

## The Effect of Xylitol Chewing Gum on the Number of Salivary Mutans Streptococci and Lactobacillus Spp

Abbas Bahador<sup>1</sup>; Simin Lesan<sup>\*2</sup>; Narges Sadat Kashi<sup>3</sup>

1-Department of Microbiology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

2-School of Dentistry, Islamic Azad University, Tehran, Iran

3-Dentist, Tehran, Iran

ab.bahador@gmail.com

**Background & Objectives:** Dental caries is an infectious disease of the teeth which is caused by Mutans streptococci (MS) and *Lactobacillus spp*, as two major groups of cariogenic bacteria. Sugar substitutes same as xylitol and sorbitol has been shown to reduce dental caries. The aim of this study was to evaluate the effect of chewing gums containing xylitol on salivary MS and Lactobacillus spp.

**Methods:** This study was designed as a double blind randomized cross-over clinical trial. The 36 participants were assigned to three groups: xylitol (xylitol chewing gums group), control 1 (sugar free chewing gums group) and control 2 (no chewing gums group). The gums were taken 3 times daily for a minimum 10 min after meals for 3 weeks. According to cross-over study design, the groups replaced with each other in three steps with 4 weeks wash-out periods. Before and after of each step unstimulated saliva samples were collected and cultured on Mitis-Salivarius and Rogasa media then CFU/ml were clarify for each bacteria. The data analyzed with repeated measure ANOVA and LSD.

**Results:** Thirty- six individuals with average of 27 years old were evaluated. Eight of them were male and 28 were female. A statistically significant reduction ( $p<0.001$ ) of the salivary MS and Lactobacillus spp in case and control 1 groups were display, but there was not significant change in control 2 group ( $p>0.05$ ). Reduction of MS and Lactobacillus spp in case group were significant when compared with control 1 and 2 groups; also reduction in control 1 group were significant when compared with control 2 group ( $p<0.001$ ).

**Conclusion:** The results of this study suggest that a 3 weeks consumption of chewing gums containing xylitol reduce significantly the level of salivary MS and *Lactobacillus spp*.

**Keywords:** Chewing Gums; Xylitol; *Mutans Streptococci*, *Lactobacillus Spp*