

# Oral care on-the-go:

## A guide to the science of sugarfree gum.

In addition to visiting the dentist regularly, brushing twice a day and flossing daily, chewing sugarfree gum can help protect the teeth when patients are on-the-go.

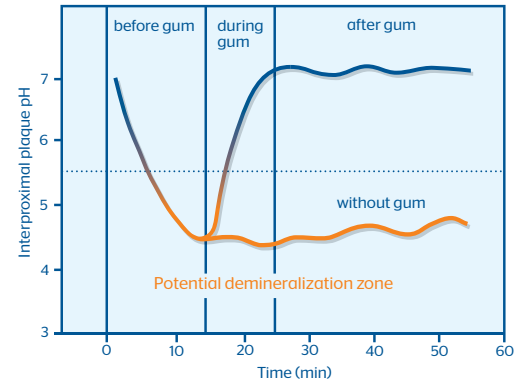
### How can chewing gum help your patients maintain oral health?

As you know, immediately after eating, plaque acids can attack teeth and initiate the demineralization of the tooth surface, which can weaken teeth and lead to decay over time.

Chewing sugarfree gum increases the production of saliva, which can help neutralize plaque acid, wash away food particles and remineralize tooth enamel to strengthen teeth. In fact, chewing sugarfree gum for 20 minutes after meals and snacks has been proven to help reduce tooth decay.<sup>1</sup>

### Research shows that chewing sugarfree gum can help protect teeth in a number of ways.

Multiple clinical trials have consistently demonstrated the effect of chewing sugarfree gum in helping to reduce the incidence of dental caries.<sup>2,3</sup>



### Other oral care benefits of chewing sugarfree gum include:

- ✓ **Stimulate saliva flow:** By stimulating saliva production, chewing sugarfree gum can be an important defense mechanism to help protect teeth.<sup>4,5</sup>
- ✓ **Reduce plaque:** Chewing sugarfree gum has been associated with a reduction in the quantity and development of plaque on teeth, and a reduction in the acid-forming ability of plaque.<sup>6,7,8</sup>
- ✓ **Neutralize acids:** Salivary stimulation by chewing sugarfree gum after snacks or meals containing fermentable carbohydrate has been demonstrated to reduce the acidogenic potential of foods significantly.<sup>9,10,11</sup>
- ✓ **Remineralize enamel:** Stimulated saliva helps to restore minerals in tooth enamel, as levels of calcium and phosphate ions in the saliva increase due to stimulation caused by chewing gum.<sup>12,13,14,15,16</sup>
- ✓ **Clean the mouth of food debris:** Chewing sugarfree gum increases the rate of food debris clearance from teeth compared with not chewing gum during the initial 15 minutes after eating.<sup>17</sup>
- ✓ **Relieve dry mouth discomfort:** Stimulation of salivary flow caused by chewing gum can relieve some of the discomfort of xerostomia. In fact, chewing sugarfree gum has been shown to be one of the most preferred treatments for xerostomia.<sup>18,19,20,21</sup>

<sup>1</sup>Szöke J, Proskin HM, Banoczy J. Effect of after-meal sugarfree gum chewing on clinical caries. *J Dent Res*. 2001; 80(8):1725-729.

<sup>2</sup>Deshpande A, Jadad AR. The impact of polyol-containing chewing gums on dental caries: a systematic review of original randomized controlled trials and observational studies. *J Amer Dent Assoc*. 2008; 139(12):1602-614.

<sup>3</sup>Mickenausch S, Leal SC, Yengopal V, et al. Sugar-free chewing gum and dental caries: a systematic review. *J Appl Oral Sci*. 2007; 15(2): 83-88.

<sup>4</sup>Dawes C, Dong C. The flow rate and electrolyte composition of whole saliva elicited by the use of sucrose-containing and sugarfree chewing gums. *Arch Oral Biol*. 1995; 40(8): 699-705.

<sup>5</sup>Polland KE, Higgins F, Orchardson R. Salivary flow rate and pH during prolonged gum chewing in humans. *J Oral Rehabil*. 2003; 30(9): 861-65.

<sup>6</sup>Kandelman D, Gagnon G. A 24-month study of the incidence and progression of dental caries in

relation to consumption of chewing gum containing xylitol in school preventive programs. *J Dent Res*. 1990; 69(11):1771-775.

<sup>7</sup>Topitsoglou V, Birkhed D, Larsson LA, et al. 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. *Caries Res*. 1983; 17(4): 369-78.

<sup>8</sup>Söderling E, Mäkinen KK, Chen CY, et al. Effect of sorbitol, xylitol and xylitol/sorbitol chewing gums on dental plaque. *Caries Res*. 1989; 23(5): 378-84.

<sup>9</sup>Park KK, Schemehorn BR, Stookey GK. Effect of time and duration of sorbitol gum chewing on plaque acidogenicity. *Pediatr Dent*. 1993; 15(3): 197-202.

<sup>10</sup>Fröhlich S, Maiwald HJ. Reversal of food induced plaque acidity by chewing gums. *J Dent Res*. 1992; 71(1 suppl.): 269 (Abstract #1309).

<sup>11</sup>Fröhlich S, Maiwald HJ, Flowerdew G. Effect of gum chewing on the pH of dental plaque. *J Clin Dent*. 1992; 3(3): 75-78.

<sup>12</sup>Creanor SL, Strang R, Gilmour WH, et al. The effect of chewing gum use on in situ enamel lesion remineralization. *J Dent Res*. 1992; 71(12):1895-900.

<sup>13</sup>Leach SA, Lee GT, Edgar WM. Remineralisation of artificial caries-like lesions in human enamel in situ by chewing sorbitol gum. *J Dent Res*. 1989; 68(6): 1064-068.

<sup>14</sup>Manning RH, Edgar WM. Salivary stimulation by chewing gum and its role in the remineralization of caries-like lesions in human enamel in situ. *J Clin Dent*. 1992; 3(3): 71-74.

<sup>15</sup>Steinberg LM, Odusola F, Mandel ID. Remineralizing potential, antiplaque and antigingivitis effects of xylitol and sorbitol sweetened chewing gum. *Clin Prev Dent*. 1992; 14(5): 31-34.

<sup>16</sup>Wefel JS, Jensen ME, Hogan M, et al. Effect of sugarless gum on human intra-oral demineralisation and remineralisation. *J Dent Res*. 1989; 68(1 suppl.): 214 (Abstract #263).

<sup>17</sup>Triolo P, Jensen M. Effect of chewing gum on food clearance from the dentition. *J Dent Res*. 1990; 69(1 suppl.): 136 (Abstract #220).

<sup>18</sup>Fox PC, Van Der Ven PF, Baum BJ, et al. Pilocarpine for the treatment of xerostomia associated with salivary gland dysfunction. *Oral Surg Oral Med Oral Pathol*. 1986; 61(3): 243-48.

<sup>19</sup>Olsson H, Axéll T. Objective and subjective efficacy of saliva substitutes containing mucin and carboxymethylcellulose. *Scand J Dent Res*. 1991; 99(4): 316-19.

<sup>20</sup>Aagaard A, Godiksen G, Teglers PT, et al. Comparison between new saliva stimulants in patients with dry mouth: a placebo-controlled double blind crossover study. *J Oral Pathol Med*. 1992; 21(8): 376-80.

<sup>21</sup>Dawes C, Macpherson LM. Effects of nine different chewing gums and lozenges on salivary flow rate and pH. *Caries Res*. 1992; 26(3): 176-82.

