

All Substitutes Are Not Equal

By Sally Squires
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[Mary Poppins](#) knew this secret: We are born with an innate preference for sweetness. As she liked to sing: "A spoonful of sugar helps the medicine go down."

Trouble is that few people stop with a spoonful. Despite the obesity epidemic, a new report in the *Journal of the [American Dietetic Association](#)* notes that Americans still eat more foods with added sugar and fat than they should and often fall short on the healthful fare. No surprise there.

But thanks to a growing number of sugar substitutes *and* other sweeteners, it's now possible for everyone -- even the estimated 71 million Americans dieting -- to soothe a sweet tooth without exceeding daily calorie goals. That's good, because the average adult has only about 200 "discretionary calories" per day for food and beverages with added sugar, added fat and alcohol.

In 2007, an estimated 194 million Americans consumed products sweetened with sugar substitutes, according to the Calorie Control Council, an industry group. That's 14 million more than in 2004. The council reports that the most popular are sugar-free and reduced-sugar beverages, ice cream and desserts; chewing gum; and products spooned just like sugar into coffee or tea.

Alternative sweeteners promise flavor with few or no calories. (Find out how well they deliver in tomorrow's Food section, which puts sugar substitutes to the taste and cooking test in a variety of recipes.)

Also on the market are "natural" sweeteners such as Whey Low. It's made from fructose, the sugar found in fruit; sucrose, ordinary table sugar; and lactose, the non-sweet-tasting sugar found in dairy products. At just four calories per teaspoon, Whey Low pours and bakes just like sugar, with 75 percent fewer calories. (There is also a Whey Low without sucrose for people with diabetes.)

Blue agave nectar, extracted from a cactus-like plant, is another natural sweetener that is growing in popularity. But it's not much of a calorie-saver: It has 15 calories per teaspoon, just one fewer than table sugar and six fewer than honey. It's touted as sweeter than either, so that smaller amounts can be used, and is purported to have a lower glycemic index, which means it may raise blood sugar less than the others. (If you have diabetes, check with your doctor before using this product.)

Calories are one thing. Safety is another.

In 1970, the [Food and Drug Administration](#) banned a widely used sugar substitute, cyclamate, because of cancer concerns. In 1977, a Canadian study found that in large doses saccharin -- the sweetener in Sweet'N Low -- caused bladder cancer in rats. The FDA considered banning saccharin, but Congress stepped in to give the sweetener a reprieve and has extended a moratorium on its ban several times since then.

In 2004, the American Dietetic Association reviewed the use of sweeteners and concluded that "consumers can safely enjoy a range of nutritive and non-nutritive sweeteners when consumed in a diet that is guided by current federal nutrition recommendations."

Since then, some concerns have arisen about two other substitutes, aspartame and acesulfame K.

Aspartame is marketed as NutraSweet and Equal, and found in a wide range of products from diet drinks to sugar-free ice cream. Aspartame contains amino acids -- the building blocks of protein -- and methanol, an alcohol. It isn't heat-stable, so it doesn't do well in baking. An Italian research team found lymphoma and leukemia among female rats in a long-term study of aspartame.

Acesulfame K, sold as Sunett, is not metabolized by the body and so contains zero calories. It's found in baked goods, diet soft drinks, sugar-free gum, Domino Pure D'Lite and Sweet One, a sugar substitute for baking. Some flawed studies in the 1970s linked this sugar substitute to cancer. In 1996 the [Center for Science in the Public Interest](#) urged the FDA to require better testing before permitting acesulfame K in soft drinks. Large doses of breakdown products from acesulfame K have been shown to affect the thyroid in rats, rabbits and dogs, the CSPI notes.

Manufacturers, the FDA and the Calorie Control Council say that these products are safe. But in the May issue of its Nutrition Action newsletter, the CSPI called these products and saccharin either unsafe or poorly tested. The only artificial sweetener to get a "safe" grade from the consumer advocacy group is sucralose, a.k.a. [Splenda](#).

Other options that you'll likely see appearing on grocery shelves include erythritol, a sugar alcohol. It's found in Zsweet. Sugar alcohols contain slightly fewer calories than sugar, but they don't spike blood sugar levels as much so are often recommended for people with diabetes. They can cause gas and loose bowels because they are not well digested.

Neotame is another sugar substitute; it's found in Clabber Girl Sugar Replacer and Domino Pure D'Lite. Approved in 2002 by the FDA, it has zero calories and is made from two amino acids.

Bottom line: If you're looking for sweetness with fewer calories, try sucralose or Whey Low, which seem to have flavor with few risks.

Check tomorrow's Food section for more on sugar substitutes and sweeteners.