

BioGaia Prodentis®

The natural final step in oral care

The world's
most studied
probiotic for
oral health



BioGaia®
Supporting your invisible heroes





Restoring protection – the natural final step in daily oral care

A balanced oral microbiota provides natural protection to the mouth. The presence of pathogenic bacteria, and lack of health-promoting bacteria is the most common cause for a deteriorating oral health. This leads to a multitude of oral disorders such as caries, gingivitis, bad breath and increases the risk of periodontal disease. While brushing and flossing helps with protection, it cannot fully help with reviving this balance.

That's why it's a good idea to add a natural and final step to complete the daily oral care routine – the addition of health-promoting bacteria.

BioGaia Prodentis® is the world's most studied probiotic for oral health, developed to bring balance back to the oral microbiota and increase natural protection, every day.

The oral microbiota

The oral microbiota is the second largest microbial community of the human body after the gut. It consists mainly of bacteria, which live and thrive in the oral biofilm.

The majority of the bacteria are commensals, which can act on our immune system to induce protective responses that prevent colonisation and invasion by pathogens.

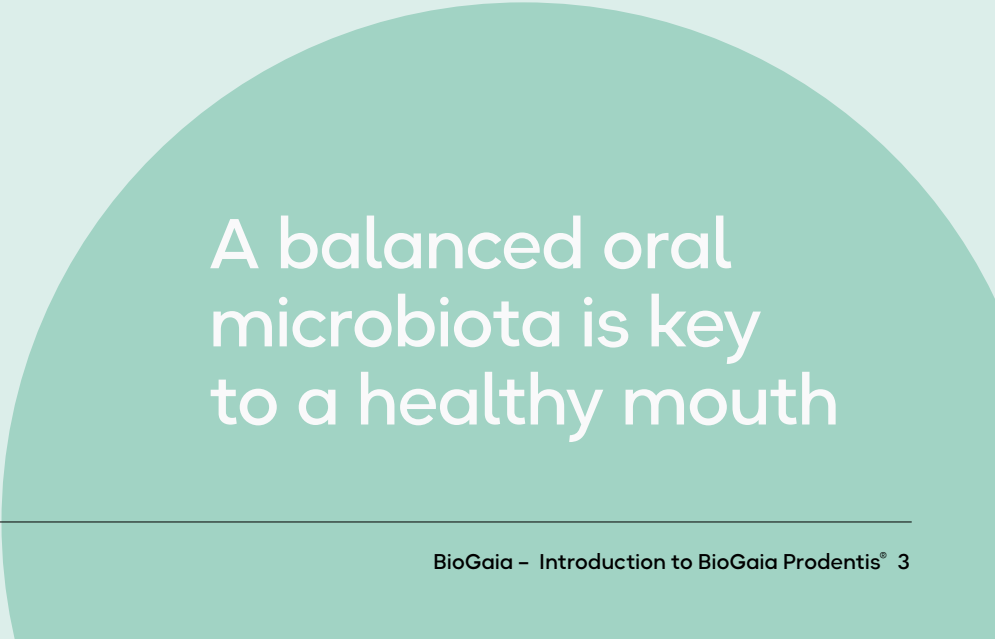
A small proportion are pathogens associated with periodontal disease, such as *Aggregatibacter actinomycetemcomitans* and *Porphyromonas gingivalis*.

In a healthy mouth, the good bacteria can keep the pathogens in check.

Imbalance causes problems

Several factors can cause imbalance in the oral microbiota, for example high sugar consumption, tobacco use, alcohol use and poor oral hygiene.

Such imbalance, called dysbiosis, allows the pathogenic bacteria to thrive, leading to inflammation and an increased risk of periodontal disease.



A balanced oral
microbiota is key
to a healthy mouth

BioGaia Prodentis® – natural protection

BioGaia Prodentis® contains probiotics that balance the oral microbiota and thus provide a natural protection against problems in the mouth. Prodentis® is safe for daily intake and long-term use.

BioGaia Prodentis® is clinically proven to:

- Reduce gingivitis^{1,2}
- Improve the results of professional cleaning in patients with periodontitis^{3,4}
- Improve clinical parameters in patients with dental implants⁵



Most clinically studied probiotic for oral health

60 clinical studies
2000 participants

Trustworthy probiotics

BioGaia's probiotic products with *Limosilactobacillus reuteri* (*L. reuteri*) is the world's most studied probiotic for oral health.

L. reuteri Prodentis® is of human origin and one of the few bacterial species that has co-evolved with humans since the beginning of time.



A true probiotic

At BioGaia we take quality very seriously. Both consumer products and clinical trial material undergo rigorous analyses to always guarantee the highest quality. Our package material is carefully selected to maintain the integrity of our bacterial strains, to make sure to deliver on the promise of specific CFU level end of shelf life.

BioGaia Prodentis® fulfill both ISAPP's checklist of smart probiotic selection and IPA's criteria to qualify microorganisms as "probiotic" in foods and dietary supplements.

- It's backed by science
- It provides an effective dose
- It provides the benefit I'm seeking
- It is safe for me
- It is labeled properly



How BioGaia Prodentis® works

The mode of action of BioGaia Prodentis® is well investigated and has been studied in both preclinical models and clinical studies.

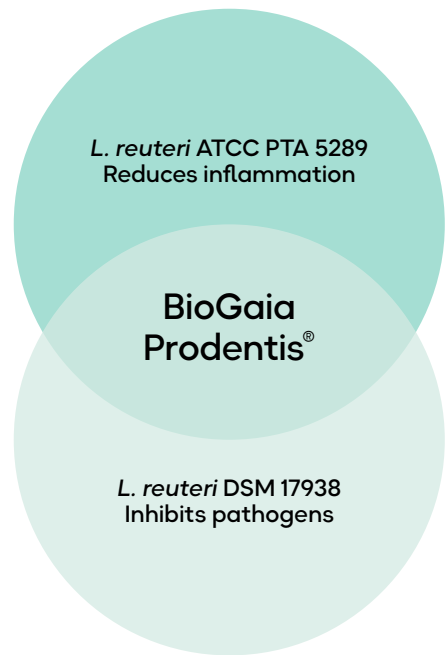
Two unique strains with complementary effects

***L. reuteri* ATCC PTA 5289**

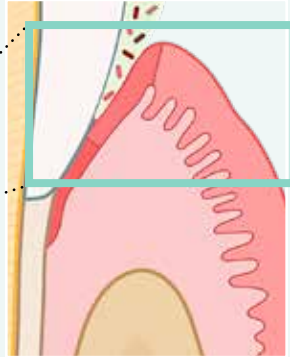
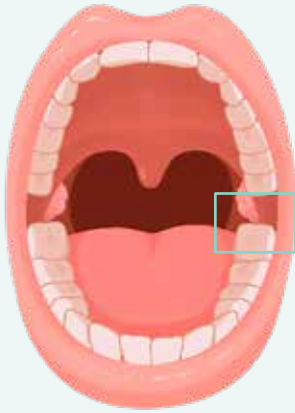
- Human oral strain specifically selected for its ability to reduce inflammation by inhibiting $\text{TNF-}\alpha^{6,7}$

***L. reuteri* DSM 17938**

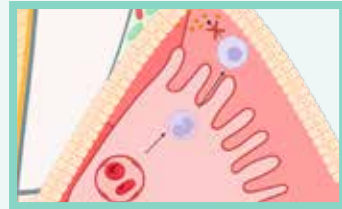
- Human strain selected for its efficient production of the antimicrobial substance reuterin⁶



Mode of action



1. Adherence and competitive exclusion
Both strains  form biofilms and adhere to oral surfaces⁶



2. Reduction of inflammation
L. reuteri ATCC PTA 5289 inhibits $\text{TNF-}\alpha$ ^{6,7} 



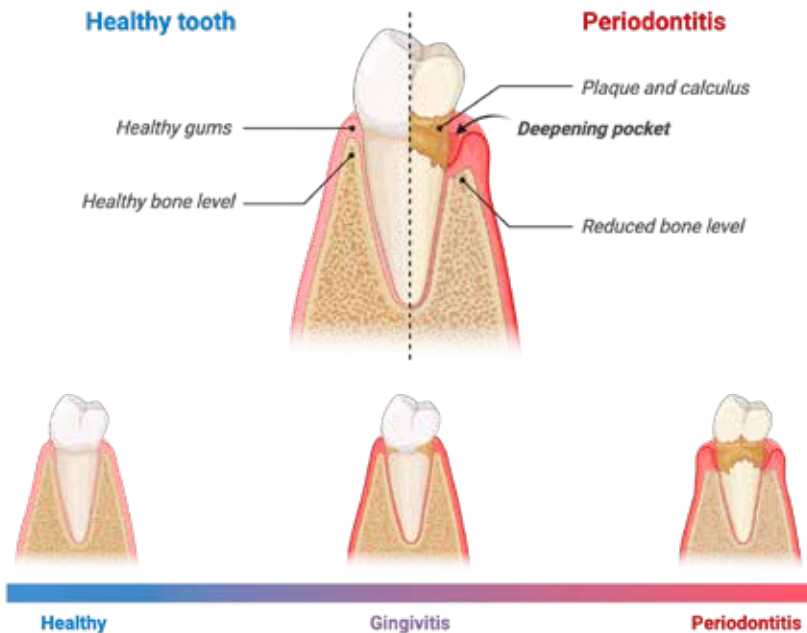
3. Anti-microbial action
L. reuteri DSM 17938 produces the anti-microbial substance reuterin⁶ 



4. Enhancement of the mucosal barrier
L. reuteri DSM 17938 increases the expression of tight junction proteins⁸ 

Periodontal disease – a silent epidemic

Periodontal diseases are mainly the result of infections and inflammation of the gums and bone that surround and support the teeth. In its early stage, called gingivitis, the gums can become swollen and red, and they may bleed. In its more severe form, called periodontitis, the gums can pull away from the tooth, bone can be lost, and the teeth may loosen or even fall out. Risk factors include smoking, stress, diabetes, poor oral hygiene and older age.



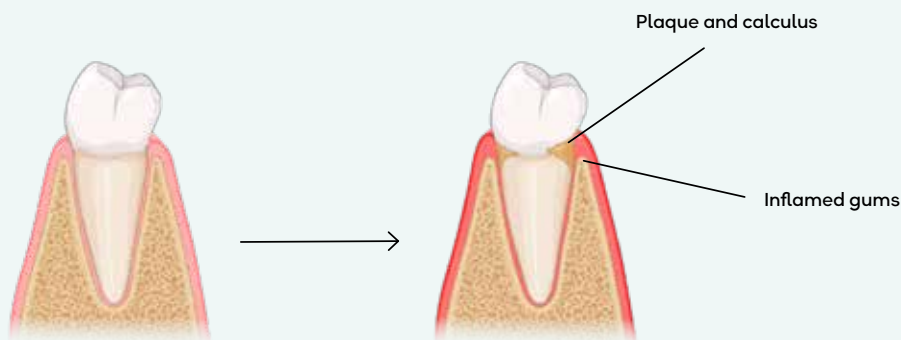
Prodentis® & gingivitis – reduces clinical signs of inflammation

Facts

Gingivitis is the first stage of periodontal disease, characterised by gingival redness, swelling and bleeding without loss of teeth.

It is caused by plaque, a biofilm that contains a large number of bacteria, which eventually hardens to tartar, also called calculus.

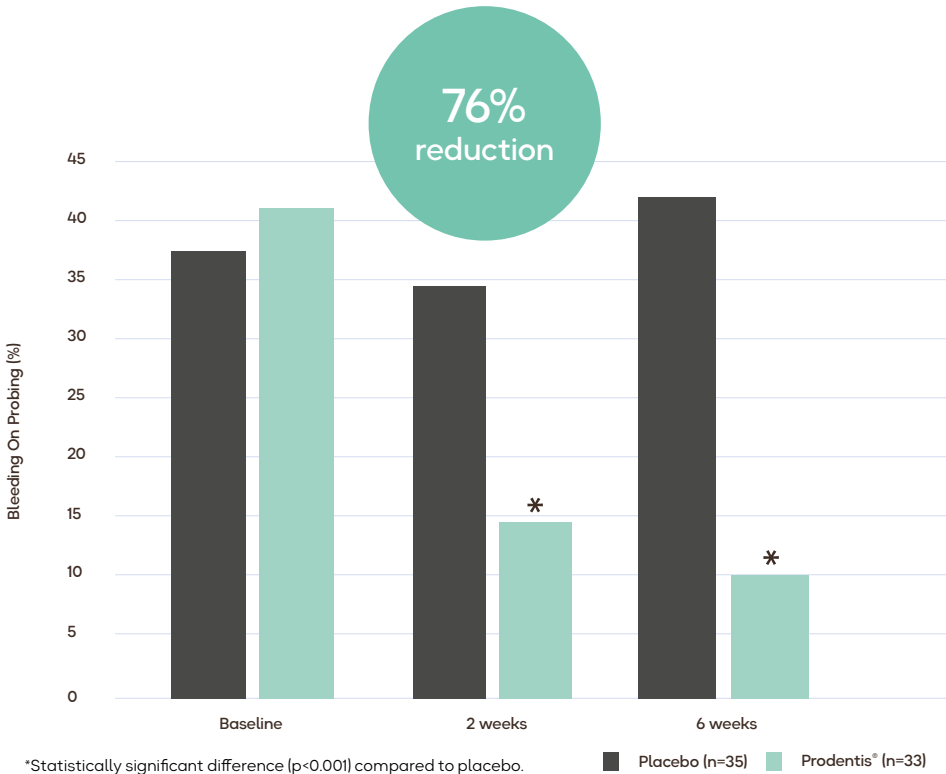
Clinical evaluation is made either by measuring bleeding on probing or gingival index score.



About 50% of all adults over the age of 30, and 70% of all over the age of 65, have some form of periodontal disease^{9,10}

Significant reduction of bleeding on probing¹

In a randomized, double-blind, placebo-controlled study, Prodentis® was shown to significantly reduce bleeding on probing in patients with gingival inflammation.

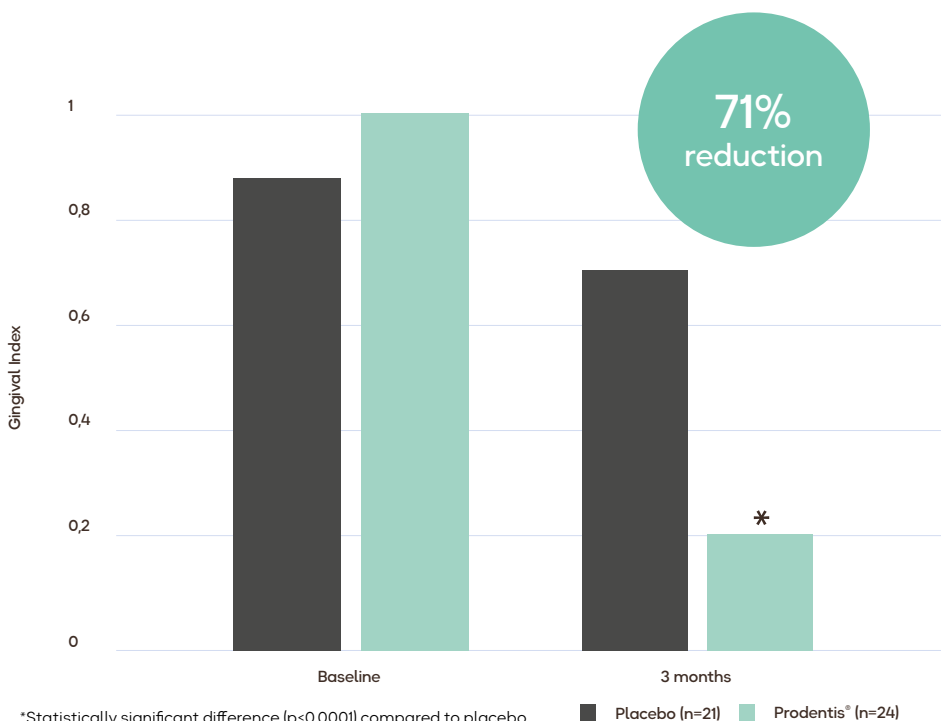


Study facts

- Randomized, double-blind, placebo-controlled study in 68 individuals
- Two lozenges daily (4×10^8 CFU/day) of BioGaia Prodentis® (n=33) or placebo (n=35) for 6 weeks
- Primary outcome: Bleeding On Probing at 2 and 6 weeks

Significant reduction of gingival index²

Hormonal changes during pregnancy increase the risk of gingivitis. In a randomized, double-blind, placebo-controlled study, Prodentis® was shown to significantly reduce gingivitis in pregnant women during the last trimester.



Study facts

- Randomized, double-blind, placebo-controlled study in 45 women with pregnancy gingivitis
- Two lozenges per day of BioGaia Prodentis® (n=24) or placebo (n=21) from the beginning of the third trimester until birth, approximately three months
- Primary outcome: Gingival Index

Prodentis® & periodontitis – reducing probing pocket depth

Facts

Untreated gingivitis can develop into periodontitis, a chronic inflammation characterised by periodontal pockets, bone loss, loose teeth, and eventual tooth loss.

Standard treatment include removal of plaque and tartar by a dental health care professional, i.e. scaling and root planing (SRP).

Clinical evaluation is made by measuring pocket depth:

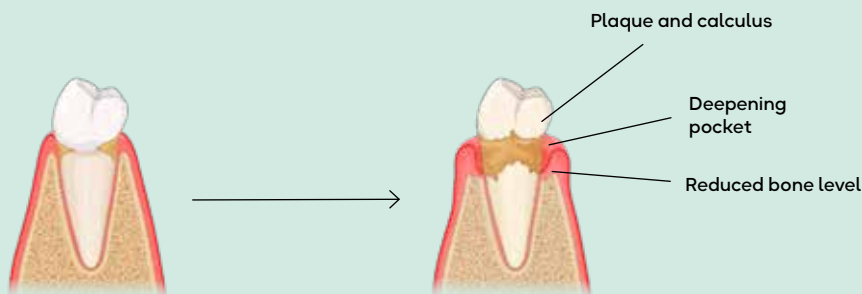
1-3 mm = healthy mouth

3-5 mm = early or mild periodontitis

>5 mm = moderate to severe periodontitis

Prodentis® (as adjunct to SRP)

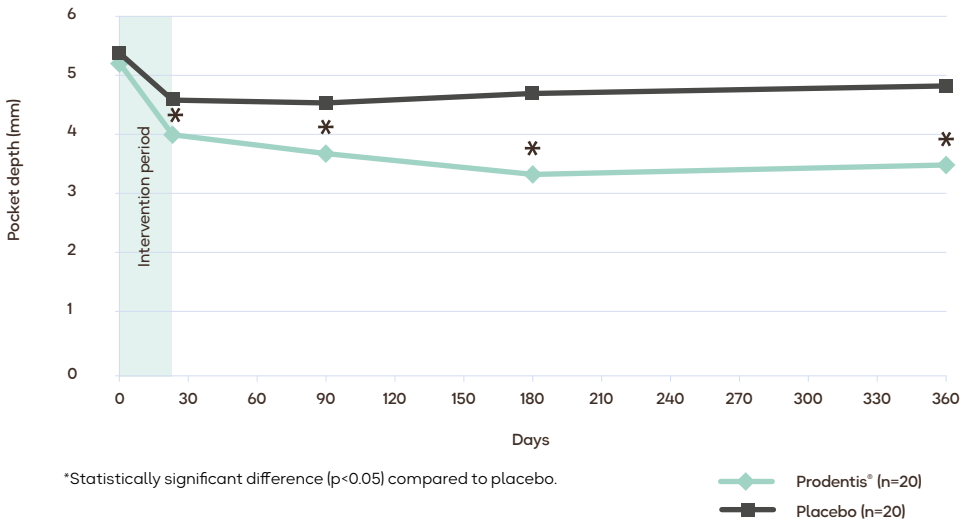
- Reduces probing pocket depth³
- Reduces sites in need of surgery⁴



Long-lasting clinical improvement³

Professional cleaning offers good results on pocket depth, but periodontal pockets can easily be recolonised by pathogenic bacteria.

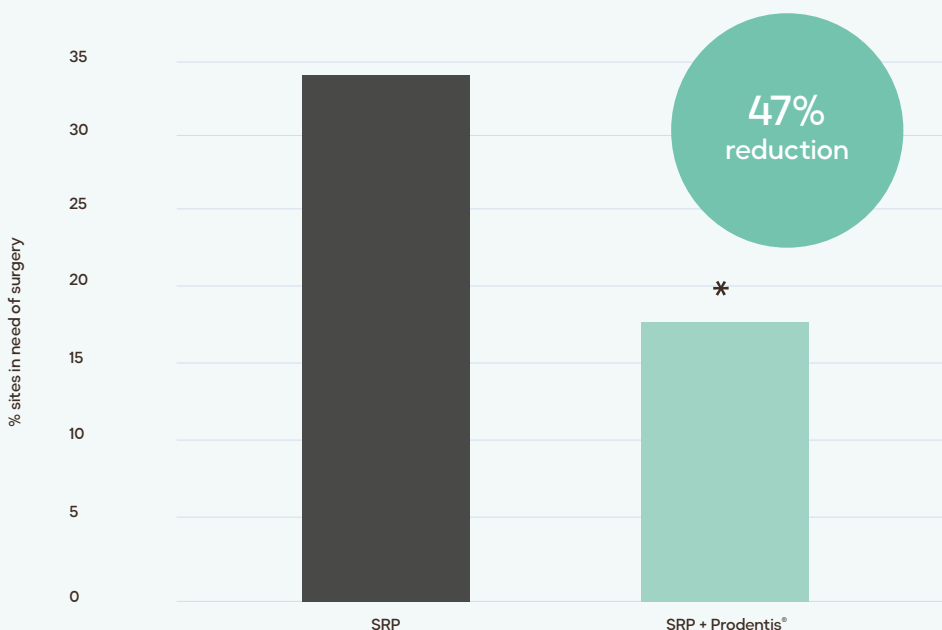
In a randomized, double-blind, placebo-controlled study, Prodentis® was shown to significantly improve and maintain the results of scaling and root planing in patients with periodontitis.



Study facts

- Randomized, double-blind, placebo-controlled study in 40 patients with chronic periodontitis
- BioGaia Prodentis® (n=20) or placebo (n=20) as an adjuvant to scaling and root planing for 21 days
- Follow-up after 1 year from baseline

Less periodontal pockets in need of surgery⁴



*Statistically significant difference ($p < 0.05$) compared to placebo.

- Randomised, double-blind, placebo-controlled study in 30 patients with chronic periodontitis.
- Scaling and root planing (SRP) + either two lozenges per day of Prodentis[®] (n=15) or placebo (n=15) for 3 months

Complete the oral
care routine with a
natural final step.



Reducing pocket depth around implants

Peri-implant diseases are initiated by the same etiological factors that are involved in the onset of periodontal diseases, e.g. presence of pathogenic bacteria, lack of good bacteria and an impaired immune function.

Facts

Peri-implant diseases are classified into two categories:

- Peri-implant mucositis – gingival inflammation with no signs of bone loss
- Peri-implantitis – gingival inflammation with loss of bone

Peri-implant mucositis can be treated and reversed if caught early, while peri-implantitis usually requires surgical treatment.

In patients with dental implants:

- 80% have peri-implant mucositis¹¹
- 28–56% have peri-implantitis¹¹

Prodentis®

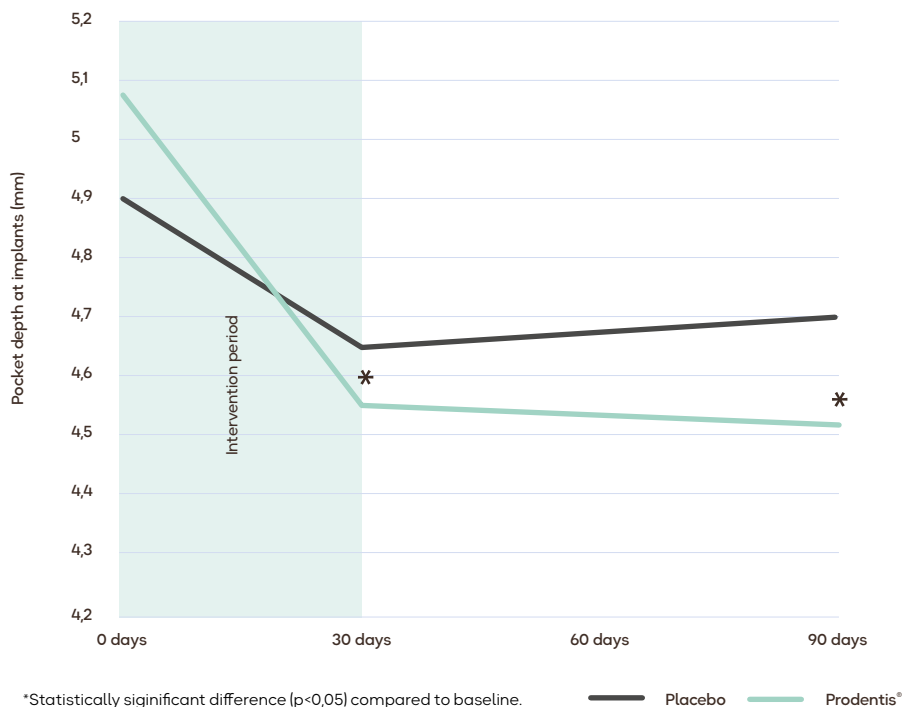
(as adjunct to SRP)

Reduces probing pocket depth around implants⁵



Maintained effect on pocket depth around implants⁵

In a randomized, double-blind, placebo-controlled study, Prodentis[®] was shown to significantly reduce pocket depth after one month of supplementation, and the effect was maintained during the following two months.



Study facts

- Randomized, double-blind, placebo-controlled study in 44 patients with peri-implant mucositis or peri-implantitis
- Scaling and root planing (SRP) + either one lozenge per day of BioGaia Prodentis[®] or placebo for 1 month
- Follow-up after 3 months from baseline

Product facts

BioGaia Prodentis® lozenges

Product:	Lozenges with fresh mint flavour
Daily dose:	1-2 lozenges
CFU:	A lozenge contains a minimum 200 million live <i>L. reuteri</i> Prodentis®
Packaging:	Blister packs of 10, 20, 30 and 60 tablets and plastic containers of 30 lozenges
Strains:	Contains two patented bacterial strains
Name of strains:	<i>L. reuteri</i> DSM 17938 and <i>L. reuteri</i> ATCC PTA 5289
Usage:	Safe and suitable for long-term use from 3 years of age.
Shelf life:	24 months in maximum 25 °C/77 °F
Free from:	Free from gluten, milk and lactose.



About us



BioGaia is a Swedish innovative health company that has been at the forefront of probiotic research for more than 30 years. BioGaia develops, markets and sells probiotic products with documented health benefits.

The company operates throughout the value chain partly through the company and partly through global networks of leading, independent researchers and specialists, production experts and local distribution partners.



Our products

A selection of Biogaia's probiotic products that are sold in over 100 countries world-wide.

Gut health



Immune health



Throat health



Baby health



Oral health





HappyTummy.ie

Distributor of BioGaia probiotics for better gut health

Contact: hello@happytummy.ie

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