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Effect of after-meal sugarfree gum chewing on clinical caries.

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The objective of this two-year caries clinical trial was to assess the effects on remineralization and caries of after-meal chewing of a commercially-available sorbitol-sweetened chewing gum (Orbit®/Extra®), relative to a non-chewing control. Within each of six participating schools in Budapest, Hungary, classes within each grade level (initial age range: 8-10 years) were randomly assigned to the chewing and non-chewing treatment groups. Subjects assigned to the gum chewing group were instructed to chew one stick of gum three times a day after meals for 20 minutes, seven days a week. Twice-daily gum chewing in school was supervised by school personnel. Evening, weekend, and summer gum chewing compliance was monitored. Annual clinical caries examinations were conducted by a single examiner using WHO criteria. White spot and Radike caries scores were assessed. A summary (mean \pm S.D.) of the two-year incremental caries findings is presented below (with p-value from analysis of covariance):

Parameter	Control (n=278)	Gum (n=269)	% Reduction	p-value
Radike DMFS	1.30 \pm 1.86	0.77 \pm 1.60	40.8%	0.0180
WHO DMFS	2.99 \pm 3.15	1.91 \pm 2.69	36.1%	0.0084

The mean number of reversals of incipient lesions was greater in the gum-chewing group than in the control group (0.28 vs. 0.13), suggesting enhanced remineralization. Thus, this study confirms that chewing a sorbitol based chewing gum after eating enhances the remineralization of white spot lesions, and significantly reduces caries incidence.

(This study was sponsored by the Wm. Wrigley Jr. Co.)

Reference: Szöke, J.; Proskin, H.M.; Bánóczy, J. (1999): Effect of After-meal Sugarfree Gum Chewing on Clinical Caries, J. Dent Res. Vol. 78 Special Issue, Abstract #3118.

