by increasing antioxidant levels. By bringing gut inflammation down, the gut barrier stays intact as a physical defence against pathogens.

MicrobiomeX® has been shown to increase butyrate-producing bacteria. As mentioned before, butyrate is an important SCFA for gut health. It has also been found that by consuming MicrobiomeX® the levels of calprotectin (a protein primarily found in white blood cells) went down, which could indicate that MicrobiomeX® helps to bring gut inflammation down (25). MicrobiomeX® won the prestigious Nutraingredients Europe Award in 2024.

Bacillus Subtilis Probiotics

Bacillus subtilis is considered an effective probiotic due to its ability to produce antimicrobial substances, enhance gut barrier function, and stimulate the immune system (26). Studies have shown it can improve gastrointestinal health, reduce symptoms of digestive

issues such as constipation and indigestion, and potentially even help modulate the gut microbiome (27).

Antimicrobial Activity: *Bacillus subtilis* produces various antimicrobial substances, like ampicoumacins, that can inhibit the growth of harmful bacteria in the gut (28). This helps maintain a balanced gut microbiome, reducing the risk of infections and promoting overall gut health.

Gut Barrier Function: *Bacillus subtilis* can strengthen the intestinal barrier, which is crucial for preventing harmful substances from entering the bloodstream (29). By enhancing this barrier, it can reduce inflammation and improve nutrient absorption.

Immune System Stimulation: *Bacillus subtilis* has been shown to stimulate the immune system, particularly by increasing the production of secretory immunoglobulin A (SIgA) in the gut and saliva (30). SIgA plays a vital role in mucosal immunity, helping to protect against pathogens and maintain gut health.

Maintenance of intestinal homeostasis and prevention of intestinal inflammation: *B. subtilis* derived factors activate key survival pathways in intestinal epithelial cells of the host, which protect intestinal epithelial cells against injury and loss of barrier function and hence provide the ability to maintain intestinal homeostasis (31).

Protection against pathogens: *B. subtilis* has a positive effect on the maintenance of the normal intestinal flora (32). This has been demonstrated in many studies which showed efficacy against pathogenic cultures of *E. coli* and *Campylobacter* species during treatment of experimental infections and maintenance of normal microflora during the receipt of antibiotic therapy (33). This wide spectrum of antagonistic activity toward the tested pathogens did not inhibit normal microflora (34). *B. subtilis* also significantly increased lactobacilli counts, reduced *E. coli* counts, and improved the growth performance and GI health.

Survival in the gastrointestinal tract: A randomized, double-blind, placebo-controlled trial in healthy adults showed *B. subtilis* survives passage through the human GI tract and is safe and well tolerated in healthy adults (35).

Clinical Evidence: Studies have demonstrated that *Bacillus subtilis* supplementation can alleviate gastrointestinal symptoms like gas, bloating, and constipation (36). Some research indicates it can also improve stool quality and frequency (37). It has been shown to be effective in preventing diarrhoea (38). Further, it has been shown to have a positive impact on the gut microbiome, increasing beneficial bacteria and potentially impacting the host's overall health (39). It has been used in the improvement of symptoms associated with chronic diarrhoea and irritable bowel syndrome, as a co-adjuvant therapy to improve remission times in mild to moderate ulcerative colitis and to improve compliance with conventional triple therapy for *Helicobacter pylori* eradication (40). There have been 23 clinical trials involving over 1800 patients for probiotic preparations containing a combination of *B. subtilis* and other probiotics (41).

Immuse®-Lactococcus Lactis Strain Postbiotic

Postbiotics are inactivated (non-viable) probiotics with health benefits similar to those of live probiotics (42). Postbiotics also provide the added advantage that they have a longer shelf-life and play a vital role in improving immune health by supporting immune-modulation benefits (43). Immuse®, a patented postbiotic, is a heat-killed *Lactococcus lactis* strain plasma that has been shown to provide immune support at a cellular level (44). Unlike most of the immune cells, plasmacytoid dendritic cells (pDCs) straddle between innate and adaptive immune systems, playing a pivotal role within the immune system. pDC have been described as key supporters of the immune system since they activate essential immune cells and provide more comprehensive immune support (45).

Immuse® LC-Plasma is the first lactic acid bacteria that has been clinically researched to directly activate pDCs, a rare subset of immune cells, to provide comprehensive innate and adaptive immune support. Immuse® is supported by 30 studies including 15 human clinical trials (46). These studies show that Immuse®:

- Safely stimulates the body's natural defences
- Provides immune support at the cellular level
- Promotes year-round health
- Supports respiratory health
- Provides immune support for high intensity exercise
- Supports immune resiliency during training.

Immuse® won the prestigious Nutraingredients Europe Award in 2024.

Other Essential Nutrients:

- Calcium plays a crucial role in supporting digestive enzyme function (47). Calcium also supports muscle function and nerve transmission, which are important for the coordinated movements of the digestive tract (48).
- Vitamins A, B6, B12, D3, folic acid and selenium contribute to the normal function of the immune system (49)
- Vitamins B1, B2, B3, B5, B12 and biotin contribute to normal energy-yielding metabolism (50)
- Vitamin B6 contributes to the regulation of hormonal activity (51)

Why recommend Gut Biotic?

- A unique pre,pro, and postbiotic with 110 billion cell bacterial activity to maintain a healthy microbiome
- Contains two prestigious international award-winning ingredients: Microbiomex® and Immuse®
- No refrigeration required
- Synergistic micronutrients help to boost energy, regulate hormonal activity and support immunity
- All ingredients are supported by human clinical studies

(References available upon request)

Evera[®]

NUTRITION

Your Health Redefined



everanutrition.com



info@everanutrition.com