

**27. Effect of time and duration of gum chewing on plaque acidogenicity. Schemehorn BR, Park KK, Bolton JW, Stookey GK. *J Dent Res.* 1988; 67: 1328.**

The purpose of these studies was to determine the effect of changing the time interval between food ingestion and chewing a sugarless gum in addition to the duration of gum chewing on plaque acidogenicity.

The in-dwelling pH electrode model identified by the ADA Foods, Nutrition and Dental Health Program was used. In the first study, the panelists were used in all items (pretzel, potato chips, corn chips and granola bar) from a Latin square design. Plaque pH curves of 3-7-day-old plaque were recorded for two hours. The panelists then repeated the test design at a later date except they chewed a sorbitol-containing gum for a 10-minute period 15 minutes following food ingestion. The second study was identical except the gum chewing period was 15 minutes (rather than 10) after a 5-minute (rather than 15) post ingestion period. Parameters monitored included area of the pH curve below 5.5, lowest pH attained, maximum pH drop and time below pH 5.5.

The data indicate that when the gum was chewed for a longer time period and chewing was started 10 minutes sooner after the food-ingestion, the area under pH 5.5 was reduced by a significantly larger percentage (89 vs. 65%). Minimum pH attained was significantly higher (1.32 vs. 0.38 pH units) and maximum pH drop was significantly reduced (1.18 vs. 0.36 pH units). Time under pH 5.5 was numerically but not significantly reduced by reducing the time interval between ingestion of food and the chewing of the sorbitol-containing gum. The results indicate that when the gum was chewed closer to food ingestion and for a longer time period, significantly reduced cariogenic challenge from each of the foods were observed over the two-hour monitoring periods.