



Press release
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Product from BioGaia counteracts bleeding gums by interacting with the immune system

A new study confirms that chewing gum from BioGaia containing *Lactobacillus reuteri* Prodentis reduces gingivitis (inflamed gums). The study also shows that the *Lactobacillus reuteri* Prodentis can interact directly with the human immune system to reduce inflammation.

The study, published by Acta Odontologica Scandinavica, was performed by Professor Svante Twetman and his team in the Department of Cariology and Endodontics at the University of Copenhagen in Denmark. Commenting on the new study, Professor Twetman says *"The importance of this study is not only that it supports earlier findings that L. reuteri Prodentis can be effective in the treatment of gingivitis, but also that it points towards an extended mechanism of action beyond the ability of fighting off pathogens. Our immune system involves mediators that promote inflammation when they are "turned on". Our results suggest that these mediators can be down-regulated by L. reuteri Prodentis."*

In the study, 42 subjects with moderate gingivitis were randomly assigned to receive either chewing gum containing *Lactobacillus reuteri* Prodentis (either one or two chewing gums per day) or placebo (non- active) chewing gums during a two-week period.

The number of bleeding sites was reduced in both groups taking Prodentis chewing gums, by 85% for those taking one Prodentis chewing gum per day and by 86% for those taking two. Both decreases were statistically significant.

In the Prodentis groups, the amount of fluid in the teeth pockets was decreased by 43% for those taking one chewing gum per day and by 53% for those taking two chewing gums per day. Again the decrease was statistically significant in both Prodentis groups.

In the group that took two Prodentis chewing gums per day, Professor Twetman's group found a significant decrease of some important inflammatory mediators, TNF- α and IL-8, which points towards a possible mechanism of action for Prodentis. It is the first time that such changes caused by oral health probiotics are recorded in a clinical setting.

In the placebo group, there were no statistically significant changes for any of the studied parameters.

The oral cavity normally contains a balanced microflora of over 500 different species. Occasionally the balance is overthrown by pathogenic bacteria and the human immune defence will then react resulting in an inflammation. Recent data from the USA indicates that inflamed gums are very common and affects approximately 50% of all adults over 30 years. A cardinal sign of gingivitis is that the inflamed gums tend to bleed easily. Dentists frequently observe this when the teeth are being professionally cleansed. Another sign is that the tooth pocket is swollen because of the inflammation and that excess fluid is forced out into the tooth pocket.

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BioGaia is a biotechnology company that develops, markets and sells probiotic products with documented health benefits. The products are primarily based on the lactic acid bacterium *Lactobacillus reuteri* (Reuteri), which has probiotic, health-enhancing effects. The class B share of the Parent Company BioGaia AB is quoted on the Small Cap list of the Nordic Stock Exchange in Stockholm.

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