

Artificial Sweeteners

Human beings have had a fondness for sweet tasting foods since the beginning of time and have always added sweet substances to food, such as honey in the beginning and later on, sugar. However, the consumption of sugar and sugar containing foods is on the increase and can be seen in the increasing prevalence of obesity amongst adults and children. Large amounts of sugar add extra kilojoules to the diet, which can cause weight gain. As a way of enjoying their favourite foods without increasing the energy content or to control blood glucose levels, many people substitute sugar with artificial sweeteners — also referred to as **sugar substitutes or low-calorie sweeteners**.

What are artificial sweeteners?

Artificial sweeteners are chemicals or natural compounds that offer the sweetness of sugar without as many calories. Because the substitutes are much sweeter than sugar, it takes a much smaller quantity to create the same sweetness. Products made with artificial sweeteners have a much lower calorie count than do those made with sugar.

FDA-Approved Artificial Sweeteners

The Food and Drug Administration (FDA) has approved the following low-calorie sweeteners for use in a variety of foods. The FDA has established an "acceptable daily intake" (ADI) for each sweetener. This is the maximum amount considered safe to eat each day during your lifetime. ADIs are intended to be about 100 times less than the smallest amount that might cause health concerns.

Artificial sweetener	ADI*	Estimated ADI equivalent**	OK for cooking?
Aspartame	50 milligrams (mg) per kilogram (kg)	18 to 19 cans of diet cold drink	No
Saccharin	5 mg per kg	9 to 12 packets of sweetener	Yes
Acesulfame K	15 mg per kg	30 to 32 cans of diet lemon-lime soda***	Yes
Sucralose	5 mg per kg	6 cans of diet cold drink***	Yes

*FDA-established acceptable daily intake (ADI) limit per kilogram (2.2 pounds) of body weight.

**Product-consumption equivalent for a person weighing 150 pounds (68 kilograms).

***These products usually contain more than one type of sweetener.

Safety of artificial sweeteners

According to the current literature and the National Cancer Institute in the USA, however, *there's no scientific evidence and the possible risk of artificial sweeteners to induce cancer seems to be negligible*.

Aspartame does carry a cautionary note, however. It isn't safe for people who have the rare hereditary disease phenylketonuria (PKU). Products that contain aspartame must carry a PKU warning on the label.

Artificial sweeteners are often used as part of a weight-loss plan or as a means to control weight gain. People with diabetes may use artificial sweeteners because they make food taste sweet without raising blood sugar levels. But keep in mind that if you do have diabetes, some foods containing artificial sweeteners, such as sugar-free yogurt, can still affect your blood sugar level due to other carbohydrates or proteins in the food. Some foods labeled "sugar-free" — such as sugar-free cookies and chocolates — may contain sweeteners, such as sorbitol or mannitol, which contain calories and can affect your blood sugar level. Some sugar-free products may also contain flour, which will raise blood sugar levels. Also, remember

that foods containing sugar substitutes may also contain calories that may undermine your ability to lose weight and control blood sugar.

Use artificial sweeteners sensibly and in moderation. It's OK to substitute a diet cold drink for a regular cold drink, for example, but drink diet cold drink in moderation (≤ 500 ml/day), as well as 8 glasses of water daily, herbal tea etc.

References:

Weihrauch MR, Diehl V 2004, 'Artificial sweeteners-do they bear a carcinogenic risk?', *Annals of Oncology*, vol. 15, pp. 1460-1465.

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