Title: "Pre- and probiotics for maintaining oral health in children”

Lecturer: Professor Svante Twetman

Short CV: Svante Twetman is a specialized pediatric dentist and professor emeritus at the Faculty of Health and Medical Sciences, University of Copenhagen, Denmark. The research focus is oral microbial ecology and caries prevention in childhood. In recent years, he has conducted several laboratory studies and clinical trials on the effect of and probiotic supplements on oral health. He has authored over 300 peer-reviewed papers and numerous book-chapters, and received several prestigious international research awards over the years.

Abstract

The interest in using pre- and probiotics for management of oral diseases has emerged in recent years. Probiotic bacteria are “live microorganisms which when administered in adequate amounts confer a health benefit on the host” while prebiotics are “non-digestible food ingredients that promotes the growth of beneficial microorganism”. Prebiotic examples are arginine and xylitol. The background thinking is to support a health-associated oral microbiome and combat dysbiotic dental biofilms. The main vehicles for administration of live probiotic strains are food (in particular dairy products) and tablets/lozenges. There are multiple mechanisms of action; i) local in the biofilm (co-aggregation, competitive inhibition, production of antibacterial substances), and ii) systemic immunomodulation, affecting salivary IgA and cytokine output in gingival crevicular fluid. Systematic reviews have displayed strong evidence of an antagonistic role of probiotic lactobacilli, in particular *L. reuteri*, against oral pathogens in the biofilm. Interventions early in life seem thereby particularly promising. The lecture will cover evidence and clinical recommendations on the use of pre- and probiotics to prevent caries and gingivitis in children and adolescents. Future applications, such as postbiotics, will also be addressed. In summary, current research suggest that pre- and probiotic supplements can boost the effect of standard care when applied as adjunct to “best clinical practice”.