Sugarfree Chewing Gum and Oral Health

The stimulation of saliva flow while chewing sugarfree gum benefits oral health. Adding specific active ingredients may extend these benefits.

Michael W.J. Dodds, PhD
Wm. Wrigley Jr. Company

Sugarfree chewing gum has become known as the tooth-friendly confection, consumption of which will not lead the child or adult to the dentist’s office. As a result of this, chewing gum is increasingly being viewed as a delivery system for many substances that could potentially provide direct oral care benefits. The aim of this article is to summarize the known oral care benefits of sugarfree chewing, as well as some of the limitations of this method of complementing regular oral care, along with some possible future directions.

**ACTION OF SUGARFREE GUM ON SALIVA AND ASSOCIATED BENEFITS**

The major benefits of sugarfree chewing are mediated through simple oral physiology: stimulation of the salivary glands to produce a strong flow of saliva is elicited by a combination of mastication and flavor. The resting (unstimulated) saliva flow is typically about 0.4 ml/min in healthy adults, and there is an immediate ten- to twelve-fold increase when chewing gum. A sugarfree mint increases saliva to a lesser extent, and gum base alone also does, but to an even lower level, showing that maximum salivation results from the combination of chewing and flavor. Flow rates for gum base and chewing gum are similar after about 5 to 7 minutes when most of the sweeteners and flavor have been released, although the flow rate for gum is higher, probably due to residual mint flavors being released (Figure 1). On the other hand, once the breath mint dissolves, its effect on saliva is lost.

Mean saliva flow rates (ml/min) after chewing sugar-free gum, gum base, or a sugar-free breath mint.

**Figure 1**

Data from Dawes and Macpherson, 1992