

## What Xylitol Dose is Needed to Effectively Reduce Bacteria

For xylitol to be a cost-effective public health measure, we need to know the lowest dose and ingestion frequency needed to achieve clinical benefit.

Researchers at the University of Washington compared three total daily xylitol doses of chewing gum given to 120 adults over six months. A fourth group was given gum sweetened with sorbitol and maltitol. Subjects were instructed to chew three pellets for five minutes or more, four times daily. To ensure compliance, the assigned gums were distributed weekly for the first five weeks and then biweekly for the remainder of the six months.

The daily doses tested were: 3.44 grams, 6.88 grams and 10.32 grams. Plaque and saliva were collected at baseline, five weeks and six months. Plaque was scraped off all buccal surfaces of all the teeth.

*Strep. mutans* levels in the plaque were reduced tenfold from baseline to five weeks and also at six months for those chewing 6.44 grams and 10.32 grams of xylitol.

Based on cultures of the plaque, the xylitol affected the *Strep. mutans* without altering the numbers of other bacteria in the plaque. Salivary levels of bacteria were also lower for these two groups, and unchanged in the group chewing 3.44 grams per day.

Researchers are now comparing the effects of 10.32 grams per day spread over two, three and four daily doses.

### **CLINICAL IMPLICATIONS:**

**Xylitol chewing gum needs to be chewed four times per day for a total dose of six to 10 grams per day. Achieving a xylitol daily dose of less than six grams will not provide the anticariogenic effects desired.**

*Milgrom, P., Ly, K., Roberts, M., Rothen, M., Mueller, G., Yamaguchi, D.: Mutans Streptococci. Dose Response to Xylitol Chewing Gum. J Dent Research 85 177-181, 2006.*