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## Does Aspartame Cause Cancer?

### What is aspartame?

Aspartame is an artificial sweetener, sold under brand names such as NutraSweet® and Equal®, that has been in use in the United States since the early 1980s. It is used in many foods and beverages because it is much sweeter than sugar, so much less of it can be used to give the same level of sweetness.

Aspartame is commonly used as a tabletop sweetener, as a sweetener in prepared foods and beverages, and in recipes that don't require too much heating (since heat breaks down aspartame). It can also be found as a flavoring in some medicines.

### Does aspartame cause cancer?

Rumors and concerns about aspartame causing a number of health problems, including cancer, have been around for many years. Some of the concerns about cancer stem from the results of studies in rats published by a group of Italian researchers, which suggested aspartame might increase the risk of some blood-related cancers (leukemias and lymphomas). However, later reviews of the data from these studies have called these results into question. The results of epidemiologic studies (studies of groups of people) of possible links between aspartame and cancer (including blood-related cancers) have not been consistent.

**In general, the American Cancer Society does not determine if something causes cancer (that is, if it is a carcinogen), but we do look to other respected organizations for help with this.** Based on current research, some of these organizations have made the following determinations:

- The [US Food and Drug Administration \(FDA\)](https://www.fda.gov)<sup>1</sup> has concluded that “the use of aspartame as a general purpose sweetener... is safe.”

- The [European Food Safety Authority \(EFSA\)](#)<sup>2</sup> has stated, “Studies do not suggest an increased risk associated with aspartame consumption for... leukaemia, brain tumours or a variety of cancers, including brain, lymphatic and haematopoietic (blood) cancers.”

Though research into a possible link between aspartame and cancer continues, these agencies agree that studies done so far have not found such a link.

## Is aspartame regulated?

In the United States, artificial sweeteners such as aspartame are regulated by the FDA. These products must be tested for safety and approved by the FDA before they can be used. The FDA also sets an acceptable daily intake (ADI) for each sweetener, which is the maximum amount considered safe to consume each day during a person's lifetime.

The FDA has set the ADI for aspartame at 50 milligrams per kilogram (mg/kg; 1 kg=2.2 lb) of body weight per day.

The EFSA, which regulates food additives in the European Union, recommends a slightly lower ADI for aspartame, at 40 mg/kg/day.

To help put these levels in perspective, the FDA estimates that if all of the added sugar in the diet of an average 60 kg (132 lb) person were replaced by aspartame, it would result in an exposure of about 8 to 9 mg/kg/day.

And according to the EFSA, in order to reach the ADI of 40 mg/kg/day, an adult weighing 60 kg (132 lb) would have to drink 12 cans of a diet soft drink (if it contained aspartame at the maximum permitted levels of use), every day. But in reality, aspartame is used at lower levels, and amounts found in soft drinks can be 3 to 6 times less than the maximum permitted levels. This means you would have to drink 36 cans or more to reach the ADI.

## Can aspartame be avoided?

Aspartame hasn't been linked conclusively to any specific health problems, other than for people with phenylketonuria (PKU). This is a rare genetic disorder (present at birth) in which the body can't break down phenylalanine, an amino acid found in many foods (and in aspartame). This is why any products (including medicines) containing aspartame must carry the warning “PHENYLKETONURICS: CONTAINS PHENYLALANINE.”

For other people who want to avoid aspartame, the easiest way to do this is to look for this same warning, or to check the ingredient labels before buying or eating foods or drinks. If aspartame is in the product it will be listed.

## To learn more

Along with the American Cancer Society, other sources of information about aspartame include:

**European Food Safety Authority (EFSA)** Aspartame (see FAQ section):

[www.efsa.europa.eu/en/topics/topic/aspartame](http://www.efsa.europa.eu/en/topics/topic/aspartame)<sup>3</sup> EFSA Explains the Safety of Aspartame:

[www.efsa.europa.eu/sites/default/files/corporate\\_publications/files/factsheetaspartame.pdf](http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/factsheetaspartame.pdf)<sup>4</sup>

**US Food and Drug Administration (FDA)** Center for Food Safety and Applied Nutrition (CFSAN): 1-888-723-3366 (1-888-SAFEFOOD) Additional Information about High-Intensity Sweeteners Permitted for Use in Food in the United States:

[www.fda.gov/food/ingredientspackaginglabeling/foodadditivesingredients/ucm397725.htm](http://www.fda.gov/food/ingredientspackaginglabeling/foodadditivesingredients/ucm397725.htm)<sup>5</sup>

**National Cancer Institute (NCI)** Artificial Sweeteners and Cancer:

[www.cancer.gov/about-cancer/causes-prevention/risk/diet/artificial-sweeteners-fact-sheet](http://www.cancer.gov/about-cancer/causes-prevention/risk/diet/artificial-sweeteners-fact-sheet)<sup>6</sup>

## Hyperlinks

1. <https://www.fda.gov/>
2. <https://www.efsa.europa.eu/>
3. <https://www.efsa.europa.eu/en/topics/topic/aspartame>
4. [https://www.efsa.europa.eu/sites/default/files/corporate\\_publications/files/factsheet\\_aspartame.pdf](https://www.efsa.europa.eu/sites/default/files/corporate_publications/files/factsheet_aspartame.pdf)
5. <https://www.fda.gov/food/ingredientspackaginglabeling/foodadditivesingredients/ucm397725.htm>
6. <https://www.cancer.gov/about-cancer/causes-prevention/risk/diet/artificial-sweeteners-fact-sheet>

## References

European Food Safety Authority. Aspartame. Accessed at <https://www.efsa.europa.eu/en/topics/topic/aspartame> on October 17, 2018.

European Food Safety Authority ANS Panel (EFSA Panel on Food Additives and Nutrient Sources added to Food), 2013. Scientific Opinion on the re-evaluation of aspartame (E 951) as a food additive. *EFSA Journal*. 2013;11(12):3496.

McCullough ML, Teras LR, Shah R, et al. Artificially and sugar-sweetened carbonated beverage consumption is not associated with risk of lymphoid neoplasms in older men and women. *J Nutr*. 2014;144(12):2041-2049.

National Cancer Institute. Artificial Sweeteners and Cancer. 2016. Accessed at <https://www.cancer.gov/about-cancer/causes-prevention/risk/diet/artificial-sweeteners-fact-sheet> on October 15, 2018.

US Food and Drug Administration. Additional Information about High-Intensity Sweeteners Permitted for Use in Food in the United States. 2018. Accessed at <https://www.fda.gov/food/ingredientspackaginglabeling/foodadditivesingredients/ucm397725.htm> on October 17, 2018.

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US Food and Drug Administration. High-Intensity Sweeteners. 2014. Accessed at <https://www.fda.gov/food/ingredientspackaginglabeling/foodadditivesingredients/ucm397716.htm> on October 17, 2018.

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