

Effect of xylitol-containing chewing gums on lactic acid production in dental plaque from caries active pre-school children.

Twetman S, Stecksén-Blicks C.

Department of Odontology/Paediatric Dentistry, Faculty of Medicine and Odontology, Umeå University, Umeå, Sweden. svante.twetman@odont.umu.se

PURPOSE: The aim of this study was to evaluate the lactic acid concentration in supragingival plaque from caries-active pre-school children after a short-term use of either xylitol- or sorbitol-containing chewing gums. **MATERIAL AND METHODS:** The investigation consisted of a prospective crossover design with 10 healthy children aged 2-4 years each with at least two caries lesions within the dentine ($ds > \text{or} = 2$). The children were instructed to chew 6 pieces of a test or a control gum every day for a 14-day period. The test gum contained 65% xylitol and the control gum was sweetened with sorbitol. At baseline and after 14 days, salivary mutans streptococci were enumerated with a chair-side test (Strip mutans) and dental plaque was collected from the upper maxillary incisors. After a washout period of 6 weeks, the same procedure was repeated with the corresponding test or control gum. Lactic acid was determined enzymatically in glucose-challenged plaque suspensions. **RESULTS:** The lactic acid concentration was significantly reduced ($p < 0.05$) by 22% compared with baseline following the xylitol gum regimen but was unaltered after the control gum. The levels of salivary mutans streptococci were mainly unaffected by both chewing gums. **CONCLUSION: A 14-day use of xylitol-containing chewing gums, corresponding to a daily amount of 5 grams of xylitol, could diminish glucose-initiated lactic acid formation in supragingival plaque in caries-active pre-school children.**

Oral Health Prev Dent. 2003;1(3):195-9.

[PMID: 15641497 \[PubMed - indexed for MEDLINE\]](#)