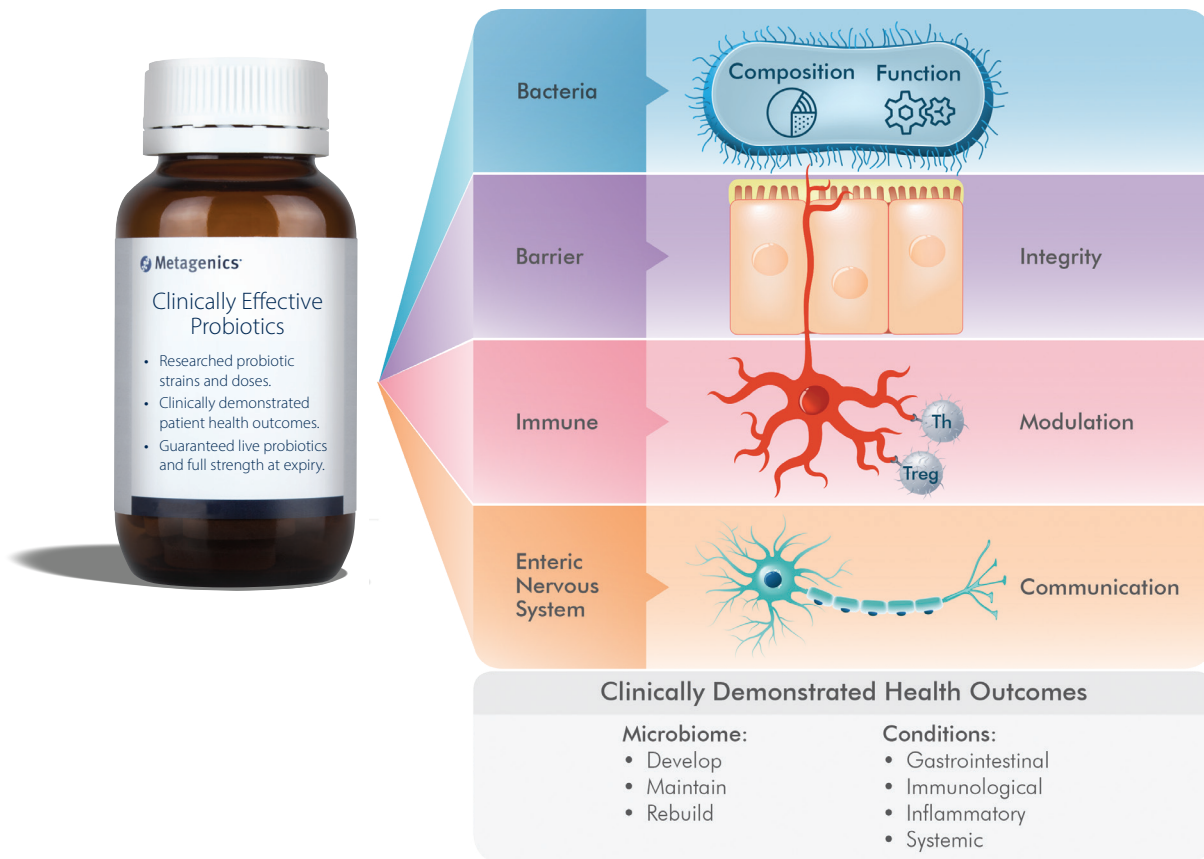


Probiotics and Prebiotics

Scientifically researched probiotics with clinically demonstrated health outcomes.



Supporting Practitioners to be at the Forefront of Probiotic Science

The Human Microbiome

The gastrointestinal tract (GIT) is host to a plethora of microorganisms composed of bacteria, archaea, viruses and eukaryotic microbes, collectively known as the gut microbiome. Humans exist in a symbiotic relationship with their bacterial ecosystem, and the bidirectional nature of this relationship makes individual health inseparable from that of the microbiome and vice versa. The benefits of a healthy microbiome extend beyond the gut and have significant systemic impacts, affecting nutrient metabolism, body composition, cardiovascular health, immunity and neuroendocrine function.

The Microbiome Evolution

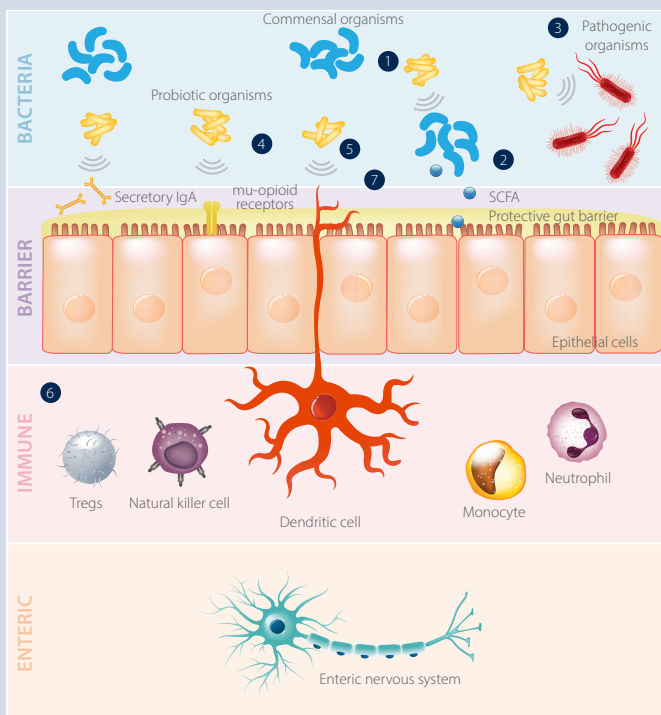
Recent estimates suggest 38 trillion bacteria cohabit with the human host (also called 'commensals'); the majority of which exist in the GIT. Over 1000 species and many thousands of genetically unique strains have been identified, contributing to a broad and diverse microbiome. It is postulated that healthy individuals typically host appreciable levels of certain 'core' bacterial genera; *Faecalibacterium*, *Eubacterium*, *Clostridium*, *Blautia*, *Ruminococcus* and *Roseburia*. Additionally, healthy individuals tend to have higher levels of bacterial diversity. As such, it may seem logical to think that prescribing more probiotic species is better, however this is not the case.

Clinically Effective Probiotics

As probiotic research is evolving, so too is the understanding of their specific functions and the profound impact they have on health. Historically, probiotics were thought to replenish or 'seed' commensal bacteria. This, now outdated, understanding suggested that by supplying commensal-like bacterial species, they would take up residence within the gut, where they could proliferate and restore balance to a dysfunctional microbiome by sheer weight of numbers. It is now known this is not how probiotics work. Instead, positive results are gained by introducing particular influential probiotic strains that are able to restore each patient's unique microbiome by promoting the growth of key commensal groups, but also by improving overall GIT function – not by simply 'adding to the masses'.

Recent research confirms that probiotic function changes not only from species to species, but also at a subspecies and strain level, highlighting the importance of prescribing only specific strains that have been genetically characterised with proven therapeutic benefits. While condition specific probiotics are appropriate for many patients for microbiome restoration, or to target particular health conditions, all patients may benefit from taking probiotics for microbiome maintenance, and to support their everyday health.

Figure 1: A Healthy Functioning Microbiome



1. *Lactobacillus rhamnosus* (LGG®) and *Bifidobacterium animalis ssp lactis* (BB-12®) help to increase growth of the dominant bacterial families, genera, species and strains.⁴
2. LGG® modulates the quantity, diversity (composition) and function of other bacteria and commensal organisms,⁵ producing short-chain fatty acids (such as butyrate), which helps restore a healthy epithelial barrier and tight junction integrity.
3. *Saccharomyces cerevisiae* (boulardii) (SB) is a beneficial yeast that is able to displace pathogens and reduce antibiotic-associated loss of bacteria by rapidly restoring core bacteria.^{6,7} BB-12® prevents the growth of pathogenic organisms by secreting antimicrobial peptides to prevent pathogen adhesion.⁸
4. Bind to mu-opioid gut receptors, such as *Lactobacillus acidophilus* (NCFM®) to reduce gut discomfort.⁹
5. Exerting a binding action to immune receptors i.e. *Lactobacillus plantarum* (HEAL9), *Lactobacillus paracasei* (8700:2), *Lactobacillus rhamnosus* (HN001™)^{10,11,12,13,14}
6. Influencing inflammatory markers via T regulatory cells (Tregs) (LGG®, *Lactobacillus paracasei* - LP-33®).^{15,16,17}
7. NCFM® interacts with dendritic cells, which help to modulate the immune response.

NCFM® is a registered trademark of DuPont. LGG® is registered trademark of Chr. Hansen A/S.

Metagenics Delivering Industry Leading High Quality Probiotics Standards

- ✓ Strain expertise – researched probiotic strains and doses.
- ✓ Efficacious – clinically demonstrated patient health outcomes.
- ✓ Manufactured by Metagenics, ensuring high quality probiotics, live and full strength at expiry.

Metagenics is proud to have been leading the probiotics industry for over 30 years, 'helping people live happier, healthier lives'. We have successfully paved the way in raising the profile of probiotics to drive patients to seek Practitioner only support and products.

As a result of increased patient demand for probiotics, the convenience of shelf stability has never been more important. For this reason, Metagenics has introduced Activ-Vial™ technology, supporting patient compliance, without compromising on quality.

Activ-Vial™ - Advanced Fridge Free Technology

As probiotics and manufacturing capability continues to evolve, more patients prefer the convenience of shelf storage while not compromising on probiotic quality. After comprehensive research and testing, Metagenics have adopted the latest in shelf-stable technology that has been demonstrated to protect probiotic strains, meeting Metagenics high quality probiotic standards.

Activ-Vial™ is a specialised type of packaging that has an in-built desiccant sleeve consisting of moisture absorbing polymers within the bottle wall, for maximum surface area to ensure the probiotic strains are kept full strength, live and effective throughout the duration of use, until expiry. Probiotics in the Activ-Vial™ bottle are protected by this moisture defence system when kept below 25°C so you can trust you are dispensing a high quality, full strength and stable probiotic while providing your patient with the convenience of room temperature storage.

ACTIV-VIAL™ BOTTLE

Insulated double wall with active inner core of moisture absorbing polymers to:

- ✓ Trap moisture
- ✓ Reduce light
- ✓ Insulate the probiotic

Protection remains active for the life of the product even after the bottle is opened.

Capsules see virtually no moisture because moisture is trapped before entering head space.



*The Activ-Vial™ bottle is a category 5 hard plastic. Kerbside recycling of this plastic in New Zealand may vary depending on the local council.

Our probiotics undergo comprehensive specialised processes, from raw material to finished probiotic product, to ensure you are prescribing probiotics that are stable, safe, dose-specific and 100% clinically researched (see Figure 2 on page 4).

Figure 2: Specialised Probiotic Processes – From Raw Material to Finished Product



1. FORMULATION

- ✓ 30+ Regulatory, Research and Scientific personnel analysing ingredients and formulation
- ✓ 100% researched strains and strengths
- ✓ Stable, therapeutic products

TESTING INCOMING RAW MATERIAL TO SUBSTANTIATE SUPPLIER CERTIFICATE OF ANALYSIS



2. INGREDIENT CHARACTERISTICS

- ✓ Optimised fermentation methods to foster core bacterial characteristics
- ✓ Raw materials undergo freeze drying to maintain ingredient integrity and stability
- ✓ Raw materials are transported to Metagenics in strictly monitored temperature controlled conditions

Authentic LGG®

LGG® requires specific manufacturing and growth medium conditions required for correct genetic expression and survival of pili and adherence to the gastrointestinal tract. Comparative analysis of GG products (against LGG®) found an absence of major DNA segments with pili encoding genes among these.



TESTING RAW MATERIAL TO CONFIRM STABILITY AND SPECIES IDENTIFICATION



3. MANUFACTURING AND MICROLABORATORY



- ✓ Metagenics purpose-built, climate-controlled facilities, maintain stable conditions to protect probiotics against changes in temperature and humidity
- ✓ Finished product testing undertaken to confirm shelf-life, survival and metabolic activity



106 tests and additional checks from raw material to finished product.

QUALITY TESTING EVERY 30 MINUTES DURING ENCAPSULATION



4. FINISHED PRODUCT

- ✓ Correct finished product storage conditions to preserve stability
- ✓ Retention samples for testing at end of shelf life
- ✓ Labelling, identification and formulation in accordance to ISAPP standards

ISAPP is an association of academic and industrial scientists involved in research on fundamental and applied aspects of probiotics and prebiotics.



QUALITY TESTING EVERY 15 MINUTES DURING PACKAGING




5. CLINICAL BENEFITS



- ✓ Microbiome confidence and expertise
- ✓ Efficacy
- ✓ Continuous professional education (MetaBiome™ Masters, International Congress of Natural Medicine, Triannual Seminars, Best Practice)
- ✓ Therapeutic results build patient trust and repeat consults
- ✓ Prescribe high quality and value probiotic/s
- ✓ Personalised options: specific health conditions, fridge or Activ-Vial™ room temperature storage, powder or capsule format

Clinically Effective Probiotics Range

The Metagenics Probiotic range provides Practitioner only solutions to tailor prescriptions for your patient.

| | | PROBIOTICS TO ADDRESS A SPECIFIC CONDITION | | | | PROBIOTICS TO ESTABLISH, MAINTAIN OR REBUILD A HEALTHY MICROBIOME | | | | | |
|---|---|---|--|---|--|---|--|--|---|--|--|
| IMMUNE | | GASTROINTESTINAL | | CARDIO-METABOLIC | | ESTABLISH | | MAINTAIN | | REBUILD | |
| IMMUNE MODULATION | IMMUNE STIMULATION | PATHOGEN CONTROL | IBS ¹ - PAIN AND BLOATING | CONSTIPATION | CHOLESTEROL AND WEIGHT MANAGEMENT | PREGNANCY AND BREASTFEEDING | INFANTS 0 - 3 | CHILDREN 3+ | MICROBIOME SUPPORT | MICROBIOME SUPPORT | MICROBIOME RESTORATION |
|  <p>Ultra Flora Immune Control</p> <p>LGG*, LP-33*</p> <ul style="list-style-type: none"> Allergies Anti-inflammatory |  <p>Ultra Flora Immune Enhance</p> <p>LGG*, HE AL9, 87/002</p> <ul style="list-style-type: none"> Seasonal immune protection (common cold) Acute and recurring infections |  <p>Ultra Flora SB Dysbiosis</p> <p>SB, BI-07</p> <ul style="list-style-type: none"> Diarrhoea and dysbiosis Candida Traveller's diarrhoea |  <p>Ultra Flora GI Soothe</p> <p>299v</p> <ul style="list-style-type: none"> Irritable Bowel Syndrome (IBS) symptoms - pain and bloating Gut inflammation Low FODMAP diet |  <p>Ultra Flora GI Regulate</p> <p>299v, & Partially Hydrolysed Guar Gum (PHGG)</p> <ul style="list-style-type: none"> Constipation (IBS and non-IBS) SIBO or methane production Low FODMAP diet |  <p>Ultra Flora MetaControl</p> <p>B-420™, HN019™</p> <ul style="list-style-type: none"> Metabolic health High cholesterol (total or LDL) Obesity and central adiposity |  <p>Ultra Flora Mother and Baby</p> <p>LGG*, M-16v, BB536, BB-12*</p> <ul style="list-style-type: none"> Maternal health Foetal microbiome establishment Infant health (reduce atopy, support behavioural health) |  <p>Ultra Flora Baby Care</p> <p>LGG*, M-16v, BB536, BB-12*</p> <ul style="list-style-type: none"> Infant microbiome establishment Atopy and ear infection Immune support Antibiotic use (microbiome restoration) |  <p>Ultra Flora Kids Care</p> <p>LGG*, NCFM®, BI-07</p> <ul style="list-style-type: none"> Commensal flora restoration and maintenance Immune protection Antibiotic use (microbiome restoration) |  <p>Ultra Flora Restore Dairy Free</p> <p>LGG*, NCFM®, BI-07</p> <ul style="list-style-type: none"> Commensal flora maintenance Gastrointestinal function Fridge-free convenience |  <p>Ultra Flora Spectrum</p> <p>NCFM®, BI-07, HN001™, HN019™, SB</p> <ul style="list-style-type: none"> Gastrointestinal health Immune wellbeing Pathogen protection |  <p>Ultra Flora Intensive Care</p> <p>LGG*, SB, BB-12*</p> <ul style="list-style-type: none"> Commensal flora restoration Antibiotic use Dysbiosis with restoration Gut barrier integrity |
| PROBIOTIC STRAINS | | | | | | | | | | | |
| CLINICAL INDICATIONS | | | | | | | | | | | |

 Vegetarian
  Dairy Free
  Gluten Free
  Does not increase D-Lactate status
  Capsule
  Powder

¹Medically diagnosed.
LGG* is a registered trademark of Chr. Hansen A/S. NCFM® is a registered trademark of DuPont.



Ultra Flora Intensive Care

Microbiome Recovery Formula.

REBUILD

Contents: 30 capsules (VegeCaps) (15 to 30 days) and 60 capsules (VegeCaps) (30 to 60 days)
Order Code: UFIC30 (30 capsules), UFIC60 (60 capsules)
Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

- Rebuild native commensal flora populations.^{1,2}
- Improve microbiome composition,³ function of healthy gut flora and gut barrier integrity.
- Well researched strains and strengths⁵ with clinically demonstrated patient health outcomes.^{6,7,8,9,10}

Each capsule contains:

22.5 billion live probiotic organisms:

| | |
|--|-----------------------------|
| <i>Lactobacillus rhamnosus</i> (LGG®) | 10 billion CFU (organisms) |
| <i>Saccharomyces cerevisiae</i> (boulardii) (SB) | 7.5 billion CFU (organisms) |
| <i>Bifidobacterium animalis</i> ssp <i>lactis</i> (BB-12®) | 5 billion CFU (organisms) |

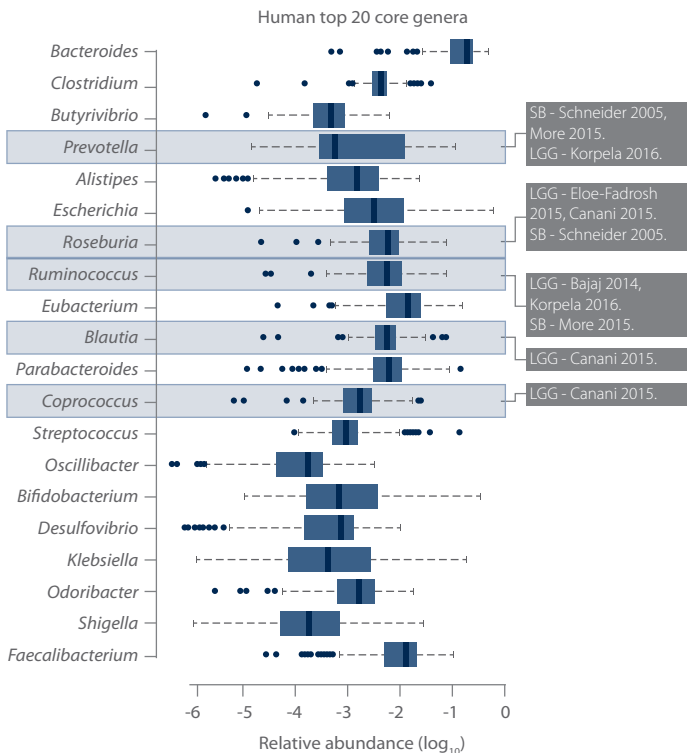
Directions: Adults: To rebuild healthy gut flora balance: Take 1 capsule twice daily.

To assist gut health: Take 1 capsule daily.

Clinical Benefits:

Rebuilds native commensal flora of the gut microbiome. Recent probiotic research¹¹ has shown that the key mechanism by which probiotics rebuild a disrupted microbiome is the modulation of native commensal bacterial populations. This is in contrast to the old understanding that probiotics repopulate by directly replacing and recolonising with specific probiotic strains and species.^{12,13} The dominant bacterial families of the microbiome contain over 1,000 species and many thousands of genetically unique strains to total approximately 38 trillion organisms.¹⁴

Figure 1: LGG® and SB Rebuild Core, Native Commensal Bacteria.

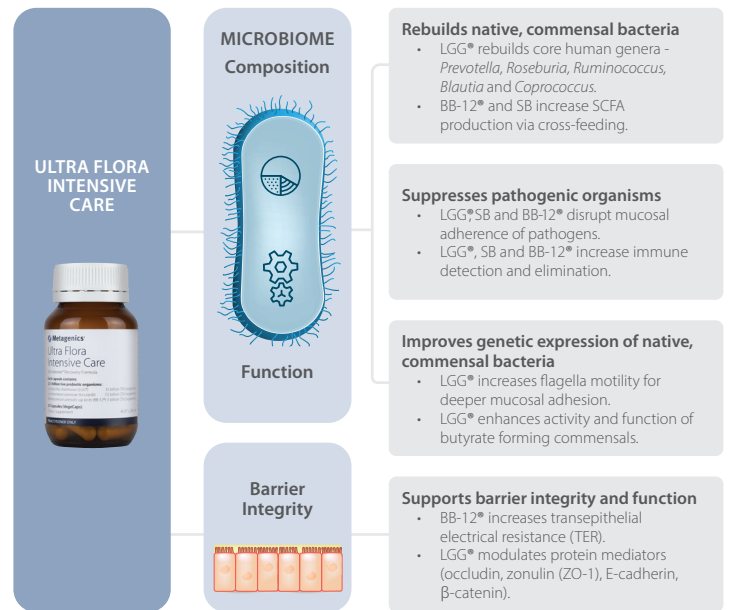


Xiao L, et al. A catalog of the mouse gut metagenome. Nat Biotechnol. 2015 Oct;33(10):1103-8.

Ultra Flora Intensive Care contains three of the world's most widely researched probiotics (LGG®, SB and BB-12®) with documented outcomes and mechanisms for microbiome replenishment.^{15,16}

These genetically unique probiotics support the growth and function of the dominant bacterial groups of the microbiome^{17,18} and suppress pathogen growth.¹⁹ In addition, BB-12®²⁰ and LGG®²¹ strains specifically support the gut epithelial mucosa where the bacterial populations reside and interact systemically.

Figure 2: Strain Specific Mechanisms to Rebuild Microbiome Composition and Function.



Ultra Flora Intensive Care provides LGG®, SB and BB-12® strains at a clinically validated dose for microbiome restoration and to assist gastrointestinal function.^{22,23,24} In addition, there is a substantial supportive body of evidence showing clinical improvement in patients with symptoms associated with microbiome depletion.^{25,26,27}

Contains live, original and clinically researched probiotic forms.

LGG®, SB and BB-12® are three of the world's most extensively researched probiotics with a range of clinically demonstrated health benefits. Factors that can influence probiotic activity include its genetic profile, manufacture (from culture to production) and storage. Live SB synthesises and secretes polyamines in order to exert its beneficial effects on the gastrointestinal mucosa, and inhibits pathogens.²⁸ Ultra Flora Intensive Care guarantees live SB CFU (colony forming units) at the label dose until expiry for clinical efficacy. LGG® is a genetically unique probiotic grown to a specific culturing and manufacturing process in order to provide reproducible and consistent clinical benefits in line with its wide body of research. Probiotics are genetically unique at a strain level and health benefits are not transferrable between strains (even within species).

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, flavours and preservatives.

LGG® is registered trademark of Chr. Hansen A/S.



Ultra Flora Mother and Baby

Specialised Probiotic Support During Pregnancy, Breastfeeding and Infancy.

ESTABLISH

Contents: 60 capsules (VegeCaps) (30 to 60 days)

Order Code: UFMB

Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

- Assist baby's behavioural¹, immune² and gastrointestinal health³ when taken during pregnancy.
- Support maternal flora balance⁴, glucose metabolism⁵ and wellbeing.
- 2 in 1 formula that can be used by both mother and baby.

Each capsule contains:

25 billion live probiotic organisms:

| | |
|---|----------------------------|
| <i>Lactobacillus rhamnosus</i> (LGG®) | 10 billion CFU (organisms) |
| <i>Bifidobacterium animalis ssp lactis</i> (BB-12®) | 5 billion CFU (organisms) |
| <i>Bifidobacterium breve</i> (M-16v) | 5 billion CFU (organisms) |
| <i>Bifidobacterium longum</i> (BB536) | 5 billion CFU (organisms) |

Directions: Pregnant women: First and second trimester: Take 1 capsule once daily for maternal health and flora balance.

From the third trimester and throughout breastfeeding: Take 1 capsule twice daily to support healthy, maternal blood glucose metabolism, infant wellbeing and reduced occurrence of eczema and behavioural complaints.

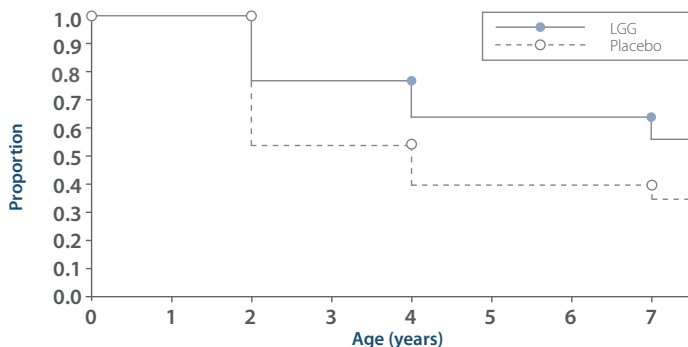
Infants (from birth): Empty the contents of 1 capsule and mix with breast milk, formula or water once daily to support baby's gut flora. Alternatively, Ultra Flora Baby Care (page 8) is an oral powder specifically formulated for infants from birth.

Clinical Benefits:

Assists behavioural complaints in later childhood (when taken during pregnancy and infancy). In a 2015 randomised trial, 159 mother-baby pairs were given 10 billion LGG® daily prenatally and until the age of six months. At the age of 13 years, no children in the LGG® group had developed behavioural complaints associated with ASD, compared to 17% of the control group.⁶ In addition, the study also measured the level of Bifidobacterium species bacteria which was significantly lower in affected children. The regulation of emotional behaviour and the central GABAergic system may be via the vagus nerve (gut-brain axis).⁷

20 billion LGG® has demonstrated benefits for childhood atopy and immune development.⁸ LGG® is well known with multiple randomised trials showing a reduction in atopy (allergy and eczema) when taken in the last trimester and during infancy.^{9,10,11} LGG® has a substantial body of evidence confirming efficacy at a dose of 20 billion per day in the last trimester and throughout breastfeeding, or 10 billion when given direct to infants.¹² The mechanism is understood to be an increase in transforming anti-inflammatory growth factor (TGF-β2) in breast milk. TGF-β2 is a key immunoregulatory anti-inflammatory factor that inhibits IgE synthesis.¹³

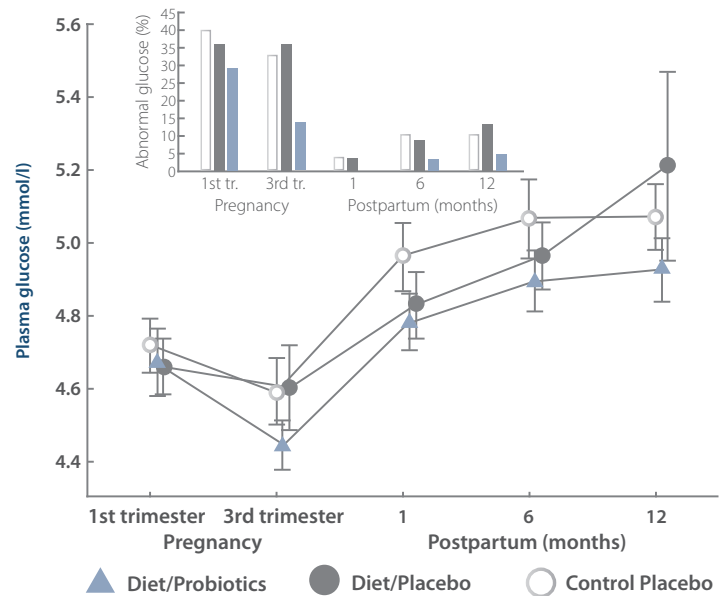
Figure 1: 20 Billion LGG® Has Long Lasting Benefits in Childhood Atopy Prevention.



Kalliomäki M, Salminen S, Poussa T, Isolauri E. J. Probiotics during the first 7 years of life: a cumulative risk reduction of eczema in a randomized, placebo-controlled trial. *Allergy Clin Immunol.* 2007 Apr; 119(4):1019-21.

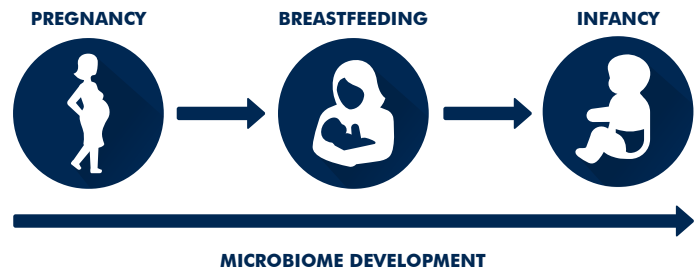
Up to 10% of pregnant women experience glucose transport problems.¹⁴ In late pregnancy, increases in serum insulin are often accompanied by insulin resistance. A 2009 randomised controlled trial demonstrated that a combination of 10 billion CFU of each strain (BB-12® and LGG®) assists maternal glucose metabolism when taken during pregnancy.¹⁵ In 2011, LGG® and BB-12® (alongside dietary counselling) were also demonstrated to help reduce the occurrence of central weight gain following childbirth.¹⁶

Figure 2: LGG® and BB-12® Combination Regulates Pregnancy Glucose Metabolism.



Laitinen K, Poussa T, Isolauri E; Nutrition, Allergy, Mucosal Immunology and Intestinal Microbiota Group. Probiotics and dietary counselling contribute to glucose regulation during and after pregnancy: a randomised controlled trial. *Br J Nutr.* 2009 Jun;101(11):1679-87.

Promotes the growth of infant commensal flora populations. Commensal microbiota colonisation is initiated by contact with vaginal microflora during birth, and matures under breast milk and environmental influences. LGG®, when given to infants, enhances the relative levels of key *Bifidobacterium*, including *B. breve*.¹⁷ *B. longum* (BB536) and *B. breve* (M-16v) are both human residential bacterial strains that have a modulating action on the gut microbiota of pregnant women and their infants.¹⁸ A dose of 10 billion *B. longum* (BB536) can help to establish a healthy intestinal microbiota in early life and improve T helper 1 (Th1) immune response.¹⁹



ELISA tested to ensure 100% dairy free and gluten free product. Does not increase D-lactate status.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, flavours and preservatives.

LGG® is registered trademark of Chr. Hansen A/S.



Ultra Flora Baby Care

Digestive System Health and Beneficial Intestinal Flora.

ESTABLISH

Contents: 50 g oral powder (17 to 35 days)

Order code: UFBC

Storage: Store at 2°C to 8°C. (Refrigerate. Do not freeze.)

- Reduces the incidence of ear infection.
- Authentic LGG®, shown to increase Bifidobacteria in infants, reduce atopy and improve immunity.
- Contains 3 Bifidobacteria to support the development of the infant microbiome.

Each dose (1.4 g) contains:

16 billion live probiotic organisms:

| | |
|---|-----------------------------|
| <i>Lactobacillus rhamnosus</i> (LGG®) | 6 billion CFU (organisms) |
| <i>Bifidobacterium animalis ssp lactis</i> (BB-12®) | 5 billion CFU (organisms) |
| <i>Bifidobacterium longum</i> (BB536) | 2.5 billion CFU (organisms) |
| <i>Bifidobacterium breve</i> (M-16v) | 2.5 billion CFU (organisms) |

Directions for use: Infants (from birth) and children to 12 years: Take 1/2 metric teaspoon (1.4 g) once daily.

To restore gut flora: Take 1/2 metric teaspoon (1.4 g) twice daily.

Ultra Flora Baby Care is unsweetened with a neutral, sweet taste. It can be added to cool or warm (not hot) liquids or food including breast milk and water. A wide neck bottle has been designed for ease of use.

Clinical Benefits:

Reduces ear infection and enhances immunity. Ear infection (Otitis media) affects 90% of children under five and is the main reason for antibiotic prescription in children.^{1,2} In a randomised, double-blind, placebo-controlled study of 88 infants, the combination of 10 billion LGG® and 10 billion BB-12® provided significant reduction in the incidence of ear infection when compared to placebo (Figure 1).³ Combined use of LGG® and BB-12® has also demonstrated a decrease in the incidence of ear infection,⁴ atopic eczema⁵ and antibiotic use,⁶ as well as exerting a restorative effect on the microbiome after antibiotic use.⁷

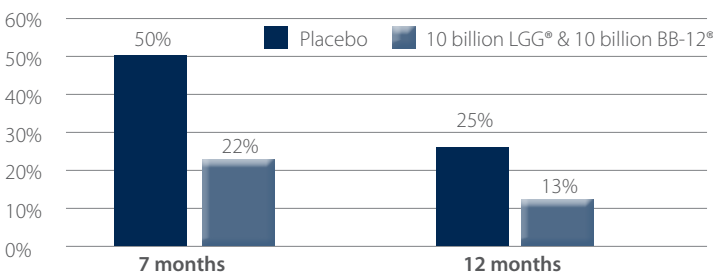


Figure 1: Otitis Media Incidence in Infants Given LGG® & BB-12®

Rautava S, Salminen S, Isolauri E. Specific probiotics in reducing the risk of acute infections in infancy—a randomised, double-blind, placebo-controlled study. *Br J Nutr.* 2009 Jun;101(11):1722-6.

Reduces colonisation of antibiotic resistant bacteria. LGG® research has been shown to reduce antibiotic prescribing in children with acute infections⁸ and helps restore commensal flora after antibiotic use.^{9,10} LGG® has also been shown to clear antibiotic resistant bacteria vancomycin-resistant enterococci (VRE). A study undertaken with 61 infants and children with VRE infection, found 62.5% of subjects using LGG® (alongside antibiotic therapy) were VRE negative after 3 weeks use, compared to 24% in the placebo group.¹¹

Ultra Flora Baby Care assists the development of the infant microbiome.

Colonisation of the gut starts at birth, developing and fluctuating until three years of age, when composition stabilises.^{12,13} LGG®, when given to colic-affected infants 6 weeks and under, promotes colonisation of *bifidobacterium* species (e.g. *B.breve*) by more than 40%.¹⁴ Originally isolated from healthy infants, both *B. longum* (BB536) and *B.breve* (M-16v) strains¹⁵ have been shown to help establish a healthy infant microbiome at daily doses between 5 billion¹⁶ and 10 billion.^{17,18} All strains in Ultra Flora Baby Care have been clinically researched in an infant population.¹⁹

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts, and soy protein. Does not increase D-lactate status.

LGG® and BB-12® are registered trademarks of Chr. Hansen A/S.



Ultra Flora Kids Care

Probiotic for Beneficial Gut Flora, Bowel Function and Immune Health in Children.

MAINTAIN, REBUILD

Contents: 50 g oral powder (12 to 25 days)

Order Code: FCK

Storage: Store at 2°C to 8°C. (Refrigerate. Do not freeze.)

- Maintains beneficial gut flora and bowel function.^{1,2}
- Supports healthy immunity in children.
- Dairy free probiotic and prebiotic combination.

Each dose (2.0 g) contains:

11 billion live probiotic organisms:

| | |
|--|-----------------------------|
| <i>Lactobacillus rhamnosus</i> (LGG®) | 6 billion CFU (organisms) |
| <i>Lactobacillus acidophilus</i> (NCFM®) | 2.5 billion CFU (organisms) |
| <i>Bifidobacterium lactis</i> (Bi-07) | 2.5 billion CFU (organisms) |
| Oligofructose | 1.0 g |

Directions: Suitable for children aged 0 to 12 years:

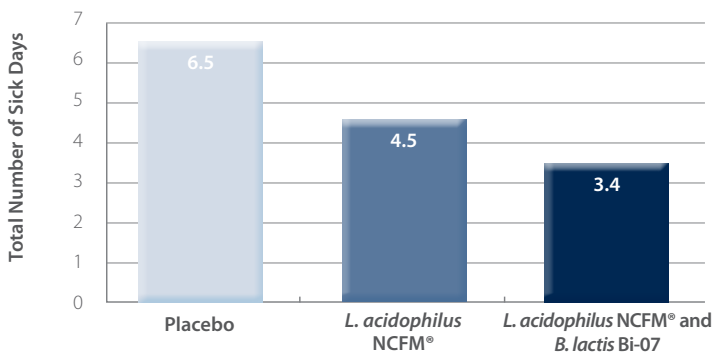
Children up to 12 years: Take 2/3 of a metric teaspoon (2.0 g) once daily, mixed into cool or warm (not hot) liquids or food.

To restore gut flora: Take 2/3 of a metric teaspoon (2.0 g) twice daily.

Clinical Benefits:

The average Australian and New Zealand child can have up to 10 colds per year,^{3,4} with 70% of children (2 years of age and over) in day care;⁵ an environment understood to triple the risk of becoming sick.⁶ A randomised, double-blind, placebo-controlled trial measured the effect of NCFM® and Bi-07 on immunity in 326 children aged between three to five years old in day care. There was a significant reduction in the incidence and number of sick days (Figure 1) in children taking NCFM® and Bi-07. Daily probiotic supplementation also reduced the use of antibiotics as well as days missed from school and day care. The study demonstrated the combination of NCFM® and Bi-07 worked better than NCFM® alone.⁷ Known for its immune-modulating actions.

Figure 1: Bi-07 and NCFM® Has Been Shown to Support Immunity.



Ultra Flora Kids Care is scientifically formulated with extensively researched strains that have been validated results to support gastrointestinal health and bowel function. LGG® is one of the world's most researched strains, with over 30 studies in children. This strain has a balancing effect in microbial composition, increasing lactobacilli levels and bifidobacteria species, stimulating short chain fatty acid (SCFA) production, while also normalising and restoring the intestinal mucosal barrier.⁸ Utilising specific prebiotics (i.e. oligofructose) and probiotic strains, such as LGG®, NCFM® and Bi-07 provides an array of benefits for children. This combination supports prebiotic metabolism, colonic function and regularity, as well as healthy microbiome composition; thereby assisting immune responses including minimising risk of inflammatory issues, pathogenic activity and allergies.^{9,10,11}

If children have been taking antibiotics, Ultra Flora Kids Care may assist in restoring healthy flora levels that have been disrupted. Research undertaken in 2015 during the winter period found that 51% of 0 to 4 year olds took at least one antibiotic.¹² LGG® has been shown to reduce the use of antibiotics for common infections in both infants and children.¹³ Further to this, a 2018 Meta-analysis of infants and children who received probiotics (including LGG®) to prevent acute illnesses had a lower risk of being prescribed antibiotics, relative to those who received placebo.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, flavours and preservatives.



Ultra Flora Restore

Maintain Digestive Health and Wellbeing.

MAINTAIN

ACTIV-VIAL™ FRIDGE FREE TECHNOLOGY

Contents: 60 capsules (VegeCaps) (60 days)

Order Code: UFC

Storage: Store at 25°C. Activ-Vial™ desiccant lined bottle guarantees live and effective probiotics without refrigeration.

- Maintain healthy gut flora balance.^{1,2}
- Assist digestive health and wellbeing.³
- Contains high quality, first milking colostrum.⁴
- No refrigeration required - remains full strength for the length of shelf life (when stored below 25°C), for improved patient compliance.

Each capsule contains:

25 billion live probiotic organisms:

| | |
|--|------------------------------|
| <i>Lactobacillus acidophilus</i> (NCFM®) | 11.5 billion CFU (organisms) |
| <i>Bifidobacterium lactis</i> (Bi-07) | 11.5 billion CFU (organisms) |
| <i>Lactobacillus rhamnosus</i> (LGG®) | 2 billion CFU (organisms) |
| Bovine colostrum powder | 62 mg |

Directions: Adults and children over five years: Take 1 capsule daily.

Clinical Benefits:

Aids general health and wellbeing: One in three probiotic consumers take a probiotic to maintain gut health and immune wellbeing.¹ Ultra Flora Restore supports gut function, maintains healthy flora balance and supports wellbeing via dendritic cell regulation.¹

May assist in maintaining healthy gut flora balance: The probiotic strains in Ultra Flora Restore have been shown to assist in maintaining and restoring the normal healthy flora¹ by utilising a wide variety of dietary fibres to create food for the native commensal flora¹. The NCFM® strain also produces key antimicrobial substances such as bacteriocins¹ to suppress the growth of opportunistic pathogenic organisms.

May maintain healthy gastrointestinal function: Healthy intestinal microflora populations exert many benefits for digestive health - assisting bloating, discomfort and function. The NCFM® strain has a unique ability to activate the opioid receptors in the gut, and has research in combination with Bi-07 in relieving gut pain and bloating.¹ LGG® has been shown to improve intestinal barrier function by protecting intestinal epithelial cells.¹

NCFM®, Bi-07 and LGG® are also available within Ultra Flora Plus Dairy Free, an oral powder. This powdered format may be more appropriate for certain patient groups (e.g. elderly or those with dysphagia).

Ultra Flora Restore contains the first milking colostrum derived from cattle with 40% IgG content.⁴

Free from eggs, gluten, wheat, nuts, yeast, soy protein and salt. Free from artificial colours and preservatives.

Products containing bovine colostrum powder contain lactose and cow's milk proteins. This product is not suitable for use in children under the age of 12 months except on professional health advice.

NCFM® is a registered trademark of DuPont.
LGG® is registered trademark of Chr. Hansen A/S.



Ultra Flora Restore Dairy Free

Maintain Digestive Health and Wellbeing.

MAINTAIN

ACTIV-VIAL™ FRIDGE FREE TECHNOLOGY

Contents: 30 capsules (VegeCaps) (30 days) and 60 capsules (VegeCaps) (60 days)

Order Code: UFRDF30 (30 capsules), UFRDF (60 capsules)

Storage: Store at 25°C. Activ-Vial™ desiccant lined bottle guarantees live and effective probiotics without refrigeration.

- Maintain healthy gut flora balance.^{1,2}
- Assist digestive health and wellbeing.⁴
- No refrigeration required - remains full strength for the length of shelf life (when stored below 25°C), for improved patient compliance.

Each capsule contains:

25 billion live probiotic organisms:

| | |
|--|------------------------------|
| <i>Lactobacillus acidophilus</i> (NCFM®) | 11.5 billion CFU (organisms) |
| <i>Bifidobacterium lactis</i> (Bi-07) | 11.5 billion CFU (organisms) |
| <i>Lactobacillus rhamnosus</i> (LGG®) | 2 billion CFU (organisms) |

Directions: Adults and children over five years: Take 1 capsule daily.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts, and soy protein. Free from artificial colours, flavours and preservatives.

NCFM® is a registered trademark of DuPont.
LGG® is registered trademark of Chr. Hansen A/S.



Ultra Flora Spectrum

Multi-Strain Complex with Five Researched Strength, Scientifically Validated Probiotics.

MAINTAIN

Contents: 30 capsules (VegeCaps) (30 days)
and 60 capsules (VegeCaps) (60 days)

Order Code: UFS30 (30 Capsules), UFS60 (60 Capsules)

Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

- Help to maintain healthy gut and immune wellbeing.
- Contains 52.5 billion live organisms from five probiotics at researched strengths.
- Combines 5 billion (250 mg) *S. boulardii* with scientifically validated probiotic bacterial strains.

Each capsule contains:

52.5 billion live probiotic organisms:

| | |
|---|------------------------------|
| <i>Lactobacillus acidophilus</i> (NCFM®) | 20 billion CFU (organisms) |
| <i>Bifidobacterium lactis</i> (Bi-07) | 12.5 billion CFU (organisms) |
| <i>Lactobacillus rhamnosus</i> (HN001™) | 10 billion CFU (organisms) |
| <i>Bifidobacterium animalis ssp lactis</i> (HN019™) | 5 billion CFU (organisms) |
| <i>Saccharomyces cerevisiae</i> (boulardii) (SB) | 5 billion CFU (organisms) |

Directions: Adults: Take 1 capsule daily.

Clinical Benefits:

Maintain gastrointestinal (GI) comfort and healthy digestive function:

Lactobacillus acidophilus (NCFM®) is one of the world's most researched acidophilus strains and has been used exclusively in Metagenics probiotics for almost 30 years. Studies have shown benefits for patients experiencing digestive discomfort. For example, a 2014 clinical trial found a modulatory effect of colonic mucosal opioid receptor expression and activity in patients with functional abdominal pain at 20 billion CFU/day.¹ Further, a 2017 Australian randomised trial combining NCFM® and Bi-07 showed a significant reduction in the duration of pain post colonoscopy.² SB is understood to support healthy GI function and has been shown to increase short chain fatty acid production.³ NCFM® is also able to maintain beneficial intestinal flora to help restore GI wellbeing.⁴

Regulation of transit time and flora balance: *Bifidobacterium animalis ssp lactis* (HN019™) has been clinically trialed in 2011, demonstrating a decrease in gut transit time at a daily dose of 1.8 billion CFU and a reduction in the frequency of functional GI symptoms.⁵ HN019 has also been researched in combination with NCFM® and HN001™.^{6,7} SB's effects have been shown to be dose dependent in a 2010 systematic review and meta-analysis, which included a study involving 3,000 subjects.³ For example, 5 billion CFU (250 mg) SB may be used to maintain gut health by preventing pathogenic attachment to intestinal receptors.³

Immune wellbeing: *Lactobacillus rhamnosus* (HN001™) is a well-researched probiotic with a wide body of evidence for immune wellbeing. A 2018 randomised, controlled trial shows a reduction in *Staphylococcus aureus* in the stool and the GI tract at a dose of 10 billion CFU per day.⁸ After four weeks, presence of *S. aureus* in the GI tract was reduced by 73%.⁸ HN019™ has been shown to help improve the body's defence against infection through strengthening immune function and specific immune cell activity (phagocytes and natural killer cells).⁹

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts, and soy protein. Free from artificial colours, flavours and preservatives.

NCFM® is a registered trademark of DuPont.

Figure 1: Ultra Flora Spectrum: Multi-Strain Complex With Five Researched Strength, Scientifically Validated Probiotics.

| | NCFM® | HN001™ | HN019™ | SB | Combination Strains (including Bi-07) | |
|----------------|-------------------------|--------------------------|-----------------------------|----------------------------|---------------------------------------|----------------|
| Transit time | | | 1-10 billion ^{1,2} | | NCFM® and HN019™ ³ | Transit time |
| Gut discomfort | 20 billion ⁴ | | | | | Gut discomfort |
| Gut health | | | | 5 billion ^{5,6,7} | NCFM® and Bi-07 ⁸ | Gut health |
| | | | | | NCFM® and HN001™ ⁹ | |
| Immune support | | 10 billion ¹⁰ | 5 billion ^{11,12} | | NCFM® and Bi-07 ^{13,14} | Immune support |



Ultra Flora LGG® Forte

Double Strength, Researched, Authentic LGG®.

ACTIV-VIAL™ FRIDGE FREE TECHNOLOGY

Contents: 60 capsules (VegeCaps) (30 days)

Order Code: UFLC

Storage: Store at 25°C. Activ-Vial™ desiccant lined bottle guarantees live and effective probiotics without refrigeration.

- For a wide range of microbiome clinical protocols and for immune conditions and gastrointestinal function.
- Contains the authentic LGG® strain and supply chain, with over 20 years of clinical research.
- No refrigeration required - remains full strength for the length of shelf life (when stored below 25°C), for improved patient compliance.

Each capsule contains:

20 billion live probiotic organisms:

| | |
|---------------------------------------|----------------------------|
| <i>Lactobacillus rhamnosus</i> (LGG®) | 20 billion CFU (organisms) |
|---------------------------------------|----------------------------|

Directions: Adults: Take 1 capsule daily.

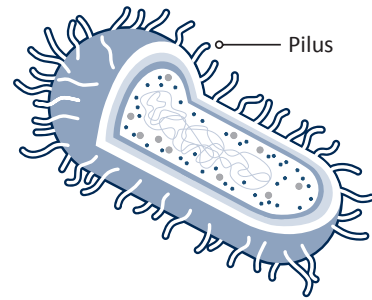
Clinical Benefits:

LGG® is one of the world's most researched probiotic strains with 1000+ scientific publications and over 300 in humans.¹ Isolated by Gorbach and Goldin in 1985, LGG® has unique hair-like appendages called pili which increase its persistence in the gastrointestinal tract where it is able to exert positive health benefits (see Figure 1).² Not all *Lactobacillus rhamnosus* GG probiotics are comparable; commercialised GG probiotics (against LGG®) show major DNA segments to be missing with pili encoding genes among these (Figure 2). Manufacturing and growth mediums can also effect both the genetic expression and survival of pili. Metagenics have exclusively used trademarked LGG® since 2008, guaranteeing strain and manufacturing authenticity, and matching the majority of human clinical trials.

LGG® has demonstrated the following mechanisms:

- Increases the levels of commensal flora in the gastrointestinal tract.⁵
- Increases the formation of short chain fatty acids (SCFAs), which facilitate essential gastrointestinal functions.⁶
- Improves and supports intestinal barrier integrity.⁷

Figure 1: LGG® with Pili (Hair-Like Appendages) to Maximise Mucosal Adhesion.



An increasing number of probiotic customers prefer the convenience of shelf storage while not compromising on quality. Activ-Vial® is a specialised type of packaging that has an in-built desiccant sleeve consisting of moisture absorbing polymers within the bottle wall, for maximum surface area to ensure the probiotic strains are kept full strength, live and effective throughout the duration of use, until expiry.

Ultra Flora LGG® Forte can be kept at room temperature (up to 25°C) because it is kept live and stable by the Activ-Vial™ bottle moisture defence technology. Metagenics manufacturing, testing and shipping procedures ensure all probiotics are live and effective until expiry.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, flavours and preservatives.

LGG® is a registered trademark of Chr. Hansen A/S

Figure 2: LGG® Mucus Adhesion v GG Mutants.

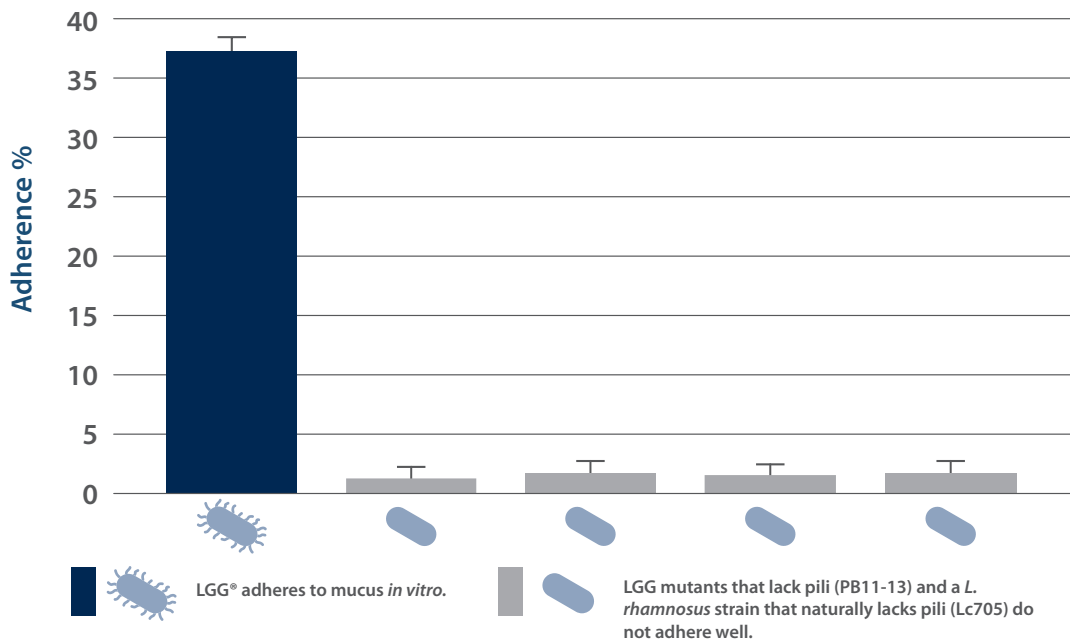


Figure adapted from Rasinkangas et al., 2014 Appl Environ Microbiol.



Ultra Flora GI Soothe

Specialised Probiotic to Reduce the Occurrence and Symptoms Associated with Medically Diagnosed IBS.

GASTROINTESTINAL

Contents: 30 capsules (30 days) or 60 capsules (60 days)
Order Code: PBXC30 (30 capsules) and PBXC (60 capsules)
Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze).

Ingredients in Ultra Flora GI Soothe have been clinically shown to or may help to:

- Assist in the management of medically diagnosed irritable bowel syndrome (IBS).¹
- Reduce occurrence of IBS symptoms including, gastrointestinal pain, discomfort, bloating and excessive gas.²
- Contains clinically proven, extensively researched exclusive probiotic strain *Lactobacillus plantarum* 299v.

Each capsule contains:

20 billion live probiotic organisms:

Lactobacillus plantarum 299v 20 billion CFU (organisms)

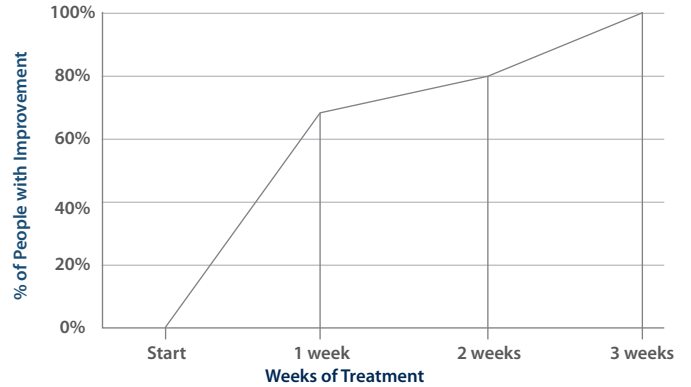
Directions for use: Adults: Take 1 capsule daily.

For severe cases: Take 1 capsule twice daily.

Clinical Benefits:

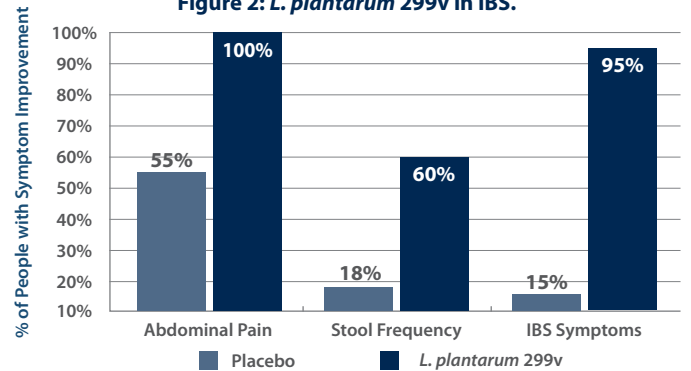
Around 1 in 5 Australians experience the unpleasant symptoms of IBS at some stage including abdominal pain, mucus in stools, and diarrhoea.³ A randomised, double-blind placebo-controlled trial tested the efficacy of *L. plantarum* 299v in 40 people with IBS over four weeks. All patients treated with *L. plantarum* 299v reported significant improvement in stool frequency and complete resolution of their abdominal pain (Figure 1).⁴ An overall improvement in all IBS symptoms were noted in 95% of patients in the treatment group, compared to only 15% in the placebo group (Figure 2).⁵ Another study involving 204 adults with medically diagnosed IBS found significant symptom improvement within 2 to 4 weeks including abdominal bloating, pain and bowel movements.⁶

Figure 1: Change in IBS Abdominal Pain From *L. plantarum* 299v.



Niedzielin K, Kordecki, H and Birkenfeld, B. A controlled, double-blind, randomized study on the efficacy of *Lactobacillus plantarum* 299v in patients with Irritable Bowel Syndrome. Eur J Gastro Hepat 2001; 13:1143-7.

Figure 2: *L. plantarum* 299v in IBS.



Niedzielin K, Kordecki, H and Birkenfeld, B. A controlled, double-blind, randomized study on the efficacy of *Lactobacillus plantarum* 299v in patients with Irritable Bowel Syndrome. Eur J Gastro Hepat 2001; 13:1143-7.

Defective mucosal intolerance and inflammation: Disruption of the intestinal barrier can lead to inappropriate inflammatory responses which may occur in IBS. Studies have shown *L. plantarum* 299v to have an effect on barrier function by decreasing permeability.⁷ *L. plantarum* 299v has also been shown to exert antipathogenic activity via the production of antimicrobial compounds and inhibiting pathogen adhesion.⁸

A 2016 randomised control trial shows *L. plantarum* 299v reduces salivary cortisol during stress.⁹ Stress is well recognised as a common trigger for IBS impacting gut secretions, motility, sensitivity and intestinal permeability. A 2016 study on 41 students showed a significant difference in salivary cortisol levels after only 10 days of taking 10 billion CFU.¹⁰

***L. plantarum* 299v is an extensively researched probiotic strain** having been investigated in at least 140 studies to date, with more than 50 clinical trials.¹¹

Free from dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein and salt. FODMAP friendly. Free from artificial colours and flavours.

| Ultra Flora GI Regulate | Patient Presentation | Ultra Flora GI Soothe |
|-------------------------|--|-----------------------|
| ✓ | Medically diagnosed IBS | ✓ |
| ✓ | Constipation | |
| ✓ | Symptom support (gastrointestinal bloating, pain) | ✓ |
| Mechanism | | |
| ✓ | Inflammation | ✓ |
| ✓ | Gut barrier integrity | ✓ |
| Format | | |
| | Capsules for convenience | ✓ |
| | Single 20 billion <i>L. plantarum</i> 299v probiotic strain | ✓ |
| ✓ | Low reactive prebiotic and probiotic powder for flexible dosing | |
| ✓ | <i>L. plantarum</i> 299v has been investigated in 140 studies with more than 50 clinical trials | ✓ |



Ultra Flora GI Regulate

Specialised Probiotics and Prebiotic for Healthy Bowel Function.

GASTROINTESTINAL

Contents: 150 g powder (30 days)

Order Code: GIREG

Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

Ingredients in Ultra Flora GI Regulate have been clinically shown to:

- Support healthy bowel function.¹
- Reduce constipation¹⁹ and irritable bowel syndrome (IBS) symptoms^{2,3,4,5} via modulation of small intestinal bacterial overgrowth (SIBO),⁶ methane levels,⁷ short chain fatty acids (SCFAs) (i.e. butyrate),⁸ intestinal barrier integrity^{9,10} and inflammation.¹¹
- Low reactive, FODMAP free, powdered prebiotic and probiotic food for sensitive patients.

Each serve (5 g) contains only:

| | |
|--------------------------------------|----------------------------|
| Partially Hydrolysed Guar Gum (PHGG) | 5 g |
| <i>Lactobacillus plantarum</i> 299v | 20 billion CFU (organisms) |

| | Per 5 g | Per 100 g |
|---------------|----------------|------------------|
| Energy | 44 kJ (11 Cal) | 879 kJ (210 Cal) |
| Protein | <1.0 g | 1.1 g |
| Fat - total | <1.0 g | <1.0 g |
| Carbohydrate | | |
| - total | <1.0 g | 13.1 g |
| - sugars | <1.0 g | <1.0 g |
| Dietary fibre | 3.9 g | 78.3 g |
| Sodium | <5 mg | 99 mg |

Average values given

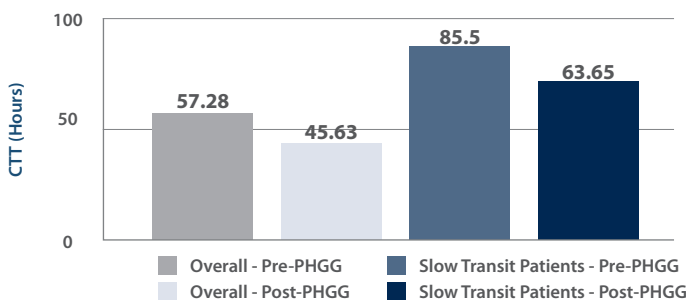
Serving suggestion: Adults: Add 3 metric teaspoons (5 g) to 200 mL of water and stir until dissolved. Take once daily.

Ultra Flora GI Regulate is an easily dissolved and non-flavoured powder, making it suitable for mixing with other powdered supplements.

Clinical Benefits:

Reduction of chronic constipation and IBS symptoms: Both IBS and non IBS related constipation are commonly occurring health issues in Australia, however, non IBS related constipation is twice as common in Australia as IBS.^{12,13} *Lactobacillus plantarum* 299v is extensively researched and shown to reduce a range of IBS symptoms.¹⁴ PHGG is a selective prebiotic, used as a fuel by butyrate producing bacteria.¹⁵ A meta-analysis of seven randomised trials¹⁶ of PHGG found a reduction in chronic constipation (Figure 1) while several randomised trials,^{17,18} found a significant decrease in IBS symptoms.

Figure 1: PHGG Reduces Colon Transit Time in Patients With Chronic Constipation.

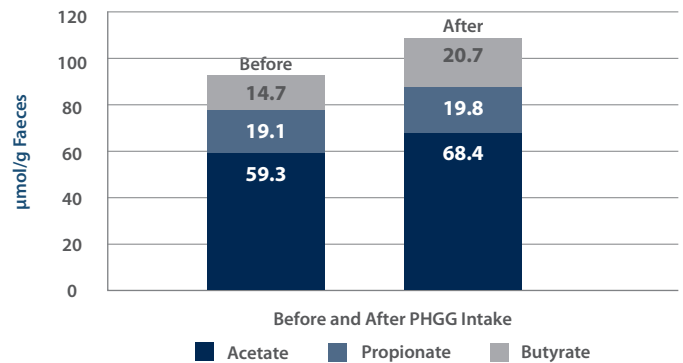


Polmeros D, Beintaris I, Gaglia A, Karamanolis G, Papanikolaou IS, Dimitriadis G, Triantafyllou K. Partially hydrolyzed guar gum accelerates colonic transit time and improves symptoms in adults with chronic constipation. *Dig Dis Sci.* 2014 Sep;59(9):2207-14. doi: 10.1007/s10620-014-3135-1.

SIBO, methane and butyrate regulation; PHGG is fermented by large intestinal commensal bacteria increasing SCFA production particularly butyrate¹⁹ (Figure 2), as well as assisting colonic blood flow and epithelial repair.²⁰ PHGG influences gut motility, secretions and vagal modulation of contraction,²¹ and has been shown to reduce methane levels. Methane production is implicated in the reduction in 5HT (gut serotonin) levels and reduced intestinal motility.²² Excessive production of methane has been linked to gastrointestinal issues such as SIBO, chronic constipation, IBS and slow transit time.^{23,24} PHGG may therefore assist in reducing severity of these conditions and symptoms. Research of PHGG has also shown other benefits, including:

- Reduced methane excretion²⁵
- Improved effectiveness of antibiotic SIBO treatment (when used with PHGG)²⁶
- Improvements in chronic constipation²⁷

Figure 2: Effect of PHGG on Mean SCFA Concentration in Human Faeces (µmol/g Faeces).



Ohashi Y, Sumitani K, Tokunaga M, Ishihara N, Okubo T, Fujisawa T. Consumption of partially hydrolysed guar gum stimulates Bifidobacteria and butyrate-producing bacteria in the human large intestine. *Benef Microbes.* 2015;6(4):451-5. doi: 10.3920/BM2014.0118.

Visceral hypersensitivity, abdominal pain and inflammation; Probiotics can help modulate visceral hypersensitivity (increased pain sensitivity) to reduce abdominal pain²⁸ and improve patient comfort. Both *L. plantarum* 299v and PHGG have been shown to reduce abdominal pain by 50%,²⁹ which can be a key symptom driving patients to seek health advice. Gut inflammation can also contribute to pain and associated symptoms that may benefit from probiotic strains, such as *L. plantarum* 299v, shown to exert a modulatory effect on the inflammatory response of epithelium,³⁰ helping to improve gastrointestinal comfort and health.

Free from animal products, corn, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein, salt and FODMAPS. Free from artificial colours, flavours and preservatives.



Ultra Flora SB Dysbiosis

Dysbiosis Control.

GASTROINTESTINAL

Contents: 60 capsules (VegeCaps) (30 days)
Order Code: UFSBD
Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

- Assist with the management of dysbiosis.¹
- Relieve and reduce the frequency of diarrhoea.^{1,2}
- Reduce the risk of traveller's diarrhoea.³

Each capsule contains:

12.5 billion live probiotic organisms:

| | |
|--|-----------------------------|
| <i>Saccharomyces cerevisiae</i> (boulardii) (SB) | 7.5 billion CFU (organisms) |
| <i>Bifidobacterium lactis</i> (Bi-07) | 5 billion CFU (organisms) |

Directions: Adults: Take 1 capsule twice daily with food until finished.

Clinical Benefits:

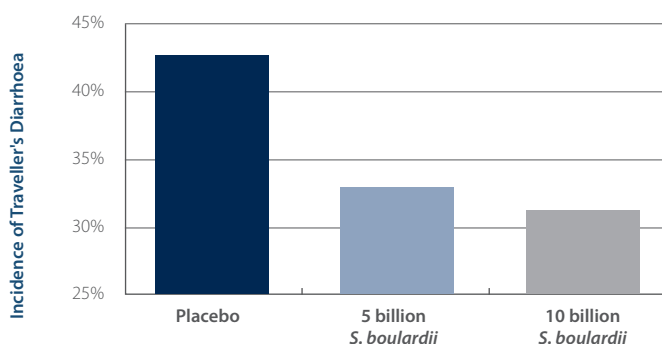
27 trials encompassing 5,029 people showed *Saccharomyces cerevisiae* (boulardii) as being effective in the management of dysbiosis.¹

S. boulardii exerts its effects throughout the gastrointestinal tract to reduce the symptoms of dysbiosis, including diarrhoea and constipation.^{4,5,6} Maintaining healthy mucosal bacterial populations helps to restore normal gut functionality and healthy mucosal biofilm communities.⁷

10 billion CFU of *S. boulardii* per day has been shown to reduce the incidence of traveller's diarrhoea.³ *S. boulardii* has been shown to increase short chain fatty acids which favour normal colonic function.¹

Ultra Flora SB Dysbiosis contains *Bifidobacterium lactis* (Bi-07) as bifidobacteria may be decreased in traveller's diarrhoea.³

Figure 1: *S. boulardii* Has Been Shown to Reduce The Risk of Traveller's Diarrhoea.



Kollaritsch HH, Kreamsner P, Wiedermann G, Scheiner O. Fortschr Med 1993;111(9): 152-6.

Free from animal products, corn, dairy protein, lactose, eggs, gluten, wheat, nuts, soy protein and salt. Free from artificial colours, flavours and preservatives.



Ultra Flora Digest

An Exclusive Combination for Digestive Health and to Support Beneficial Gut Bacteria.

PREBIOTIC

Contents: 255 g oral powder (30 days) Pineapple flavour
Order Code: UFDG
Storage: Store below 30°C

- Support healthy digestive function and beneficial gut bacteria.¹
- Support healthy immunity.²
- A great tasting, rapidly dispersible source of fibre.³

Ingredients:

Resistant maltodextrin (MetaFibre®) (88%), yeast extract (EpiCor®) (5.8%), flavours, malic acid, steviol glycosides.

Nutritional Information:

Servings per package: 30
 Serving size: 8.5 g (2 level scoops)

| Quantity per | 8.5 g | 100 g |
|--|-----------------------|----------------------|
| Energy | 77 kJ (18.5 Cal) | 908 kJ (217 Cal) |
| Protein | 0.15 g | 1.8 g |
| Fat | | |
| - total | 0.02 g | 0.2 g |
| - saturated | < 1.0 g | < 1.0 g |
| Carbohydrates | | |
| - total | 1.2 g | 14.1 g |
| - sugars | 0.91 g | 10.7 g |
| Dietary fibre (Including all resistant maltodextrins) | 6.7 g | 78.8 g |
| Sodium | 2.5 mg (0.1 mmol) | 29 mg (1.3 mmol) |
| Potassium | 26.9 mg (0.7 mmol) | 317 mg (8.1 mmol) |

Average values shown.

Serving suggestion: Adults: Add 2 level scoops (8.5 g) to 200 mL of water once daily.

Clinical Benefits:

Healthy digestive function: Ultra Flora Digest contains MetaFibre® resistant maltodextrin, which promotes short chain fatty acid production to fuel colonic cells.⁴ MetaFibre® increases bulk by holding water and increasing bacterial mass from fibre fermentation to help maintain regularity.³ EpiCor® increases populations of Lactobacilli which gives it prebiotic activity, and may improve digestive health and mucosal immunity.^{5,1}

Support healthy immunity: EpiCor® is an exclusive yeast extract that possesses immune-modulating effects as seen by a transient reduction of circulating T and NK cells, leading to increased homing into tissues, thereby suggesting healthy immune activation and surveillance. EpiCor® also increases secretory IgA (sIgA), which provides immune protection to the body's mucosal surfaces, supporting mucosal defence and immune protection.²

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, flavours and preservatives.



Ultra Flora Immune Control

An Exclusive Probiotic Combination for Healthy Immune System Function.

IMMUNE

Contents: 30 capsules (VegeCaps) (30 days) and 60 capsules (VegeCaps) (60 days)
Order Code: UFICT (30 capsules) and UFICT60 (60 capsules)
Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

Probiotic strains in Ultra Flora Immune Control have been shown to help:

- Maintain healthy immune system regulation.¹
- Reduce occurrence of, and manage, allergy symptoms.^{2,3}
- Decrease occurrence of eczema in infants and children. Eczema affects up to one in three children.⁴
- Combination of two immune **modulating**, anti-inflammatory probiotic strains.

Each capsule contains:

22 billion live probiotic organisms:

| | |
|---|----------------------------|
| <i>Lactobacillus rhamnosus</i> (LGG®) | 20 billion CFU (organisms) |
| <i>Lactobacillus paracasei</i> (LP-33®) | 2 billion CFU (organisms) |

Directions: Adults (including pregnant and breastfeeding women): Take 1 capsule daily.

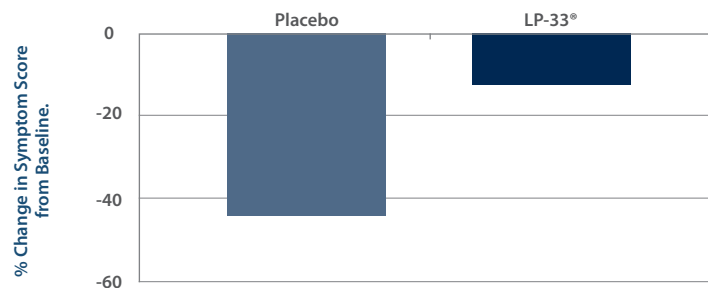
Clinical Benefits:

Regulate the immune system: *Lactobacillus rhamnosus* LGG® and *Lactobacillus paracasei* (LP-33®) help to promote immune regulation by interacting with dendritic cells within the gut associated lymphoid tissue (GALT), stimulating the production of regulatory T cells and increasing production of regulatory cytokines such as IL-10 and TGF-beta.⁵ LGG® also promotes a shift towards an enhanced anti-inflammatory response by a heightened secretion of anti-inflammatory cytokines and decreased secretion of pro-inflammatory cytokines.³

LGG® has bidirectional immunomodulatory effects – stimulatory when an increased response is needed and down-regulatory when attenuation is appropriate.⁶ 20 billion CFU of LGG® daily has been shown to reduce immune hyper-reactivity by strengthening gut mucosal barrier integrity.⁸

LP-33® modulates inflammation and immune reactions by interacting with these cells and, together with LGG®, inducing development of regulatory T cells which can down regulate IgE, a Th2 cytokine involved in allergy.² A double-blind, randomised, placebo-controlled trial on 425 subjects with allergic rhinitis compared the effects of LP-33® or placebo over a five week period. The LP-33® group demonstrated significant improvements in their Rhinitis Quality Of Life (RQLQ) score, as well as nasal and ocular symptoms (Figure 1).²

Figure 1: *Lactobacillus paracasei* (LP-33®) Improves Symptoms of Allergic Rhinitis.



Costa DJ, Marteau P, Amouyal M, Poulsen LK, Hamelmann E, Cazaubiel M, et al. Efficacy and safety of the probiotic *Lactobacillus paracasei* LP-33 in allergic rhinitis: a double-blind, randomized, placebo-controlled trial (GA2LEN Study). *Eur J Clin Nutr.* 2014 May;68(5):602-7. 2014.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, flavours and preservatives.

LGG® is registered trademark of Chr. Hansen A/S.



Ultra Flora Immune Enhance

An Exclusive Probiotic Combination to Boost Immune System Function.

IMMUNE

Contents: 30 capsules (VegeCaps) (30 days) and 60 capsules (VegeCaps) (60 days)
Order Code: UFIEI (30 capsules) and UFIEI60 (60 capsules)
Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

Probiotic strains in Ultra Flora Immune Enhance have been shown to help:

- Enhance healthy immune system function.¹
- Reduce duration and severity of colds.^{2,3}
- Maintain healthy gastrointestinal immune function and support beneficial intestinal bacteria adherence.^{4,5}
- Exclusive combination of immune **stimulating** probiotic strains.

Each capsule contains:

6 billion live probiotic organisms:

| | |
|---|-----------------------------|
| <i>Lactobacillus rhamnosus</i> (LGG®) | 5 billion CFU (organisms) |
| <i>Lactobacillus plantarum</i> (HEAL9) | 500 million CFU (organisms) |
| <i>Lactobacillus paracasei</i> (8700:2) | 500 million CFU (organisms) |

Directions: Adults: Take 1 capsule daily.

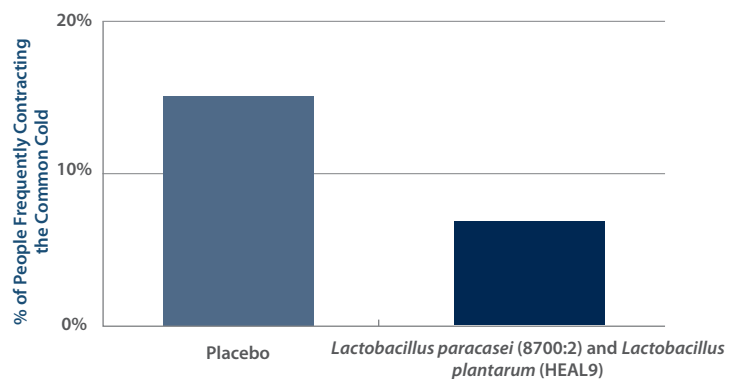
Clinical Benefits:

***Lactobacillus plantarum* (HEAL9) and *Lactobacillus paracasei* (8700:2) stimulate the immune system:** This probiotic combination has been shown, in multiple clinical trials, to induce specific (acquired) immunity, thereby helping to reduce the duration and symptom severity of the common cold.^{1,2}

***Lactobacillus plantarum* (HEAL9) and *Lactobacillus paracasei* (8700:2) reduce duration and severity of common colds:** A randomised, parallel, double-blind, placebo-controlled study supplemented 272 subjects with either 500 million each of (HEAL9) and (8700:2) or a placebo for 12 weeks.¹ Those who were taking this exclusive probiotic combination experienced a 28% reduction in the duration of their cold and a reduction in total symptom score by 24% (Figure 1).¹

LGG® has bidirectional immunomodulatory effects – stimulatory when an increased response is needed and down-regulatory when attenuation is appropriate.⁶

Figure 1: *Lactobacillus paracasei* (8700:2) and *Lactobacillus plantarum* (HEAL9) Significantly Reduce the Incidence of the Common Cold.¹



Berggren A, Lazou Ahrén I, Larsson N, Önnings G. Randomised, double-blind and placebo-controlled study using new probiotic lactobacilli for strengthening the body immune defence against viral infections. *Eur J Nutr.* 2011 Apr;50(3):203-10. 2011.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, flavours and preservatives.

LGG® is registered trademark of Chr. Hansen A/S.



Ultra Flora MetaControl

Advanced Probiotic Combination to Shape a Beneficial Microbiome for Wellbeing.

CARDIO-METABOLIC

Contents: 60 capsules (VegeCaps) (60 days)

Order Code: UFMC

Storage: Store at 2°C to 8°C (Refrigerate. Do not freeze.)

- Provides metabolic benefits, including reduced body mass index (BMI), reduction in total cholesterol and low density lipoprotein (LDL).^{1*}
- Improves weight management, including total and abdominal fat mass, waist circumference and reduced energy intake.²

Each capsule contains:

24 billion live probiotic organisms:

Bifidobacterium animalis ssp lactis (HN019™) 14 billion CFU (organisms)

Bifidobacterium animalis ssp lactis (B-420™) 10 billion CFU (organisms)

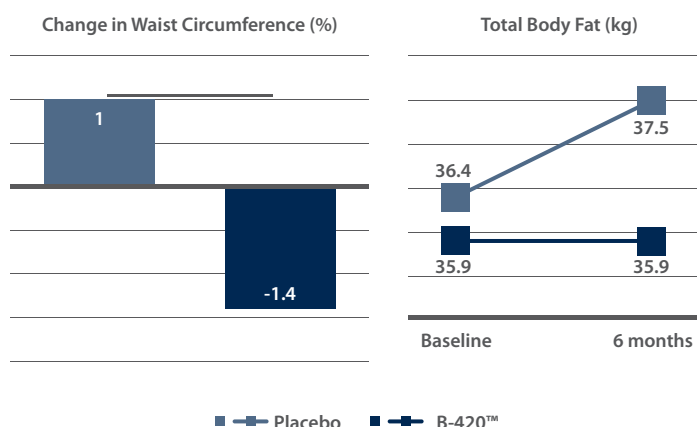
Directions: Adults: Take 1 capsule daily.

Clinical Benefits:

Recent microbiome research has established a potential correlation between body weight and the microbiome. DNA analysis has shown that obese subjects may have a different microbiome composition to lean subjects. Gut bacterial composition is able to influence how energy is stored, as well as influence glycaemic control and satiety hormones. Specific probiotics can be a useful adjunct to dietary programs to control weight, metabolic markers and body composition.⁶

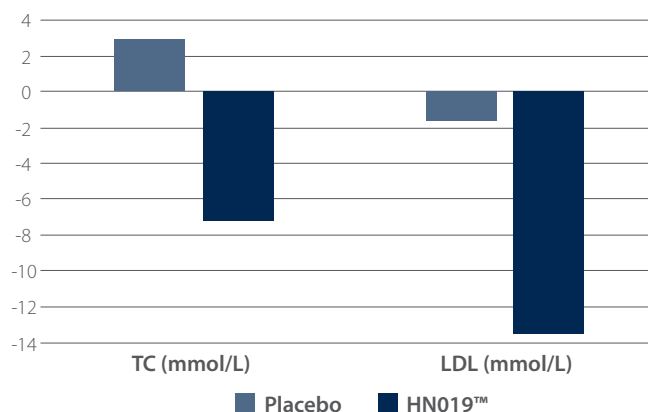
Weight control and body composition: *Bifidobacterium animalis ssp lactis* (B-420™) has a growing body of human and animal research, including a 2016 clinical trial. A 6 month study of 225 non-dieting, overweight people (predominantly women aged 40+) took 10 billion B-420™ daily (with or without dietary fibre) or placebo. Both B-420™ groups showed significant improvements in fat mass, abdominal fat, waist circumference and lean muscle mass, as well as an overall reduction in calorie consumption.⁷ Pre-clinical animal and *in vitro* research on B-420™ has demonstrated reduced weight gain, improved glycaemic response,^{8,9} reduced zonulin levels (a marker of intestinal permeability),¹⁰ improved tight junction integrity, and protection against *E. coli*-induced damage decreasing gut inflammation and the consequential impairment in insulin sensitivity.^{11,12}

Figure 1: B-420™ – Beneficial Effect on Body Composition.



Cardiometabolic markers can also be influenced by probiotics. A 2016 study on 51 adults with metabolic syndrome showed that *Bifidobacterium animalis ssp lactis* (HN019™) reduced BMI, total cholesterol (TC) and low density lipoprotein (LDL).^{13*} The proposed mechanism is associated with prevention of cholesterol absorption by the intestinal tract into the blood stream, by aiding the assimilation of cholesterol during bacterial multiplication and cholesterol binding, and to improve liver metabolism through increased short chain fatty acid (SCFA) production inhibiting HMG Co-A reductase.¹⁴ Mechanistically, it has been shown to reduce proinflammatory cytokines TNF-α and IL-6, which are associated with the development of obesity.¹⁵

Figure 2: Reduction in Total Cholesterol (TC) and LDL Cholesterol (LDL) with HN019™ Supplementation.



*27.2 Billion CFU daily of HN019™ equivalent to two capsules.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts, soy protein, and salt. Free from artificial colours, flavours and preservatives.



MetaBiome™ Microbiome Sampling Kit

A Comprehensive Test for Microbiome Composition and Function.

Contents: Each kit contains: 1 x activation card, sample collection tube, sampling instructions, Bristol stool chart, reply paid sleeve and envelope.

Order code: MBKIT

Storage: Store below 30°C

- Simple, non-invasive sampling performed at home and conveniently posted in the supplied reply paid envelope for assessment.
- Practitioner-centric report, emailed, with information sorted into body systems for easy interpretation.
- Report provides complete picture of gut microorganisms and their function.

Directions for use:

1. Provide patient with kit. Retain activation card with unique identifier.
2. Access activation portal at www.metabiome.com.au and follow prompts to activate the kit using the unique identifier and your patient's details.
Samples received that have not been activated cannot be processed.
3. Have your patient take the kit home and follow the step by step Sampling Instructions.
4. Receive your patient's comprehensive MetaBiome™ Practitioner Report direct to your email address.

You may also provide your patient with their MetaBiome™ Kit, via eReferral. This is a convenient way to send your Patient an email link to purchase a kit, and have it shipped directly to them via the MetaBiome™ online portal. For more information, visit www.metabiome.com.au, or contact your Area Sales Manager.

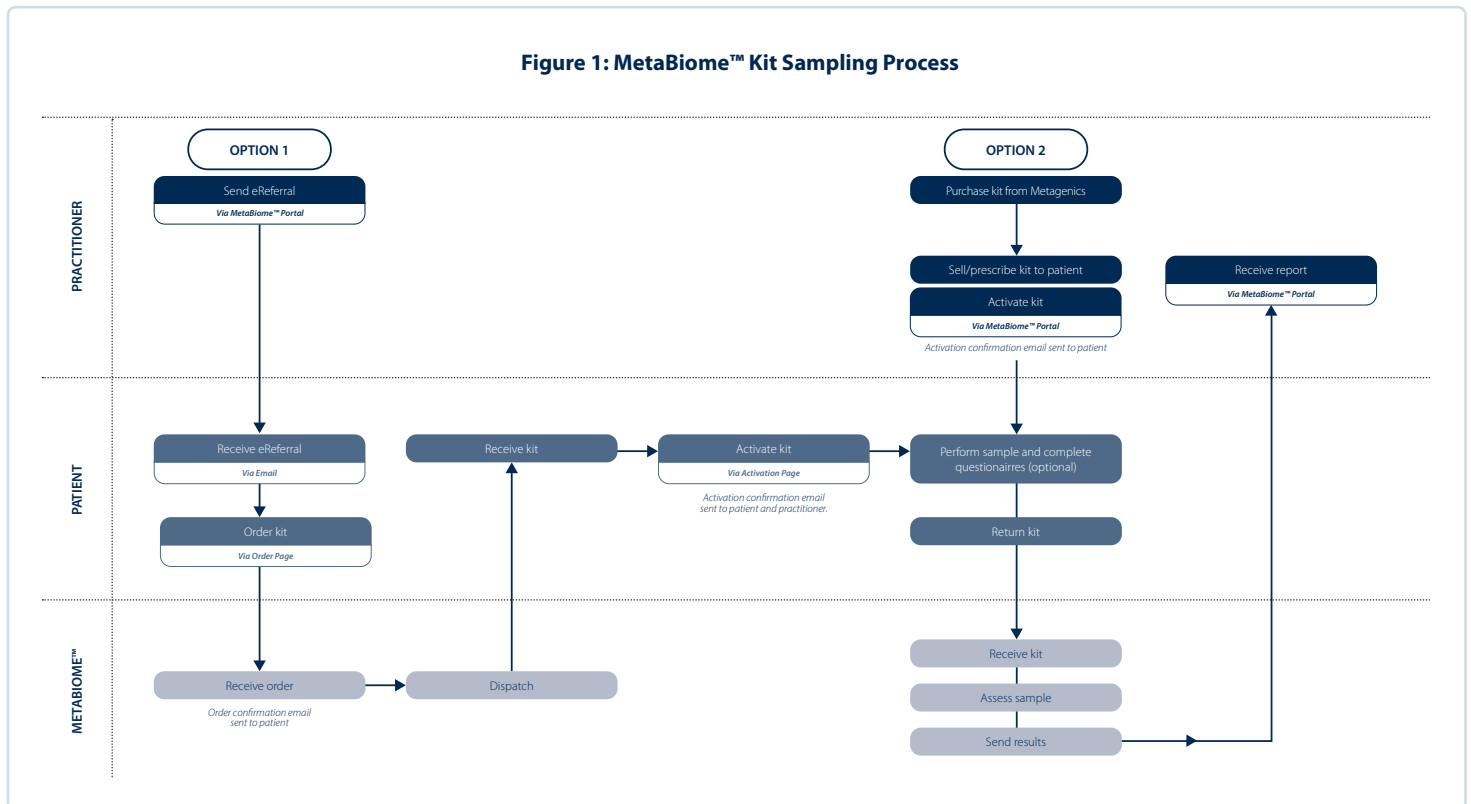
Clinical Benefits:

Metagenomic (or whole genome) sequencing of the gut microbiome. The MetaBiome™ utilises a comprehensive and up to date microbiome assessment technology, providing a complete picture of the bacteria within the gut and their functional potential. By sequencing the whole genome, the test can identify individual genes in the bacteria that may contribute to the function of that bacteria and the related influence on microbial and functional health.

From providing the kit to your patient, to receiving the comprehensive report, the MetaBiome™ test offers accuracy, simplicity and clinical application (Figure 1).

The MetaBiome™ Microbiome Sampling Kit samples an individual's gut microbiome in a non-invasive manner and for non-diagnostic purposes. For support in reviewing and interpreting the report, contact our MetaBiome™ experts in Clinical Services.

Figure 1: MetaBiome™ Kit Sampling Process

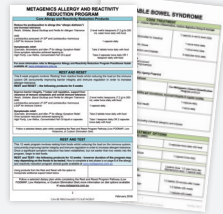


Clinical Tools and Resources

Practitioner Resources



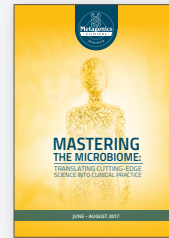
Technical Data



Protocols



Health Appraisal Questionnaire (HAQ)



Seminar Manual
Order Code: SB80



Probiotics Poster
Order Code: PCP

Available as downloadable resources from the Metagenics website.

Patient Resources



Probiotics Brochure
Order Code: BR17
(Pack of 15)



Detox Patient Booklet
Order Code: GID
(Pack of 10)



Allergy Patient Booklet
Order Code: GIA
(Pack of 10)



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Digital Tools



Your Health Guide Patient Podcast



Metagenics Clinical Podcast



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Patient Videos

Available on the Metagenics website.



Practitioner Videos

Available on the Metagenics website.



Functional Foundations Videos

Available on the Metagenics website.
















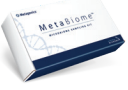


Metagenics Clinical Support Team – Phone 1800 777 648 (AUS) or 0508 277 744 (NZ)

Delivering Practitioner to Practitioner support and access an industry leading clinical team with 202 years of combined clinical experience. Available to help save you time and support your business and patient needs.

- Clinical support (i.e. treatment plans/product prescriptions/test results and interpretation/contraindications);
- Writing resources (technical/patient/digital tools);
- Education;
- Researching cases (providing information and evidence to support your research/patient treatment needs).

Probiotics and Prebiotics Range Summary

| | Product Highlights | Page | | Product Highlights | Page |
|--|---|------|---|---|------|
|  | <p>Ultra Flora Intensive Care <i>Microbiome Recovery Formula.</i></p> <ul style="list-style-type: none"> Contains the world's most widely researched probiotic strains – LGG®, SB and BB-12®. | 6 |  | <p>Ultra Flora GI Soothe <i>Specialised Probiotic to Reduce the Occurrence and Symptoms Associated with Medically Diagnosed IBS.</i></p> <ul style="list-style-type: none"> Clinically trialled <i>Lactobacillus plantarum</i> 299v strain in a total of 224 adults with IBS in multiple trials. | 13 |
|  | <p>Ultra Flora Mother and Baby <i>Specialised Probiotic Support During Pregnancy, Breastfeeding and Infancy.</i></p> <ul style="list-style-type: none"> Clinically researched probiotic strain LGG® for childhood atopy and immune development. BB-12® and LGG® for glucose metabolism. | 7 |  | <p>Ultra Flora GI Regulate <i>Specialised Probiotic and Prebiotic for Healthy Bowel Function.</i></p> <ul style="list-style-type: none"> Low reactive powder with clinically trialled <i>Lactobacillus plantarum</i> 299v combined with the prebiotic Partially Hydrolysed Guar Gum (PHGG). | 14 |
|  | <p>Ultra Flora Baby Care <i>Digestive System Health and Beneficial Intestinal Flora.</i></p> <ul style="list-style-type: none"> Reduces incidence of ear infection. Contains 3 Bifidobacteria plus LGG® | 8 |  | <p>Ultra Flora SB Dysbiosis <i>Dysbiosis Control.</i></p> <ul style="list-style-type: none"> Clinically trialled <i>Saccharomyces cerevisiae</i> (boulardii) strain in 2,271 tourists to reduce the risk of traveller's diarrhoea. | 15 |
|  | <p>Ultra Flora Kids Care <i>Probiotic for Beneficial Gut Flora, Bowel Function and Immune Health in Children.</i></p> <ul style="list-style-type: none"> Clinically trialled NCFM® and Bi-07 strains in 326 children to support immunity. | 9 |  | <p>Ultra Flora Digest <i>An Exclusive Combination for Digestive Health and to Support Beneficial Gut Bacteria.</i></p> <ul style="list-style-type: none"> Support healthy digestive function and beneficial gut bacteria. Support healthy immunity. A great tasting, rapidly dispersible source of fibre. | 15 |
|  | <p>Ultra Flora Restore <i>Maintain Digestive Health and Wellbeing.</i></p> <ul style="list-style-type: none"> Contains colostrum with 40% IgG content. Activ-Vial™ desiccant lined bottle guarantees live and effective probiotics without refrigeration. | 10 |  | <p>Ultra Flora Immune Control <i>An Exclusive Probiotic Combination for Healthy Immune System Function.</i></p> <ul style="list-style-type: none"> Clinically trialled LP-33® in 425 subjects to significantly improve symptoms of allergic rhinitis. | 16 |
|  | <p>Ultra Flora Restore Dairy Free <i>Maintain Digestive Health and Wellbeing.</i></p> <ul style="list-style-type: none"> Activ-Vial™ desiccant lined bottle guarantees live and effective probiotics without refrigeration. Available with added colostrum (Ultra Flora Restore) and powder (Ultra Flora Plus Dairy Free). | 10 |  | <p>Ultra Flora Immune Enhance <i>An Exclusive Probiotic Combination to Boost Immune System Function.</i></p> <ul style="list-style-type: none"> Clinically trialled combination (HEAL 9 and 8700:2) in 272 subjects to reduce cold and flu duration and frequency. | 16 |
|  | <p>Ultra Flora Spectrum <i>Multi-Strain Complex with Five Researched Strength, Scientifically Validated Probiotics</i></p> <ul style="list-style-type: none"> Help to maintain healthy gut function and wellbeing. Contains 52.5 billion live organisms from five probiotics at researched strengths, including <i>S. boulardii</i>. | 11 |  | <p>Ultra Flora MetaControl <i>Advanced Probiotic Combination to Shape a Beneficial Microbiome for Wellbeing.</i></p> <ul style="list-style-type: none"> Clinically trialled strains (HN019™ and B-420™) for metabolic health and weight management. | 17 |
|  | <p>Ultra Flora LGG® Forte <i>Double Strength, Researched, Authentic LGG®</i></p> <ul style="list-style-type: none"> 20 billion CFU of <i>Lactobacillus rhamnosus</i> (LGG®). Activ-Vial™ desiccant lined bottle guarantees live and effective probiotics without refrigeration. | 12 |  | <p>MetaBiome™ Microbiome Sampling Kit</p> <ul style="list-style-type: none"> A Comprehensive Test for Microbiome Composition and Function. | 18 |

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