

NUTRITION NEWS

Sweet Facts About Polyols

What are polyols?

Polyols, also called sugar alcohols, are a group of versatile, reduced-calorie carbohydrates that provide the taste and texture of sugar with about half the calories. They are used as food ingredients to replace sugar in an increasing variety of sugar-free and reduced-calorie foods due to their functional and health benefits.

Although polyols are also referred to as sugar alcohols, they are neither sugars nor alcohols. This term is used because part of their structure chemically resembles sugar and part is similar to alcohols. The U.S. Food and Drug Administration (FDA) is currently evaluating whether the term “polyol” would be less confusing to consumers than “sugar alcohol.”

What functional benefits do polyols offer?

Polyols vary in sweetness from about half as sweet as sugar to equally as sweet and their use depends on the function desired in a product. In addition to providing sweetness, polyols add bulk and some provide a smooth, creamy texture to sugar-free foods where this is desired. For example, polyols serve as useful alternatives to sugars in a wide range of products including ice cream, fillings, frostings, yogurts, and fruit spreads.

Polyols are frequently combined with low-calorie sweeteners such as aspartame, acesulfame-K, neotame, saccharin, stevia sweeteners and sucralose in products such as sugar-free chewing gums,

candies, frozen desserts and baked goods. Polyols provide a mild sweetness as well as the bulk and texture of sugar; the low-calorie sweeteners bring the sweetness up to the level consumers expect. In addition, polyols function well in canned fruits and tabletop sweeteners. Polyols also can improve product shelf life and stability by aiding moisture retention and controlling product crystallization.



Where is information about polyols found on a food product?

The ingredient list on a food label will provide the individual names of polyols used in the food.

Eight polyols are currently available:

- Erythritol
- Hydrogenated starch hydrolysates or polyglycitols
- Isomalt
- Lactitol
- Maltitol (including maltitol syrups)
- Mannitol
- Sorbitol
- Xylitol



The polyol content may be included voluntarily on the Nutrition Facts Panel. If a claim such as “sugar-free” is made on the label, the polyol content must be listed. According to FDA guidelines, the specific polyol may be listed in the Nutrition Facts Panel if only one polyol is used in the food. If more than one is used, the term “sugar alcohols” must be used.



What are their health benefits?

Reduced-calorie, sugar-free foods that are sweetened with polyols offer many benefits:

- Polyols taste like sugar, but have fewer calories than sugar.
- Polyols do not promote tooth decay.
- Polyols produce a low glycemic response that benefits all consumers, including those with diabetes.

Calorie Reduction — Since polyols are only partially absorbed by the body, they provide fewer calories per gram than other carbohydrates. Foods made with polyols therefore can provide the desired sweetness with fewer calories.

Dental Health Promotion — Polyols are widely recognized as non-cariogenic i.e. “toothfriendly” alternatives to sugars and other carbohydrates. The FDA has approved the use of the health claim “does not promote tooth decay” for sugar-free products containing polyols. Also, the American Dental Association has issued a position statement that sugar-free foods do not promote tooth decay. In October 2010, the European Food Safety Authority (EFSA)

adopted two opinions related to sugar-free chewing gum sweetened with polyols, concluding, “a cause and effect relationship has been established” between the consumption of sugar-free chewing gum and the reduction of tooth demineralization, plaque acid neutralization, and a reduction in incidence of caries.

Low Glycemic Response — Polyols are low digestible carbohydrates, i.e., they are digested and absorbed to a lesser extent than sugars and other carbohydrates, which results in very small increases in blood glucose and insulin levels following consumption. Therefore, products sweetened with polyols can be useful for individuals who are concerned about their blood sugar levels, such as people with diabetes. Food manufacturers are introducing many new food products using polyols to reduce the amount of sugar, calories, and the glycemic response of foods.

How should polyols be calculated in exchange lists for meal planning?

According to Diabetes Management Guidelines regarding carbohydrate counting, if all the carbohydrate in one serving of a food is from polyols and the total carbohydrate is less than 10 grams, it is considered a “free food.” This is because polyols contain significantly fewer calories than sugar. For foods with more than 10 grams of carbohydrate per serving, subtract half the grams of polyols from the grams of total carbohydrate and then calculate the exchanges.

What should a person do if he or she exhibits sensitivity to polyols?

For some individuals, excess consumption of polyol-containing foods (about 50 grams of polyols or more per day) may cause gastrointestinal (GI) effects similar to those of prunes or certain high fiber foods. GI symptoms, if they occur, are usually mild and temporary. If a person believes he/she is sensitive, the amount eaten on a single occasion should be reduced. Most people will adapt after a few days, the same way they do to high fiber foods.

For more info about polyols, visit: www.polyol.org



Calorie Control Council www.caloriecontrol.org

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