29. Effect of chewing gums containing xylitol, sorbitol or a mixture of xylitol and sorbitol on plaque formation, pH changes and acid production in human dental plaque.
Topitsoglou V, Birkhed D, Larsson L-A, Frostell G. *Caries Res.* 1983; 17: 369-378.

The aim of the present investigation was to study if xylitol added to a sorbitol-containing chewing gum influenced the pH changes and the acid production activity from sorbitol in plaque. Using a cross-over design, a total of 71 persons were given, 10 times per day for 4 days, three types of chewing gum containing: (1) xylitol; (2) sorbitol, or (3) a mixture of xylitol and sorbitol (called xylitol/sorbitol). After the 4-day periods, the plaque pH changes were measured at various time intervals up to 40 min, either after 1 min of chewing on two pieces of the sorbitol or the xylitol/sorbitol gum in 24 of the subjects, or after a 30-second mouth rinse with 10 ml of a solution containing either 25% sorbitol or 25% sorbitol plus 25% xylitol in 23 of the subjects. Moreover, the amount of plaque (wet weight) and the acid production activity of plaque suspensions using glucose, sorbitol or a mixture of xylitol and sorbitol as substrates was also determined in 24 of the subjects. The 4-day periods with the xylitol/sorbitol gum and especially the periods with the xylitol gum resulted in less amount of plaque, higher plaque pH values, and lower acid production activities in the plaque suspensions than the periods with the sorbitol gum. Even though the observed differences were small, the results indicate that the presence of xylitol in a chewing gum, either alone or in combination with sorbitol, is preferable to sorbitol alone as far as the plaque formation, plaque pH and acid production activity in plaque are concerned.