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Editorial

Chewing Sugar-Free Gum and Slowing the Progression of Dental Caries in Children

Mohammad Karimi, DMD, BS*

Department of Pediatric Dentistry, Sepideh Dental Clinic, Iran

***Corresponding author:** Mohammad Karimi, Department of Pediatric Dentistry, Sepideh Dental Clinic, Iran*

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Editorial

The results of epidemiological studies of industrialized countries in Europe and North America in recent decades show a rapid decline in tooth decay in children and youth of these countries [1-3]. On the other hand, based on clinical, experimental, and epidemiological research, there is a general agreement that the prevalence of dental caries in children and young people in developing countries is increasing significantly. Also, regarding the reasons for reducing caries in industrialized countries, it has been identified that the implementation of primary prevention programs at the community level, including nutrition control, has played a major role in reducing dental caries in children. Diet is one of the effective factors on teeth and sugars such as sucrose is the most important nutritional factors and are effective in causing tooth decay. Due to the great interest of children in consuming products and snacks that contain sucrose, much research has been done on alternative sweeteners and is still ongoing. In recent years, sugar-free chewing gum has been suggested as an adjunct to caries prevention. Scientists have found that chewing sugar-free gum increases saliva flow and can act as a natural barrier to protect teeth, and behaviors that expose teeth to decay, such as overeating, and sweet drinks are incompatible. Also, sugar-free gum can act as a carrier of antibacterial agents including xylitol and Sorbitol.

According to a systematic review published Nov. 19 in the journal Dental Research Clinical & Translational Research, chewing sugar-free gum may slow the growth of more cavities in children. As a general rule, any substance that increases the amount of sugar in the oral environment can spread tooth decay because the oral environment is a good environment for bacteria to convert sugar into acid. On the other hand, it can be said that any substance that increases salivation and chewing can improve and facilitate the self-washing of the oral environment. Chewing gum causes the mouth to produce saliva, which helps neutralize oral acids from the breakdown of food. Therefore, if the gum is chewed after a meal, it will help oral health. Chewing gum can have both positive and negative effects on the mouth. On one hand, having sugar (if ordinary and sweet gum is used) causes the spread of tooth decay; on the other hand, increasing saliva secretion and chewing can improve, and facilitate self-cleaning of the oral environment. It should be noted that improper consumption of chewing gum can cause digestive problems, including diarrhea. However, the freshness of the mouth or the increase of saliva may be seen after chewing gum, but it never replaces brushing teeth, dental floss, and keeping oral hygiene. It seems that chewing gum in general, especially after eating the main meal and snacks, even in the absence of oral hygiene measures, is effective in reducing plaque accumulation, which can be due to reasons such as mechanical properties of chewing gum, increase salivation, etc. Nevertheless, replacing sucrose with sugars such as xylitol greatly increases the effect of chewing gum in reducing plaque accumulation that can be recommended for people with poor oral hygiene such as physical and mental disability patients; orthodontic patients, patients with rapidly progressing caries, and low levels of saliva secretion such as people undergoing radiotherapy. Lastly, in another study, the researchers revealed although the effect of sucrose-free chewing gum is significantly greater than that of sucrose-containing gum in reducing plaque buildup, chewing gum containing sucrose even in the absence of oral hygiene measures could reduce plaque buildup [4].

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