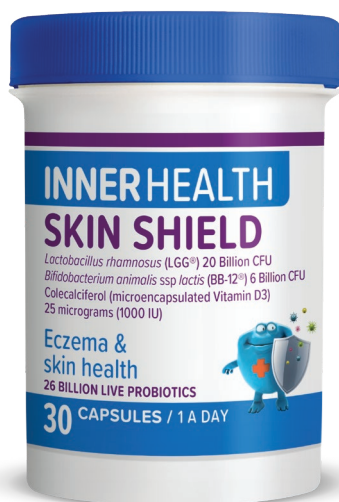




IMMUNE HEALTH



SKIN SHIELD

- ✓ Triple action for skin healing, regeneration and repair
- ✓ Relieve and reduce occurrence of acne, eczema and dermatitis symptoms
- ✓ Internal treatment to address atopic immuno-inflammatory drivers of inflammatory skin conditions

FORMULATION DETAILS:

Each capsule contains an exclusive probiotic blend:

<i>Lactobacillus rhamnosus</i> (LGG®)	20 Billion CFU
<i>Bifidobacterium animalis ssp lactis</i> (BB-12®)	6 Billion CFU
Cholecalciferol (Microencapsulated* Vitamin D)	25µg (1000IU)

LGG® & BB-12® are registered trademark of Chr. Hansen A/S

*Microencapsulation is a process which coats the ingredient particles and prevents an interaction between ingredients.

CLINICAL FOCUS

- Supports skin health.
- Reduces skin irritation.
- Helps reduce occurrences of acne symptoms.*
- Reduces symptoms of mild eczema.^

*When sun exposure is inadequate.

^In children.

KEY ACTION

- Support skin health.

KEY FORMULA FEATURES:

- **LGG® and BB-12®** modulate the immune system to reduce inflammatory response.
- **LGG® and BB-12®** supports the integrity of the gastrointestinal system to modulate immune responses.
- **Vitamin D** supports a healthy microbiome.

PROFESSIONAL PRESCRIBING GUIDELINES:

Dosage & Directions

Adults: 1 capsule daily.

Children: Empty the contents of 1 capsule, as a powder, once daily mixed with water, milk or formula for mild eczema symptoms.

Cautions & Contraindications

Infants from 0-12 months should not exceed the upper limit (UL) of 25 µg (1000 IU) of **vitamin D** per day. Children aged 1-18 years should not exceed the UL of 80 µg (3200 IU) per day¹; however, much higher doses are often needed for the short-term treatment of **vitamin D** deficiency. Some research shows that giving **vitamin D** 14,000 IU/week for a year in children aged 10-17 is safe^{2,3}; though intakes of 2000 – 3000 IU per day may cause toxicity symptoms in some children, as may doses of 1000 IU / day in hypersensitive infants.⁴

Not recommended for use in children under 4 months of age, unless advised by a healthcare professional.

Contraindications

Calcipotriene: Calcipotriene is a **vitamin D** analogue used topically for psoriasis. It can be absorbed in sufficient amounts to cause systemic effects, including hypercalcemia. Theoretically, combining calcipotriene with **vitamin D** supplements might increase the risk of hypercalcemia. Avoid concurrent use.⁵

Calcitriol: Calcitriol is a **vitamin D** analogue and when used in conjunction with **vitamin D** supplements may have an additive effect and increase risk of **vitamin D** toxicity and hypercalcemia. Avoid concurrent use.⁶

Pregnancy: Likely safe. While there is evidence to support the use of these ingredients during pregnancy,^{8,9,10,11,12,13} and a review did not identify concerns for use, Practitioner discretion is advised.

Breastfeeding: Appropriate for use.^{14,15,16,17,18}

No added: Artificial flavouring, colouring or preservatives.

Free from: Gluten, wheat, dairy, lactose, cereals, eggs, soy, nuts.

If symptoms persist, talk to your health professional.

HCP COUNSELLING QUESTIONS

I used to take Inner Health Eczema Shield, is this product the same?

The Inner Health Skin Shield formula has been upgraded to include **vitamin D** and **BB-12®** to broaden the benefits to other adult skin conditions including acne and dermatitis.

I'm already taking a probiotic. Why should I take Inner Health Skin Shield instead?

Probiotic formulas contain different strains of bacteria and it is important to take the one that contains specific strains for the individual's needs. Inner Health Skin Shield contains **LGG®**, **BB-12®** and **vitamin D**, which have been shown in clinical trials to support skin health and reduce symptoms of irritable skin conditions.

Do I need to take Inner Health Skin Shield on an empty stomach?

No, Inner Health Skin Shield can be taken on a full or empty stomach.

Is Inner Health Skin Shield suitable for vegans?

No, Inner Health Skin Shield contains animal products and so is not suitable for those who choose a vegan diet.

I am pregnant and want to reduce the likelihood my baby will get eczema. Should I take Inner Health Skin Shield while I am pregnant?

LGG® has been clinically trialled in pregnant women to reduce eczema incidence in children. Consider instead taking Inner Health Pregnancy & Breastfeeding, which has been specifically formulated to provide this benefit plus additional benefits to maternal health.

CLINICAL FEATURES

Incidence of Skin conditions in Australia and New Zealand

Conditions presenting with skin irritability are not uncommon. Australia and New Zealand have some of the highest incidences of eczema in the world^{19,20} with 10% of children with eczema continuing to experience the condition into adulthood.²¹ Acne also has a high prevalence, particularly in adolescents,^{22,23} though still highly occurring in adults.²⁴

The aetiology of such inflammatory conditions can be multifactorial (Figure 1)²⁵, with dysbiosis of the skin and gut microbiome being one causative factor.^{26,27,28} For this reason, specific probiotics may be used to support gut health, and ultimately, skin health.

Vitamin D status is also something to consider when addressing skin health, particularly irritated conditions. Inadequate **vitamin D** is related to a variety of skin conditions that present with irritated skin, including psoriasis, acne,²⁹ eczema.^{30,31}

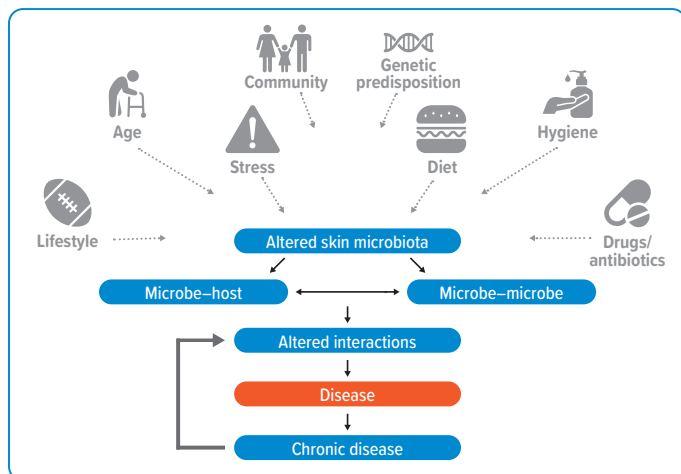


Figure 1: Factors that can contribute to inflammatory conditions.

The Microbiome and the Immune System

The microbiome is essential for the development and ongoing modulation of immune responses,³² signalling Toll like receptors in the intestinal epithelium, as well as in the skin itself,³³ and balancing between T helper 1 (Th1) and T helper 2 (Th2) responses, and in this way, the composition of the gut microbiota can impact atopic, autoimmune and inflammatory conditions.

Specific strains of probiotics may be used to support the induction of T regulatory cells, in turn supporting the balance of Th1 and Th2 pathways,³⁴ as well as provide additional anti-inflammatory support via the stimulation of immunoglobulin A (IgA) production³⁵ and suppression of immunoglobulin E (IgE).³⁶

Supporting Gut Integrity

Gut barrier integrity is important to protect against bacterial translocation and prevent immune dysregulation.³⁷ The integrity of the intestinal barrier depends on a complex of proteins that make up intercellular junctions, including tight junctions (TJs). Disruption of TJs by proinflammatory factors elevates TJ permeability,³⁸ thus increasing the likelihood of a systemic cycle of immune activation and inflammation,³⁹ as antigens, food, and microbes cross the mucosal barrier.⁴⁰

LGG® and BB-12® Regulate Immune Responses

The range of LGG® immune-regulating mechanisms is extensive; LGG® increases anti-inflammatory cytokines interleukin 10 (IL-10),⁴¹ and transforming growth factor beta,⁴² and down-regulates inflammatory cytokines tumour necrosis factor alpha (TNF-α), IL-6, and interferon gamma (IFN-γ), thus promoting Th1/Th2 balance.⁴³ LGG® has also been shown to increase IgA levels,⁴⁴ as well as decrease circulating levels of IgE.⁴⁵

In addition to this, BB-12® plays an important role in modulating the intestinal immune system. Studies have shown BB-12® to induce maturation of dendritic cells and increase IL-10, whilst lowering IL-1β, IL-6, IL-12, TNF-α and IFN-γ, supporting healthy immune activity.⁴⁶

LGG® and BB-12® Support Gut Integrity

Human trials have demonstrated the ability of LGG® to reduce intestinal permeability^{47,48} and an in vitro study investigating the effects of BB-12® on TJs found that supplementation significantly enhanced their integrity.⁴⁹ This is because LGG® and BB-12® can increase the formation of short-chain fatty acids (SCFAs)⁵⁰ to supply energy to enterocytes and support gut barrier integrity via the preservation of transepithelial resistance (TER) and integral proteins in the intercellular junctions. These points support the role of strain-specific probiotics in enhancing intestinal barrier function.⁵¹

LGG®, BB-12® and Vitamin D to Support a Healthy Microbiome

LGG® promotes the growth and biodiversity of *bifidobacterium*⁵² and *lactobacillus/enterococcus*,^{53,54} therefore increasing microbial diversity to support SCFA production, mucosal barrier function⁵⁵ and lower incidence of inflammation. BB-12® supplementation in infants has been shown to increase levels of *bifidobacteria*⁵⁶ that cross-feed other important commensal species within the gut.⁵⁷ Further, two *in vitro* studies have also highlighted the positive effect of BB-12® on pathogen inhibition.

Research has shown that the composition and function of the gut microbiome is dependent on **vitamin D** status, and conversely, the presence of an unhealthy microbiome can predispose an individual to **vitamin D** deficiency.⁵⁸ **Vitamin D** and **vitamin D** receptors (VDRs) regulate host-bacterial interactions and innate immune responses of the gut microbiota^{59,60} to help control dysbiosis,⁶¹ and inhibit inflammation.⁶²

Research from the Australian Bureau of Statistics has shown incidence of **vitamin D** deficiency can be as high as 49% of the population across all age groups.⁶³ Given the link between **vitamin D** and gut microbiome health, supplementing with **vitamin D** makes sense.

Table 1: Key evidence to support the use of probiotics and vitamin D for skin health

Study	Population Studied	Ingredient	Duration	Equivalent Daily Dose	Outcome
Miyazawa et al. 2018 ⁶⁴	Randomized, double-blind, placebo-controlled study. 96 healthy adults (22 males, 74 females, aged 20 to 59 years old) from Japan with a tendency of dry skin.	LGG®	4 weeks	14 billion live bacteria	Hydration was higher in the LGG® group than in the placebo group (P<0.01). After week 4 in the LGG® group, the trans-epidermal water loss (TEWL) was lower than baseline. A questionnaire indicated further improvements in the LGG® group compared to the placebo group (Skin is firm - P<0.05; less pimples/breakouts - P<0.01; Skin has a fine texture - P<0.05).
Matsumoto et al. 2014 ⁶⁵	44 Japanese men and women with eczema (24 men, 20 women, average age 33.8 years old).	BB-12®	8 weeks	6 billion live bacteria	Symptoms of eczema, specifically itching, improved significantly in probiotic group versus placebo group (P<0.05), at both 4 weeks and 8 weeks.
Camargo et al. 2014 ⁶⁶	Randomised, double-blind, placebo-controlled, trial of 107 children aged 2-17 years with atopic eczema that worsens in winter.	Vitamin D	1 month	1000IU	Eczema Area and Severity Index (EASI) score for children receiving vitamin D was decreased significantly more than scores of those receiving placebo (P=0.01).
Lim S-K et al. 2016 ⁶⁷	Case-control study combined with randomised controlled trial. Vitamin D levels assessed in 160 participants (acne n=80, control n=80). 39 participants assessed as deficient were then randomised to be supplemented with vitamin D (n=20), or placebo (n=19).	Vitamin D	2 months	1000IU	The prevalence of vitamin D deficiency was higher in patients compared to controls (P=0.019). The level of vitamin D was inversely associated with the severity of acne, and there was a significant negative correlation with inflammatory lesions (P<0.001). Improvement in inflammatory lesions was noted after supplementation (P<0.05).

References

Available at metagenicspharmacyacademy.com.au