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The world's leading non-alcoholic beverage companies provide a wide range of beverage options, some of which have few, if any, calories. Many of these choices are made with low- or no-calorie sweeteners, which provide sweetness and refreshment while reducing sugar and calories.

They also can be an effective tool as part of an overall weight loss or weight management plan, and are vitally important to diabetes management via weight management and blood glucose control. Look inside for answers to some of the common questions about these beverages.



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- Q: There's information on the Internet suggesting beverages that contain low- or no-calorie sweeteners might cause health problems. Are these sweeteners and beverages safe?
- A: Yes. Low- and no-calorie sweeteners, which are used in many foods and beverages,<sup>1</sup> are among the most thoroughly researched ingredients worldwide. Hundreds of studies from around the globe support their safety. The U.S. Food and Drug Administration (FDA)<sup>2</sup> and the Europe an Food Safety Authority (EFSA)<sup>3,4</sup> are just two of the government agencies in more than 100 countries that have examined and approved the use of these sweeteners for human consumption. The Joint FAO/WHO Expert Committee on Food Additives, a scientific group under the auspices of the United Nations' Joint FAO/WHO Codex Alimentarius Food Standards Programme, also says that low- and no-calorie sweeteners are safe.<sup>5</sup>
- Q: Is it true that we consume a lot of low- and no-calorie sweeteners from foods and beverages? Isn't this bad for me?
- A: No. Intakes of these ingredients are below the Acceptable Daily Intakes (ADI), or amounts that can be safely consumed on a daily basis throughout a person's lifetime without any health problems.<sup>6</sup>
- Q: News stories often suggest that low- or no-calorie beverages might cause weight gain. Is that true?
- A: No. Numerous human studies show that low- or no-calorie beverages can actually help with short- and longer-term weight loss and weight maintenance. Importantly, two recent evidence-based reviews of the available literature on the consumption of low- and no-calorie sweeteners in weight management concluded that these ingredients lead to weight loss as they are one tool (among many) in overall weight management.<sup>7,8,9</sup> The North Carolina Choose Healthy Options Consciously Everyday (CHOICE) study found that those consuming beverages with sugar substitutes ate significantly fewer sweet foods and desserts than those who drank only water. Low- or no-calorie beverages also seem to help people better manage their daily caloric and sugar intake.<sup>10</sup>

More recently, the findings of a two-phase clinical trial conducted by the University of Colorado Anschutz Health and Wellness Center and Temple University's Center for Obesity Research and Education were that dieters who drank low- or no-calorie beverages as part of an overall weight loss and maintenance program lost 44 percent more weight<sup>11</sup> than those who drank water alone, and maintained a 13.6 lbs. (6.2 kg) weight loss after one year compared to a 5.5 lbs. (2.5 kg) weight loss among the water only group.<sup>12</sup> Those who have lost significant amounts of weight and kept it off long-term are three times more likely to drink low- or no-calorie beverages than people who have never lost weight and they say that these beverage options help them to maintain their weight loss.<sup>13</sup> Public health organizations such as the Academy of Nutrition and Dietetics<sup>14</sup> and American Heart Association<sup>15</sup>, among others, likewise recognize the health benefits generally afforded by these sweeteners.

## Q: Does drinking low- or no-calorie beverages cause sweet cravings?

A: No. Scientific research shows that consuming sugar substitutes or beverages that contain them does not cause sweet cravings, nor do they promote hunger.<sup>16,17,18,19,20,21,22</sup> A study co-sponsored by the University of Amsterdam, the Dutch Heart Foundation and the Royal Netherlands Academy of Arts and Sciences (KNAW) found this to be true.<sup>23</sup> In addition, researchers have found that, during a 52-week weight loss and weight maintenance program,<sup>13</sup> dieters who drank low- or no-calorie beverages reported feeling significantly less hungry than those who drank water alone. These findings are consistent with the Choose Healthy Options Consciously Everyday (CHOICE) study in which researchers compared consumption of low- or no-calorie beverages to water and found that neither caused food cravings and that those consuming beverages with sugar substitutes ate significantly fewer sweet foods and desserts than those who drank only water.<sup>10</sup> In fact, low-and no-calorie sweetener use is associated with healthier diets overall. In early 2016, Gibson et al.<sup>24</sup> analyzed data from a sample of 1,590 participants of the United Kingdom's National Diet and Nutrition Survey (NDNS) in order to explore if people who consume low- or no-calorie beverages tend to follow healthier diets. The study found that diet drink consumers indeed had a better diet guality. A similar pattern also was observed among Americans.<sup>25</sup>

# Q: Can low- and no-calorie sweeteners promote tooth decay?

A: No. Low- and no-calorie sweeteners, also known as sugar substitutes, do not promote tooth decay.<sup>1</sup> Along with good dental hygiene, dentists may recommend them as a way help prevent tooth decay.<sup>26</sup>

## Q: Do low- or no-calorie beverages cause diabetes?

A: No. However, excess body weight is a known risk factor for type 2 diabetes. Reducing added pounds and preventing weight gain can help reduce risk. Low- and no-calorie sweeteners have a dual role in individuals with diabetes: to facilitate weight management by reducing caloric intake and to help control blood glucose levels by reducing carbohydrate and sugar intake. Studies including evidence-based reviews of the available literature show that lowor no-calorie sweetened beverages can help with weight loss and weight maintenance.<sup>7,8</sup> These beverages also don't raise blood sugar levels.<sup>27,28,29,30</sup> The Obesity study found that more than 25 percent of participants in the water group achieved a five percent or greater weight loss of their total body weight compared to about 44 percent of the low- and no-calorie beverage group.<sup>13</sup> A five percent weight loss has been shown to significantly improve health, including lowering the risk of type 2 diabetes.<sup>31,32</sup>

# Q: Are sodas with sugar substitutes linked with heart disease?

A: No. The Coronary Artery Risk Development in Young Adults Study found that people who drank low- or no-calorie sodas and followed "prudent" diets rich in fruit, vegetables and whole grains were much less likely to develop heart disease and type 2 diabetes than those who drank the same beverages but ate a "western" diet high in saturated fat and missing fruit, vegetables and whole grains.<sup>33</sup> A more recent randomized controlled study found that 25.5 percent of participants in the water group achieved a five percent or greater weight loss of their total body weight compared to about 44 percent of the low- or no-calorie beverage group.<sup>13</sup> That group also showed a significant reduction in triglycerides.<sup>13</sup> Other studies have found similar benefits from low- and no-calorie sweetener consumption.<sup>34,35</sup>

Hundreds of studies from around the globe support the safety of lowand no-calorie sweeteners.

Low- or no-calorie beverages can actually help with short- and longer-term weight loss and weight maintenance.