

Xylitol Long-Term Study - Belize

Caries is a bacterial disease that can affect quality of life and consumes considerable health-care resources. Despite widespread use of fluoride in many forms, caries remains a staggering public health and economic burden.

Researchers have suggested that chewing gum stimulates saliva, which should help reduce the incidence of caries. This was the first study designed to compare, side by side, several chewing gum formulations.

Researchers from the University of Michigan compared nine treatment groups among fourth graders in Belize. The study included the 19 public schools in Belize City and lasted 40 months. The nine test groups were:

1. No gum control
2. Sugar stick gum five times daily
3. Sorbitol pellet gum five times daily
4. 45 percent xylitol/30 percent sorbitol pellet gum five times daily
5. 15 percent xylitol/45 percent sorbitol pellet gum five times daily
6. 60 percent xylitol stick gum three times daily
7. 60 percent xylitol stick gum five times daily
8. 65 percent xylitol pellet gum three times daily
9. 65 percent xylitol pellet gum five times daily

Gum chewing was supervised while at school. One of four dentists examined each child at baseline, 16, 28 and 40 months. The sugar gum resulted in a slight increase in caries compared to the control group. All the sorbitol and xylitol gums showed various levels of anticaries effects. The most effective gum for caries prevention was the xylitol sweetened gum, chewed five times daily.

CLINICAL IMPLICATIONS:

Encourage patients to chew only xylitol-sweetened chewing gum five times per day to achieve the greatest anticaries benefit of xylitol.

Mäkinen, K., Bennett, C., Hujoel, P., Isokangas, P., Isotupa, K., Pape, H., Mäkinen, P.: Xylitol Chewing Gums and Caries Rates: A 40-Month Study. J Dent Research 74: 1904-1913, 1995.

