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Aspartame and Cancer Risk

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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 for most cancers. Some studies have suggested a possible link, but others have not.

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.

World Health Organization (WHO)

International Agency for Research on Cancer (IARC)

IARC is the cancer research agency of the WHO. One of its major roles is to identify causes of cancer.

IARC classifies aspartame as “possibly carcinogenic to humans” (Group 2B), based on *limited* evidence it might cause cancer (specifically liver cancer) in people. IARC also notes there is *limited* evidence for cancer in lab animals and *limited* evidence related to possible mechanisms for it causing cancer.

It’s important to know that IARC classifications are based on the **strength of the evidence** of whether something can cause cancer in humans, *not* how likely it is to cause cancer. The Group 2B classification is the third highest out of 4 levels, and it is generally used either when there is limited, but not convincing, evidence for cancer in humans, or when there is convincing evidence for cancer in lab animals, but not both.

To learn more about the IARC classifications, see [Determining if Something Is a Carcinogen](#)¹ and [Known and Probable Human Carcinogens](#)².

Joint FAO/WHO Expert Committee on Food Additives (JECFA)

JECFA is an international expert committee run jointly by the Food and Agriculture Organization (FAO) and the WHO. One of its main roles is to evaluate the safety of food additives. It considers all possible health impacts, including cancer.

JECFA assesses the risk that a specific type of harm (such as cancer) will occur in certain situations, considering how, how often, and how much people might be exposed to a food additive.

After completing a dietary exposure assessment, JECFA has concluded that “the

evidence of an association between aspartame consumption and cancer in humans is not convincing.”

Based on current dietary exposure estimates, JECFA has concluded that dietary exposure to aspartame does not pose a health concern.

Overall conclusions

Commenting on the assessments from both the IARC and JECFA, the Director of the Department of Nutrition and Food Safety for WHO has concluded, “The assessments of aspartame have indicated that, while safety is not a major concern at the doses which are commonly used, potential effects have been described that need to be investigated by more and better studies.”

While the science is still evolving, the American Cancer Society supports the call from IARC and other organizations for more research on aspartame and other artificial sweeteners. We also continue to conduct our own studies to better understand their possible link with cancer, as well as to help lower cancer risk and improve prevention efforts and care in other areas.

Food regulatory authorities

While it’s not the main role of food regulatory authorities to determine if something causes cancer, they do look at the evidence for this when determining if foods (and food additives) are safe to eat.

US Food and Drug Administration (FDA)

The [US Food and Drug Administration \(FDA\)](#)³ is responsible for the safety of ingredients added to foods in the United States, including artificial sweeteners like aspartame (see “Is aspartame regulated?” below).

The FDA has stated: “Scientific evidence has continued to support the FDA’s conclusion that aspartame is safe for the general population when made under good manufacturing practices and used under the approved conditions of use.”

European Food Safety Authority (EFSA)

The [European Food Safety Authority \(EFSA\)](#)⁴ regulates food additives in the European Union. After completing a risk assessment on aspartame in 2013, the EFSA stated, “Aspartame and its breakdown products are safe for human consumption at current

levels of exposure.”

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 (1 kg=2.2 lb) of body weight per day (50 mg/kg/day).

Both JECFA and the EFSA recommend a slightly lower ADI for aspartame, at 40 mg/kg/day.

To help put these levels in perspective, the FDA estimates that a person weighing 60 kg (132 lb) would have to consume about 75 packets of aspartame in a day to reach the upper end of the ADI of 50 mg/kg/day.

Similarly, a person weighing 70 kg (154 lb) would have to consume at least 9–14 cans of diet soda per day (depending on the level of aspartame in each can) to exceed the ADI of 40 mg/kg/day used by JECFA/EFSA.

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:

International Agency for Research on Cancer (IARC) Aspartame hazard and risk assessment results released: www.iarc.who.int/featured-news/aspartame-hazard-and-risk-assessment-results-released⁵

European Food Safety Authority (EFSA) Aspartame: www.efsa.europa.eu/en/topics/topic/aspartame⁶ EFSA Explains the Safety of Aspartame: www.efsa.europa.eu/sites/default/files/corporate_publications/files/factsheetaspartame.pdf⁷

US Food and Drug Administration (FDA) Aspartame and Other Sweeteners in Food: www.fda.gov/food/food-additives-petitions/aspartame-and-other-sweeteners-food⁸

National Cancer Institute (NCI) Artificial Sweeteners and Cancer: www.cancer.gov/about-cancer/causes-prevention/risk/diet/artificial-sweeteners-fact-sheet⁹

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/understanding-cancer-risk/determining-if-something-is-a-carcinogen.html
2. www.cancer.org/cancer/risk-prevention/understanding-cancer-risk/known-and-probable-human-carcinogens.html
3. www.fda.gov/
4. www.efsa.europa.eu/
5. www.iarc.who.int/featured-news/aspartame-hazard-and-risk-assessment-results-released
6. www.efsa.europa.eu/en/topics/topic/aspartame
7. www.efsa.europa.eu/sites/default/files/corporate_publications/files/factsheetaspartame.pdf
8. www.fda.gov/food/food-additives-petitions/aspartame-and-other-sweeteners-food
9. www.cancer.gov/about-cancer/causes-prevention/risk/diet/artificial-sweeteners-fact-sheet

Debras C, Chazelas E, Srour B, et al. Artificial sweeteners and cancer risk: Results from the NutriNet-Santé population-based cohort study. *PLoS Medicine*. 2022; 19(3):e1003950.

European Food Safety Authority. Aspartame. 2023. Accessed at <https://www.efsa.europa.eu/en/topics/topic/aspartame> on July 6, 2023.

European Food Safety Authority. EFSA completes full risk assessment on aspartame and concludes it is safe at current levels of exposure. 2013. Accessed at <https://www.efsa.europa.eu/en/press/news/131210> on July 6, 2023.

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.

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