

EDITORIAL



Probiotics in Caries Prevention

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Past few decades have seen a significant increase in the prevalence of dental caries at a global scale. To reduce the pervasiveness of cariogenic microflora, various efforts have been undertaken. However, completely eradicating caries-associated microorganisms has been futile.¹ Endogenous bacteria, such as *Lactobacillus* species, *Streptococcus mutans*, and *Streptococcus sobrinus* persisting in biofilms ferment carbohydrate and produce weak organic acids as by-products. This, in turn, results in a drop in the local pH well below the critical level, resulting in demineralization of tooth.² The occurrence of dental caries due to the vital role of the microbial biofilm is a subject of interest for both researchers and clinicians who are looking for means to establish the methods for prevention and treatment of the disease.³

Probiotics are at present the subject of ardent and extensive research, especially in caries prevention wherein administration of an adequate number of live microorganisms will provide oral health benefits to the host.⁴ The replacement of pathogenic species with non-pathogenic types is the basics behind probiotics. The data regarding the action of probiotics on the oral cavity are, however, very scant. Probiotics are involved in direct and indirect interactions to create an improved oral health. It has the ability to reduce the salivary pH and synthesize antioxidants that make use of the free electrons that are mandatory for the mineralization of plaque, thus leading to the inhibition of plaque formation. The development of dental plaque and progression of dental caries can be thwarted by inhibiting the colonization of *S. mutans* on the tooth surface.

The genera *Bifidobacterium* and *Lactobacillus* were the first and the most frequently found probiotic strains in the carious lesions of the oral cavity.^{5,6} A growth inhibitory substance is produced by *Lactobacillus rhamnosus* GG (ATCC 53103) which acts against *Streptococcus sobrinus*, thus reducing the caries risk.^{5,7} Being early colonizers of oral surfaces and being a part of the healthy tongue microbiota, the *Streptococcus salivarius* strains are ideal probiotic agents.⁸ Several *Lactobacillus* species including *L. casei* and *L. acidophilus* are being explored as potential oral probiotics.

Probiotics entail an innovative area of research including assessment of the association of food with oral health. Although preliminary data obtained from several research laboratories have been promising, clinical trials are essential to clearly ascertain the wherewithal of probiotics in preventing dental caries. Such studies will enable us to identify not only the best-suited probiotic but also the most optimal vehicle for delivery, such as food products and/or supplements. Given that several potential probiotics are also a part of the human oral microflora, it is vital to explore such organisms as they have the advantage of being completely adapted to the oral environment.

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