

Table 2.--Sugar Alcohols and Dental Caries--Continued

Study	Study Design	Subjects	Methods	Results	Comments
Scheinin et al., 1985 (Ref. 23)	Substudy of intervention study (WHO X field studies in Hungary) to evaluate effects of S with X on 2 yr caries increment.	976 institutionalized children, ages 6 - 12.	See Ref. 27 for details of dietary methods. This study differed from 3 yr one in that baseline differences were eliminated because new subjects entering study during the 1st year were included in this study. 2-yr caries increment was analyzed separately and analyzed by categories, and criteria for caries and other oral registrations were based on standard methods described in Ref. 26. Statistical Analysis: MRCOVA; Kruskal-Wallis test	DMFS increment at 2 yr was 3.8 in X group, 4.8 in fluoride groups and 6.0 in C group. RS ratio between caries in C group and X group was 1.57 (population at risk) was 4.5 in X group, 5.5 in fluoride and 7.5 in C group. X group had a 37% and 21% lower caries increment and 40% and 18% lower incidence rate than C and fluoride groups, respectively ($p < 0.001$). The differences in DMFS was significant between the X and C groups at each age ($p < 0.05-0.001$). Differences in DMFS between the X and C groups only significant at age 11 ($p < 0.002$); between fluoride and C groups difference only significant at age 9.	Authors noted that 42% of Ss from main study were in X group. The Ss were primarily due to adoption and to a lesser extent transfer to other institutions. Subjects analyzed at baseline and final examination were the same, but the intermediate examination and final examination absentees, especially in X group. The majority (67%) of the Ss used X for a full yr prior to establishing baseline. New Ss in the X group had not before start of this study. A substantial number (exact number or % not given) of new 6 and 7 yr olds in fluoride group were exposed to milk fluoridation for a 3 yr period prior to the study. The authors stated that the low caries incidence in these age groups could be due to this. This study provides further support that X, when substituted for S, results in lower caries incidence.
Yagi, 1979 (Ref. 34)	In situ study to evaluate the change in microhardness from maltitol	3 female and one male Ss, ages 12-15 years with deficiencies in submaxillary molars and wearing lingual bar denture	Intraoral cariogenicity test using 0.08 ml of 1% maltitol denture, about 0.08 ml of 1% MALT soln was dropped on one of 2 enamel fragments. On other fragment, 0.08 ml of 1% S soln was dropped. Ss had no dietary restriction. After 48 days, enamel hardness was measured. Hardness is shown as depth in μ m of depth that the diamond head of micro hardness scale penetrated. The experiment was repeated on each Ss.	The average change in hardness compared to pretreatment levels was 1.47 μ m for MALT and 3.15 μ m for S. These changes were significant as well as the difference between MALT and S treatments.	Bovine enamel was used. The bovine enamel should also have been exposed to pure water. Authors note that there were no significant differences in responses when examining individual differences are attributed to differences to the oral environment (e.g., plaque bacteria and quality and quantity of saliva).

Abbreviations:
X = Xylitol
S = Sucrose
MALT = Maltitol
LAC = Lactitol
HSH = Hydrogenated starch hydrolyzates
GUS = Glucose
DMFT = Decayed, missing, filled teeth
DMFS = Decayed, missing, filled surfaces

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