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Sweetener May Prevent Cavities in Toddlers **Sugar Substitute Xylitol Prevents Tooth Decay by Acting as an Antibacterial Agent**

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WebMD Health News

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July 6, 2009 -- An oral syrup containing a naturally occurring sweetener called xylitol can prevent cavities in toddlers, according to a new study.

Reporting in the July issue of *Archives of Pediatrics and Adolescent Medicine*, University of Washington researchers say cavities in early childhood are increasing in prevalence, especially in the poor.

But that could change, the authors say, if parents give teething babies and toddlers xylitol, a low-calorie sweetener that also prevents tooth decay by acting as an antibacterial agent against organisms that cause cavities.

"Poor children experience rates (of caries, also known as cavities) twice as high as those of their more affluent peers, and their disease is more likely to be untreated," the authors write. "Poor oral health affects diet and nutrition and significantly diminishes quality of life. However, tooth decay is a disease that is largely preventable."

Previous research has shown that chewing gum or lozenges containing xylitol helps prevent tooth decay in permanent teeth, the researchers write.

But they used an oral syrup containing xylitol in their study, which involved 94 participants between 9-15 months of age who live in the Republic of the Marshall Islands, where early childhood tooth decay is a serious public health problem.

Two treatment groups received 8 grams of xylitol syrup per day. One group of 33 received their 8 grams of xylitol in two 4 gram doses, and 32 children received 8 grams in three 2.67 gram doses. A control group of 29 young children received one dose of 2.67 grams. Health officials in the Marshall Islands didn't allow researchers to use a placebo, so the control group received some xylitol.

After an average of 10.5 months, 24.2% of children receiving two xylitol doses (equal to 8 grams) had tooth decay, as did 40.6% of children getting three daily doses (equal to 8 grams). In the control group, 51.7% got tooth decay.

There were fewer decayed teeth on average in the 8 grams per day groups as well. The findings of the two groups getting 8 grams per day were not statistically different.

"Our results suggest that exposure to xylitol (eight grams per day) in a twice-daily topical oral syrup during primary tooth eruption could prevent up to 70% of decayed teeth," the authors say. "Dividing the eight grams into three doses did not increase effectiveness of the treatment."

Peter Milgrom, DDS, and colleagues at the University of Washington and in the Marshall Islands say their results show for the first time that xylitol is effective in the prevention of tooth decay in the teeth of toddlers. In populations with high rates of tooth decay, they say in a news release, xylitol is likely to be a good preventive step and a cost-effective one, too.

Xylitol can be found in toothpaste, gels, mouthwashes, and sprays, as well as in gum, mints, and candy.

Burton L. Edelstein, DDS, of the College of Dental Medicine at Columbia University, says in an accompanying editorial that the new study shows that "xylitol application holds strong promise to significantly dampen early childhood [cavities]."

He says xylitol treatment likely will become a routine element of early childhood oral hygiene.

Danisco USA, which manufactures products that include xylitol, donated the raw materials used for syrups in the study.

(Caution: ICE CHIPS® Candy should not be given to children under the age of five due to a choking hazard)