Probiotic Introduction

# **Definitions in Gut Health**

[Probiotics](https://isappscience.org/for-consumers/learn/probiotics/) are defined as-

 “Live microorganisms that, when administered in adequate amounts, confer a health benefit to the host”.

[Prebiotics](https://isappscience.org/for-consumers/learn/prebiotics/) are complex carbohydrates such as [inulin](https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/inulin) or the shorter chain [fructooligosaccharides](https://pubmed.ncbi.nlm.nih.gov/20119826/#:~:text=Fructooligosaccharides%20(FOS)%20are%20oligosaccharides%20that,(2%2D1)%20bonds.), these molecules provide metabolic fuel for microorganisms. When a probiotic and prebiotic are combined, a [synbiotic](https://www.sciencedirect.com/topics/immunology-and-microbiology/synbiotics) is created.

Probiotic strains are defined by their genus, species and subspecies, the following are the ones [Planta Medica](https://www.plantamedica.co.uk/category/Probiotics/3204) currently stock, these are available to purchase individually or in our specific health blends.

# **Probiotic Species**

We use four probiotic genera- ***Bifidobacterium***, ***Lactobacillus***, ***Saccharomyces*** and ***Streptococcus.***

#### **Proprietary Blend**

This blend forms part of the basis of all the specific blends, this is Planta medica’s own unique mix, designed to provide a range of beneficial species.

#### **Fructooligosaccharides**

These are prebiotic and act synergistically with the probiotic species. They can provide a substrate for the fermentation of bacteria; this process leads to the formation of beneficial metabolites such as short-chain fatty acids.1 They may also enhance survival of probiotic bacteria and enhance their colonisation in the gut.

Some individuals may experience gastrointestinal discomfort, bloating, gas, or diarrhoea if consuming high doses of fructooligosaccharides particularly if they have a fructose intolerance or irritable bowel syndrome.

It is advisable to start on one capsule daily.

#### **Administration**

When taking a probiotic, the number of live bacteria you will be consuming is measured in CFUs or ‘colony forming units’, this figure will depend on several factors including the strain, the medium that strain occupies and the method of measurement.

A daily dose of between 10-20 billion CFUs is recommended for those in good health, higher doses range between 50- 100 billion and would be appropriate for those who have had a significant alteration to their microbiota through ill health or antibiotic use.

Our range contains a higher dose of 50 billion CFUs per 1 g of probiotic strain.

The probiotics are encapsulated in [HPMC](https://www.sciencedirect.com/topics/chemistry/hydroxypropyl-methylcellulose) capsules which are acid-resistant preventing degradation in the stomach. The capsules are suitable for vegetarians and vegans. We recommend 1-2 capsules daily with food.

## ***Bifidobacterium***

This is one of the major genera to be found in the gastrointestinal tract which account for 90% of the microbiota in a vaginally delivered, breast-fed infant. The genera consist of 44 species and 9 subspecies. [A 2016 review](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4908950/) identified the following potential health benefits of the genera-

* Prevention/treatment of colon cancer
* Treatment of diarrhoea
* Treat necrotising enterocolitis
* Prevent/treat Inflammatory Bowel Disease
* Colon regulatory
* Competitive exclusion
* Carbohydrate metabolism

### ***Bifidobacterium adolescentis***

[A 2020 genome analysis](https://www.nature.com/articles/s41598-020-70986-z) found Bifidobacterium adolescentis to stimulate gamma aminobutyric acid (GABA) production in the gastrointestinal tract of humans thus influencing the gut-brain axis.2 These findings suggest that Bifidobacterium adolescentis influences the production of neuroactive molecules and can be considered as a [psychobiotic](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5102282/) and as such features in our [Stress and Anxiety](https://www.plantamedica.co.uk/product/VCPBSA00260/Probiotic_Stress_%26_Anxiety_Vcap_500mg_60_count/4852) Blend at 75 mg.

### ***Bifidobacterium bifidum***

This species appears in two of our blends- [Allergy Blend](https://www.plantamedica.co.uk/product/VCPBA00260/Probiotic_Allergy_Vcap_500mg_60_count/4844) at 60 mg and [Brain Health](https://www.plantamedica.co.uk/product/VCPBBH00260/Probiotic_Brain_Health_Vcap_500mg_60_count/4845) at 60 mg, these are a key member of the microbiome contributing to the [glycobiome](https://academic.oup.com/glycob/article/31/6/664/6290551) due to a unique gene set that breaks down mucin.3

The following are some of the benefits exerted by Bifidobacterium bifidum-3

* [Syntrophic](https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/syntrophy) action- modulates microbiota homeostasis
* Antibacterial activity against Helicobacter pylori, Escherichia coli amongst others
* Immune modulation- priming of the immune response
* Anti Inflammatory- particularly for some chronic gut disorders

### ***Bifidobacterium breve***

This species is in our proprietary blend but also in the [Depression Blend](https://www.plantamedica.co.uk/product/VCPBD00260/Probiotic_Depression_Vcap_500mg_60_count/4846) at 60mg and [Vaginal Health](https://www.plantamedica.co.uk/product/VCPBVH00260/Probiotic_Vaginal_Health_Vcap_500mg_60_count/4853) Blend at 75g.

Bifidobacterium breve exerts a profound immunomodulatory effect activating neutrophils, macrophages and natural killer cells.4

[A 2015 RCT](https://www.cambridge.org/core/journals/journal-of-nutritional-science/article/oral-administration-of-bifidobacterium-breve-b3-m) found this species to modify metabolic functions in obese adults by improving liver function and exerting an anti-inflammatory effect.

### ***Bifidobacterium infantis***

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[A 2013 study](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3744517/) concluded that the immunomodulatory effects of Bifidobacterium infantis led to a reduction of systemic pro-inflammatory biomarkers indicating these effects improve non-gastrointestinal conditions.

Bifidobacterium infantis is in our proprietary blend at 10mg, also in the [Allergy Blend](https://www.plantamedica.co.uk/product/VCPBA00260/Probiotic_Allergy_Vcap_500mg_60_count/4844) at 65 mg and the [Stress and Anxiety Blend](https://www.plantamedica.co.uk/product/VCPBSA00260/Probiotic_Stress_%26_Anxiety_Vcap_500mg_60_count/4852) at 75 mg.

This species functions as a psychobiotic and has demonstrated anxiolytic and antidepressant effects by increasing brain levels of serotonin. [A 2021 review](https://www.jstage.jst.go.jp/article/ras/9/0/9_74/_html/-char/en#:~:text=infantis%20E41%20and%20B.,exposure%20to%20stress) found the results of various in vivo trials suggested potential value in psychiatry.

#### **Bifidobacterium longum**

This species is one of the most abundant members of the microbiota and protects the intestinal epithelial barrier. It produces both lactic and acetic acid in the gut and has shown benefit in the treatment of stress related IBS as documented in a [2018 study](https://www.mdpi.com/2072-6643/11/4/886).

Bifidobacterium longum is part of our proprietary blend and is included at an extra 60 mg in the [Allergy Blend](https://www.plantamedica.co.uk/product/VCPBA00260/Probiotic_Allergy_Vcap_500mg_60_count/4844), 300 mg in our [Brain Health](https://www.plantamedica.co.uk/product/VCPBBH00260/Probiotic_Brain_Health_Vcap_500mg_60_count/4845), 300 mg in the [Depression Blend](https://www.plantamedica.co.uk/product/VCPBD00260/Probiotic_Depression_Vcap_500mg_60_count/4846), 60 mg in the

 [Metabolic Syndrome Blend](https://www.plantamedica.co.uk/product/VCPBMS00260/Probiotic_Metabolic_Syndrome_Vcap_500mg_60_count/4850) and at 75 mg in the [Stress and Anxiety Blend](https://www.plantamedica.co.uk/product/VCPBSA00260/Probiotic_Stress_%26_Anxiety_Vcap_500mg_60_count/4852).

## ***Lactobacillus***

This is the largest and most diverse group, consisting of over 200 species of Lactic acid bacteria. They are characterised by an ability to produce lactic acid via glucose metabolism and are used commercially in dairy products, fermented vegetables, beverages, and sourdough bread. The amount of lactic acid produced varies between the different species.

#### **Lactobacillus acidophilus**

This is one of the most familiar, and well-studied microbiota members having first been isolated in 1900. This tough micro-organism can withstand acidic conditions and has a broad scope of use as a supplement and is the most recommended probiotic.

Benefits include-5

* Nutritional effects
* Regulates the balance of the intestinal flora -by producing lactic acid and reducing PH in the gut limiting growth of pathogenic species
* Enhances immunity
* Age-delaying
* Anti-cancer- limits the growth of pathogenic bacteria that produce carcinogens
* Cholesterol reducing
* Adheres to colon cells
* Antibiotic properties
* Improves lactose intolerance

Unsurprisingly, this valuable species appears in several of our blends, namely- [Brain Health](https://www.plantamedica.co.uk/product/VCPBBH00260/Probiotic_Brain_Health_Vcap_500mg_60_count/4845), [Depression](https://www.plantamedica.co.uk/product/VCPBD00260/Probiotic_Depression_Vcap_500mg_60_count/4846), [Gut Health](https://www.plantamedica.co.uk/product/VCPBGH00260/Probiotic_Gut_Health_Vcap_500mg_60_count/4847), [Metabolic Syndrome](https://www.plantamedica.co.uk/product/VCPBMS00260/Probiotic_Metabolic_Syndrome_Vcap_500mg_60_count/4850), [Muscle and Joint](https://www.plantamedica.co.uk/product/VCPBMJ00260/Probiotic_Muscle_%26_Joint_Vcap_500mg_60_count/4849) and [Vaginal Health](https://www.plantamedica.co.uk/product/VCPBVH00260/Probiotic_Vaginal_Health_Vcap_500mg_60_count/4853).

#### **Lactobacillus brevis**

This species as discussed in a [2021 Review](https://www.frontiersin.org/articles/10.3389/fnut.2021.693412/full) has benefits for the following-

* Hypercholesterolemia
* Atherosclerosis
* Obesity
* Hypertension

This species is not currently in any of our blends but is available to purchase.

#### **Lactobacillus bulgaricus**

The species is associated with the famous Bulgarian yoghurt, as well as yoghurt production it is used to sour milk as it’s lactic acid production decreases PH values and causes milk protein to coagulate.

It demonstrates the following benefits-

* Digestive health benefits
* Anti inflammatory
* Immunomodulatory
* Food safety applications
* Infection control

Available to buy as a single strain or combined to your specification.

#### **Lactobacillus casei**

First identified in 1971, this strain produces anti-microbial substances including bacteriocins which enhance the epithelial barrier, are tough at withstanding stressors and scavenge ROS.

Benefits-6

* Anti- allergy
* Anti-obesity
* Anti-cancer

In our Proprietary Blend at 10mg, [Brain Health](https://www.plantamedica.co.uk/product/VCPBBH00260/Probiotic_Brain_Health_Vcap_500mg_60_count/4845) at 60mg, [Gut Health](https://www.plantamedica.co.uk/product/VCPBGH00260/Probiotic_Gut_Health_Vcap_500mg_60_count/4847) 100mg, [Immune Heath](https://www.plantamedica.co.uk/product/VCPBI00260/Probiotic_Immune_Vcap_500mg_60_count/4848) at 60 mg and [Muscle and Joint blend](https://www.plantamedica.co.uk/product/VCPBMJ00260/Probiotic_Muscle_%26_Joint_Vcap_500mg_60_count/4849) at 100mg.

#### **Lactobacillus fermentum**

Another species widely used in the food industry as a preservative, also having immunomodulatory effects and specific application for gastrointestinal and respiratory infections. Fermentum produces diverse and potent antimicrobial peptides used as food preservatives or as antibiotic alternatives.7

It acts to decrease cholesterol in the blood stream, can reduce liver disease and offers some protection against cancer.

Currently available to buy as a single strain or combined in a blend to your specification.

#### **Lactobacillus paracasei**

As with many in this genera, Lactobacillus paracasei is immune boosting, cholesterol lowering with anti-obesity activity. It has specific benefits for yeast infections and urinary tract infections.

Lactobacillus is in our proprietary blend at 10mg, [Oral Health blend](https://www.plantamedica.co.uk/product/VCPBOH00260/Probiotic_Oral_Health_Vcap_500mg_60_count/4851) at 75mg, Metabolic Syndrome blend at 60mg, [Immune Blend](https://www.plantamedica.co.uk/product/VCPBI00260/Probiotic_Immune_Vcap_500mg_60_count/4848) at 60mg and the [Allergy blend](https://www.plantamedica.co.uk/product/VCPBA00260/Probiotic_Allergy_Vcap_500mg_60_count/4844) at 60mg.

#### **Lactobacillus plantarum**

Also used in the food industry as a ‘starter’ probiotic, Lactobacillus plantarum has the following benefits-8

* Antioxidant
* Anti-cancer
* Anti inflammatory
* Anti proliferative
* Anti-obesity
* Anti diabetic

This species is in the proprietary blend at 10mg, [Stress and Anxiety blend](https://www.plantamedica.co.uk/product/VCPBSA00260/Probiotic_Stress_%26_Anxiety_Vcap_500mg_60_count/4852) at 75mg,

[Metabolic Syndrome blend](https://www.plantamedica.co.uk/product/VCPBMS00260/Probiotic_Metabolic_Syndrome_Vcap_500mg_60_count/4850) at 60mg, [Immune blend](https://www.plantamedica.co.uk/product/VCPBI00260/Probiotic_Immune_Vcap_500mg_60_count/4848) at 60mg, [Depression blend](https://www.plantamedica.co.uk/product/VCPBD00260/Probiotic_Depression_Vcap_500mg_60_count/4846) at 60mg and the [Brain Health blend](https://www.plantamedica.co.uk/product/VCPBBH00260/Probiotic_Brain_Health_Vcap_500mg_60_count/4845) at 60mg.

#### **Lactobacillus reuteri**

This species is found in the gastrointestinal tract, urinary tract, on the skin and in breast milk.9 It amounts vary greatly between individuals. Lactobacillus reuteri can produce antimicrobial molecules and inhibits the colonisation of pathogenic microbes. Further benefits may include-9

* Immune enhancing – reducing pro-inflammatory cytokines
* Strengthens intestinal barriers
* Reduces inflammation by decreasing translocation from gut lumen tissue

Lactobacillus reuteri is in the proprietary at 10mg and [Immune blend](https://www.plantamedica.co.uk/product/VCPBI00260/Probiotic_Immune_Vcap_500mg_60_count/4848) at 60mg.

#### **Lactobacillus rhamnosu**s

Another widely used strain with the following potential benefits-10 11

* Prevention and treatment of gastrointestinal infections
* Reduces allergic response
* Prevents atopic dermatitis
* Improves IBS symptoms
* Protects against urinary tract infections

Available to purchase as a single strain or in combination for a bespoke blend.

#### **Lactobacillus salivarius**

As the name suggests, this species in indicated for oral health promotion being the most prevalent species in human saliva and is in our [Oral Health](https://www.plantamedica.co.uk/product/VCPBOH00260/Probiotic_Oral_Health_Vcap_500mg_60_count/4851) blend at 75mg. Asides from a role in maintaining oral health, helping with halitosis, this species aids in the prevention of chronic diseases, cancer and asthma.12

## ***Saccharomyces***

This genus are fungi and include many species of yeast, the name comes from the Greek and translates as ‘sugar fungus’. Saccharomyces use enzymes which convert sugar into carbon dioxide and alcohol (think of Elderflower champagne!).

These yeasts are used widely in the manufacture of baked goods, beer, wine, distilled spirits, and industrial spirits.

#### **Saccharomyces boulardi**

Saccharomyces boulardi is the only species in this genera we currently stock and it can be found in our proprietary blend at 10mg and in our [Gut Health blend](https://www.plantamedica.co.uk/product/VCPBGH00260/Probiotic_Gut_Health_Vcap_500mg_60_count/4847) at 100mg.

This species is suggested as an excellent treatment for gastrointestinal diseases including-13

* Heliobacter pyloric infections and the side effects of their treatments
* Adult diarrhoea
* Inflammatory Bowel Disease
* Travellers’ diarrhoea
* HIV induced diarrhoea

## ***Streptococcus***

These members of normal flora are spheroidal bacteria, the name means ‘twisted berry’ and relates to the appearance of the group which is chain-like, resembling a string of beads.

Some of the species cause disease in humans and animals, whereas others are important in the manufacture off fermented products.

Group A Streptococcus bacteria can cause –

* Rheumatic fever
* Impetigo
* Scarlett Fever
* Puerperal Fever
* Toxic Shock Syndrome
* Strep Throat
* Tonsilitis
* Necrotizing fasciitis

Group B Streptococcus cause-

* Sepsis
* Meningitis
* Pneumonia

Some of the lactic species of streptococcus are used commercially as starters in the production of butter, buttermilk, and certain cheeses.

#### **Streptococcus salivarius**

Featuring in our proprietary blend at 10mg and in the [Oral Health blend](https://www.plantamedica.co.uk/product/VCPBOH00260/Probiotic_Oral_Health_Vcap_500mg_60_count/4851) at 75mg. This is one of three genetically similar species that are commensal organisms that occasionally cause opportunistic infections.14

This species can compete with Streptococcus pyogenes which if allowed to flourish can cause bacterial pharyngeal infection.15

#### **Streptococcus thermophilus**

This is a sub-species of Streptococcus salivarius which is used as a starter culture in the dairy industry. The use of this sub-species as a probiotic is regarded as secondary to its food value, there does appear to be a lack of research into its use as a sole probiotic.

Some potential benefits include-16

* Reducing bouts of acute diarrhoea (particularly in babies)
* Enhancing kidney dialysis treatment
* Improving skin health
* Improved digestion
* Strengthening to immune system

This sub-species is not currently in any blends but available to buy.

# Our Specific Blends

## [Allergy Blend](https://www.plantamedica.co.uk/product/VCPBA00260/Probiotic_Allergy_Vcap_500mg_60_count/4844)

### *Bifidobacterium longum 60mg*

### *Bifidobacterium bifidum 60mg*

### *Lactobacillus paracasei 60mg*

### *Lactobacillus rhamnosus 60mg*

### *Bifidobacterium infantis 60mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

Bifidobacterium longum has been shown to reduce allergic reactivity by assisting with the neutralisation of high 1gE levels found in those suffering allergic reactions.17

Combining species appears to confer more benefits, Bifidobacterium longum and bifidum were shown in a [2017 RCT](https://pubmed.ncbi.nlm.nih.gov/28228426/) to improve the quality of life amongst allergy sufferers by increasing levels of regulatory T cells.18

Lactobacillus paracasei has been found to aid in the mitigation of respiratory tract allergies in vivo.19

A relative lack of Lactobacillus rhamnosus in the faecal matter of very young infants seems to be associated with the development of allergies and probiotic intervention with lactobacilli show immunomodulatory effects in allergy sufferers. 20

Bifidobacterium infantis is another important species, particularly in infants as it can digest the carbohydrates in human milk to aid establishment of a healthy microbiota. It can influence the regulatory immune cells by reducing pro-inflammatory cytokines and increasing the anti-inflammatory ones.22

## [Brain Health Blend](https://www.plantamedica.co.uk/product/VCPBBH00260/Probiotic_Brain_Health_Vcap_500mg_60_count/4845)

### *Bifidobacterium longum 60mg*

### *Bifidobacterium bifidum 60mg*

### *Lactobacillus casei 60mg*

### *Lactobacillus acidophilus 60mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

Bifidobacterium longum has demonstrated in trials on healthy volunteers an ability to decrease cortisol levels in relation to stress.22 It can contribute to enhanced vitality and reduced fatigue.

Both Bifidobacterium species included have the potential to improve cognition and memory by reducing neuroinflammatory responses which may offer benefits for neurodegenerative disorders such as Alzheimer’s.24

Lactobacillus species have been shown to enhance brain function via the vagus nerve.25

## [Depression Blend](https://www.plantamedica.co.uk/product/VCPBD00260/Probiotic_Depression_Vcap_500mg_60_count/4846)

### *Bifidobacterium longum 60mg*

### *Bifidobacterium breve 60mg*

### *Lactobacillus acidophilus 60mg*

### *Lactobacillus rhamnosus 60mg*

### *Lactobacillus plantarum 60mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

Bifidobacterium and Lactobacillus genera have both been found to help prevent and treat depression.26 The gut microbiota of the depressed patient is often disordered and by targeting the regulation of this the following benefits are considered likely-26

* Reduction of inflammation contributing to depression
* Regulation of tryptophan metabolism
* Regulation of 5-hydroxytryptamine synthesis
* Regulation of hypothalamic-pituitary-adrenal axis (HPA)

## [Gut Health Blend](https://www.plantamedica.co.uk/product/VCPBGH00260/Probiotic_Gut_Health_Vcap_500mg_60_count/4847)

### *Lactobacillus acidophilus 100mg*

### *Lactobacillus casei 100mg*

### *Saccharomyces boulardii 100mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

A high dose blend for general gut health improvement aiming to give the following benefits-

* Modulating the composition of the gut microbiota
* Enhancing the intestinal barrier function
* Producing beneficial metabolites
* Modulating the immune system

## [Immune Health Blend](https://www.plantamedica.co.uk/product/VCPBI00260/Probiotic_Immune_Vcap_500mg_60_count/4848)

### *Lactobacillus reuterii 60mg*

### *Lactobacillus casei 60mg*

### *Lactobacillus plantarum 60mg*

### *Lactobacillus paracasei 60mg*

### *Lactobacillus rhamnosus 60mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

This blend consists entirely of Lactobacilli which have demonstrated an ability to interact with mucosal immune cells and epithelial cells lining the mucosa to modulate specific functions of the mucosal immune system.

Lactobacilli can elicit innate and adaptive immune responses in the host.27

## [Metabolic Syndrome Blend](https://www.plantamedica.co.uk/product/VCPBMS00260/Probiotic_Metabolic_Syndrome_Vcap_500mg_60_count/4850)

### *Lactobacillus acidophilus 60mg*

### *Lactobacillus rhamnosus 60mg*

### *Lactobacillus paracasei 60mg*

### *Lactobacillus plantarum 60mg*

### *Bifidobacterium longum 60mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

[Metabolic syndrome](https://www.nhs.uk/conditions/metabolic-syndrome/) affects 1 in 3 of UK adults aged 50 and over and is the term for a combination of diabetes, hypertension and obesity which can lead to damaged blood vessels and a higher risk of coronary heart disease and stroke.

Diagnosis is made from the following findings-

* Being overweight or having too much fat around the waistline
* High triglyceride levels and low HDL (good cholesterol) levels
* High blood pressure
* Insulin resistance

Gut microbiota exert a significant role in the pathogenesis of metabolic syndrome, this has been confirmed by multiple human studies.28 Intestinal translocation of bacterial fragments can lead to metabolic endotoxemia, bacterial fragments pass through the gut barrier and into the bloodstream leading to systemic inflammation.

Low grade systemic inflammation contributes to the development of some of the features of metabolic syndrome.

The benefits of probiotic in the prevention and management of metabolic syndrome include-28

* Anti-obesity effects-particularly Lactobacilli and Bifidobacterium longum
* Improving glycaemic control via decreasing serum glucose levels- particularly associated with Lactobacillus.
* Modulate serum lipids particularly Lactobacillus plantarum
* Anti inflammatory action systemically

## [Muscle and Joint Blend](https://www.plantamedica.co.uk/product/VCPBMJ00260/Probiotic_Muscle_%26_Joint_Vcap_500mg_60_count/4849)

### *Lactobacillus acidophilus 100mg*

### *Lactobacillus rhamnosus 100mg*

### *Lactobacillus casei 100mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

Evidence suggests that microbiota composition and diversity impact on skeletal muscle metabolism and functionality.29

The general anti-inflammatory action of probiotics supports muscle and joint health and function. Clinical trials have demonstrated that probiotics can support bone metabolism, decrease pain and inflammation in age-related musculoskeletal disorders. 30

## [Oral Health Blend](https://www.plantamedica.co.uk/product/VCPBOH00260/Probiotic_Oral_Health_Vcap_500mg_60_count/4851)

### *Streptococcus salivarius 75mg*

### *Lactobacillus salivarius 75mg*

### *Lactobacillus reuterii 75mg*

### *Lactobacillus paracasei 75mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

Probiotics have similar effects in the oral cavity as they do in the gut-31

* Normalisation of microbiota
* Modulation of the immune system
* Metabolic effects
* Competitive with pathogenic bacteria for sites and nutrients
* Reduce tissue inflammation and destruction

The following oral health concerns may benefit from probiotic therapy-31

* Caries and associated microbes
* Gingivitis
* Periodontitis
* Oral candida
* Halitosis

## [Stress and Anxiety Blend](https://www.plantamedica.co.uk/product/VCPBSA00260/Probiotic_Stress_%26_Anxiety_Vcap_500mg_60_count/4852)

### *Bifidobacterium longum 75mg*

### *Lactobacillus plantarum 75mg*

### *Bifidobacterium adolescentis 75mg*

### *Bifidobacterium infantis 75mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

Probiotics have demonstrated alleviation of stress and anxiety in studies via modulation of the neuroactive potential of the microbiota.32 Stress and anxiety often relate to gut dysbiosis and in this study Lactobacillus plantarum was found to improve stress and anxiety.

[A 2020 Review](https://nutrition.bmj.com/content/early/2020/06/09/bmjnph-2019-000053) of several studies highlighted the ‘bidirectional relationship’ between the brain and digestive tract, concluding that the studies demonstrated significant improvements to (in this case) depressive and anxiety states by administering both pre and probiotic supplements.

## [Vaginal Health Blend](https://www.plantamedica.co.uk/product/VCPBVH00260/Probiotic_Vaginal_Health_Vcap_500mg_60_count/4853)

### *Lactobacillus reuterii 75mg*

### *Lactobacillus acidophilus 75mg*

### *Bifidobacterium breve 75mg*

### *Lactobacillus rhamnosus 75mg*

### *Proprietary Blend 100mg*

### *Fructooligosaccharides 100mg*

Lactobacilli are the most abundant microorganism in the vagina and relate to the vaginal mucosal barrier, they adhere to vaginal epithelial cells and compete with pathogens.

Lactobacilli produce bacteriocins and hydrogen peroxide that inhibit pathogen growth and help maintain a low PH environment.33

Overall probiotics have been shown to maintain the stability of the vaginal microenvironment, improving immune defence, and even blocking the progress of cervical cancer cells.33

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