



Sugar Alcohols

What are sugar alcohols?

Sugar alcohols, or polyols, are sugar substitutes found in many sugar-free and reduced-sugar food products intended for individuals with diabetes or on carbohydrate-controlled meal plans. The term “sugar alcohols” can be confusing since they do not actually contain sugar or alcohol. They are actually carbohydrates that are chemically structured to resemble sugar and partially resemble alcohol. They are not completely absorbed and metabolized in the body; therefore, they provide fewer calories than most sugars. In addition, sugar alcohols do not promote tooth decay.

What are the most commonly used sugar alcohols?

The most commonly used sugar alcohols include sorbitol, mannitol, xylitol, maltitol, maltitol syrup, lactitol, erythritol, isomalt, and hydrogenated starch hydrolysates. The calorie content of sugar alcohols range from zero to three calories per gram compared to sucrose, or table sugar, which contains four calories per gram. Most sugar alcohols are less sweet than sucrose, but maltitol and xylitol are nearly as sweet as sucrose.

Why are the functions of sugar alcohols in foods?

Along with providing sweetness to foods, sugar alcohols also add bulk and texture, provide a cooling effect or taste, inhibit the browning that occurs during heating, and retains moisture in a variety of foods.

What are the effects of consuming sugar alcohols?

Since sugar alcohols are not completely absorbed and metabolized in the body, excessive consumption of sugar substitute-containing foods can cause abdominal gas, abdominal discomfort, and potentially diarrhea. It is the total daily intake of sugar alcohols that causes the GI disturbance and laxative effect; therefore, it is important to consider the time of the day they are consumed, amount ingested at one time, type of food, and individual response.

How can sugar alcohols be incorporated in a diabetic diet?

Since sugar alcohols are incompletely absorbed by the body and require little or no insulin for metabolism, individuals with diabetes can incorporate sugar alcohols in their meal plans by counting half of the grams of sugar alcohol as carbohydrates. It is important, however, diabetics to consult their physician or dietitian in order to safely incorporate sugar alcohols in their meal plans.

Where is the sugar alcohol content of foods located on the food label?

The sugar alcohol content of food is located in the ingredient list as well as on the Nutrition Facts panel if the product uses the terms “sugar-free” or “no added sugar” or if the product contains more than one sugar alcohol.

Sugar Alcohols	Calories per gram	Approximate Sweetness (sucrose =100%)	Typical Food Applications
Sorbitol	2.6	50 - 70%	Sugar-free candies, chewing gums, frozen desserts and baked goods
Xylitol	2.4	100%	Chewing gum, gum drops and hard candy, pharmaceuticals and oral health products, such as throat lozenges, cough syrups, children’s chewable multivitamins, toothpastes and mouthwashes; used in foods for special dietary purposes
Maltitol	2.1	75%	Hard candies, chewing gum, chocolates, baked goods and ice cream
Isomalt	2.0	45 - 65%	Candies, toffee, lollipops, fudge, wafers, cough drops, throat lozenges
Lactitol	2.0	30 - 40%	Chocolate, some baked goods (cookies and cakes), hard and soft candy and frozen dairy desserts
Mannitol	1.6	50 - 70%	Dusting powder for chewing gum, ingredient in chocolate-flavored coating agents for ice cream and confections
Erythritol	0 - 0.2*	60 - 80%	Bulk sweetener in low calorie foods
Hydrogenated Starch Hydrolysates (HSH)	3	25 - 50%	Bulk sweetener in low calorie foods, provide sweetness, texture and bulk to a variety of sugarless products

Reference: International Food Information Council. “Sugar Alcohols Fact Sheet”. 15 Apr 2009
 <<http://www.ific.org/publications/factsheets/sugaralcoholfs.cfm>>.

