

Artificially Sweetened Drinks Can Lead to an Early Grave

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✓ Fact Checked

July 21, 2022

STORY AT-A-GLANCE

- › In a study analyzing data from 451,743 people from 10 countries over 20 years, researchers found that those who drank artificially sweetened drinks suffered a higher all-cause mortality – specifically from circulatory disease – while those drinking sugar-sweetened drinks had a higher risk of death from digestive disease
- › These associations remained constant, even when the researchers removed confounding factors such as higher body mass index, smoking and other mortality risks
- › One of the most commonly used artificial sweeteners is aspartame, which is associated with increased risk of obesity, as it appears to encourage sugar cravings and does not activate the brain's reward pathway in the same way natural sweeteners do. Research also links aspartame with neurobehavioral symptoms such as insomnia, depression, headaches and seizures
- › Alterations in gut bacteria by artificial sweeteners may contribute to weight gain and insulin resistance. The American Beverage Association is pushing back as the American Academy of Pediatrics and American Heart Association call for federal and state policy changes to protect children and adolescents from marketing targeted at them

This article was previously published September 18, 2019, and has been updated with new information.

According to the CDC, 6 in 10 U.S. adults now have chronic health conditions like cancer, heart disease, diabetes and stroke, while 4 in 10 have two or more of these diseases.¹

The triggers for many of these conditions are lifestyle choices including smoking and excessive alcohol use.

Big Soda companies, intent on protecting their profits, have been promoting the message that the obesity epidemic is being driven by a lack of activity as opposed to indulging in sugar-based foods and beverages. However, there is overwhelming scientific evidence that you can't out-exercise your diet.²

Unfortunately, many of the no-sugar options contain aspartame, an artificial sweetener with several known health problems. This is believed to introduce great risk, as recent research³ data show an association between drinking any artificially sweetened drinks and rising rates of mortality.

20-Year Study: Diet Drinks Increase Risk of an Early Death

The new study involved a population-based cohort of 521,330 people from 10 European countries. The researchers' objective was to analyze any association between sugar-sweetened and artificially sweetened drinks and mortality.⁴ They engaged participants from an ongoing study recruited between January 1, 1992, and December 31, 2000.

Any participants who had cancer, stroke or diabetes were excluded, as were those who did not include follow-up information. The number of participants was then reduced to 451,743, of which 71.1% were women.⁵

The results showed there was a higher all-cause mortality in those who drank two or more glasses each day of soft drinks, whether they were sugar-sweetened or artificially-sweetened. There was an association between artificially sweetened soft drinks and death from circulatory disease, as well as a link between sugar-sweetened soft drinks and death from digestive diseases.⁶

The authors concluded the results were important enough that public health campaigns should be initiated to warn consumers to limit consumption.⁷ While results of the study were significant, it's important to know one measured glass in the study was equivalent to 250 ml (8.4 ounces),^{8,9} which is less than the standard 354 ml per can (12 ounces).

In other words, the results were based on less than what most people drink with each serving. The results from this study suggest policies aimed at cutting sugar consumption may have disastrous consequences when producers and manufacturers reformulate their products to use artificial sweeteners.

Association Remains When Confounding Factors Removed

Recent studies show similar results. To determine whether soft drink consumption was a marker or an indication for an overall unhealthy lifestyle, researchers eliminated "confounding" factors – conditions that could influence or change the results. Chief researcher Neil Murphy from the World Health Organization International Agency for Research on Cancer said in an interview with The Washington Post:¹⁰

"In our study, high soft drinks consumers had a higher body mass index (BMI) and were also more likely to be current tobacco smokers. We made statistical adjustments in our analyses for BMI, smoking habits and other mortality risk factors which may have biased our results, and the positive associations remained."

The researchers found there were similar associations in participants who were smokers and nonsmokers as well as those who were lean or obese. Sarah Reinhardt from the Union of Concerned Scientists commented:¹¹

"The results of this study are significant. It reinforces a fact that won't surprise anyone in the nutrition field: Processed foods loaded with artificial ingredients will never be the magic bullet to better health, no matter how low they are in sugar. Our bodies are smarter than that."

According to the CDC, the percentage of children and adolescents who are obese has more than tripled since the 1970s. Data from 2016 show nearly 20% of school-aged children and young adults are obese.¹²

The prevalence for adult obesity in 2016 was 39.8%; this leads to conditions including heart disease, stroke, Type 2 diabetes and certain types of cancer.¹³ One of the risks

associated with artificial sweeteners is obesity.^{14,15}

Artificial Sweetener Tied to Obesity

One of the most commonly used artificial sweeteners is aspartame, also marketed under the brand names NutraSweet, Equal and Sugar Twin. Relatively new on the market, and chemically closely related to aspartame,¹⁶ is Neotame,¹⁷ made by NutraSweet.

Researchers have made the link between the rise in the number of people who are obese with the widespread use of artificial sweeteners. In one review published in the Yale Journal of Biology and Medicine, researchers reviewed the epidemiological and experimental studies of the effect aspartame has on weight.¹⁸

They found evidence suggesting artificial sweeteners do not activate the reward pathway in the same way natural sweeteners do. In addition, artificial sweeteners appeared to encourage sugar cravings and dependence, thereby training flavor preferences.¹⁹

Knowledge that artificial sweeteners are associated with weight gain has been documented since the 1980s. During the San Antonio Heart Study involving 4,000 adults, researchers found that those using artificial sweeteners had a BMI greater than that of nonusers, leading researchers to consider whether artificial sweeteners were actually fueling the obesity epidemic.²⁰

In a second study in 1986 examining 78,694 women ages 50 to 69, researchers found that artificial sweetener use increased participants' weight, and consumption decreased with age. Those who used artificial sweeteners were more likely to gain weight regardless of how much they weighed initially. The results were not explained by differences in food patterns.²¹

Artificial Sweeteners Create More Health Problems

Despite increasing evidence that aspartame has negative health effects, its use has continued. In one study²² researchers asked healthy adults to consume a high-aspartame diet for eight days followed by a low-aspartame diet for eight days, with a two-week washout between.

During the high-aspartame, eight-day period individuals suffered from depression, poor mood and headache. They also performed worse on spatial orientation tests, indicating aspartame had a significant effect on neurobehavioral health.²³

Researchers have also reported that aspartame may trigger insomnia and seizures linked to changes in concentrations of catecholamine in the brain.²⁴ Another study²⁵ was designed to evaluate whether people with mood disorders are more vulnerable to the effects of aspartame.

Researchers included 40 people with a diagnosis of unipolar depression and another 40 without any history of psychiatric disorders. The study was halted by the Institutional Review Board after just 13 had completed the study, because they experienced severe reactions.

While investigating the effects of aspartame on oxidative stress in an animal model, researchers observed that animals who were fed aspartame underwent neurological oxidative stress. They theorized this may have been related to free radicals from the methanol released during aspartame metabolism.²⁶

Gut Bacteria Altered by Artificial Sweeteners

Unfortunately, many who struggle with their weight may choose foods with artificial sweeteners over sugar believing it's the healthier choice. In one study²⁷ published in Nature, scientists reported that they found that artificial sweeteners such as aspartame may lead to glucose intolerance by altering gut microbiota. Their results indicated artificial sweeteners trigger dysbiosis and metabolic abnormalities.

In another animal study,²⁸ mice that were fed aspartame-laced drinking water developed symptoms of metabolic syndrome. The researchers found that a metabolite of

aspartame, called phenylalanine, blocked the activity of a gut enzyme known as alkaline phosphatase.²⁹

This enzyme³⁰ was previously found to prevent the development of metabolic syndrome. Each of the mice fed aspartame had measurably higher blood sugar and raised levels of TNF-alpha, an inflammatory protein, suggesting a systemic inflammatory response to aspartame.³¹

In a 2014 animal study,³² researchers found gut microbiota explanations for the negative effect aspartame has on insulin tolerance and the influence it has on gut microbial composition. Fecal analyses showed aspartame increased abundance of Enterobacteriaceae and Clostridium leptum.

Although the animals eating aspartame ate fewer calories, they experienced elevated fasting blood sugar levels. Aspartame influences changes to gut microbiota, insulin resistance and food cravings. Each of these is related to weight gain and the development of circulatory conditions.

American Beverage Association Pushing Back

In what amounts to efforts to protect profits while ignoring the health damage their products inflict on consumers, the American Beverage Association (ABA) is pushing back hard.³³ Spokesperson for the ABA, William Dermody, told FOX Business:³⁴

"Soft drinks are safe to consume as part of a balanced diet and the authors of this study acknowledge their research does not indicate otherwise. America's Beverage Companies are committed to innovation and working to reduce the sugar people get from beverages by introducing more options than ever before with less sugar and zero sugar."

The ABA is a group that lobbies on behalf of beverage producers. Dermody says more than half of all drinks purchased don't contain sugar. He also said,³⁵ "No one should overconsume sugar and we stand by the safety and quality of our products."

The ABA released similar statements in 2011 and 2013 when other research regarding low-calorie artificial sweeteners was published and could not be quashed. In 2011³⁶ they reiterated their stance on low-calorie sweeteners as beneficial, and included what they depicted as support from health organizations:

"What we know for certain is that low-calorie sweeteners can help reduce calories and sugar intake and aid in maintaining a healthy weight – positions supported by health organizations including the American Diabetes Association and the American Dietetic Association."

In 2013³⁷ the organization decided a press release was necessary to address what they called an opinion piece published in Trends in Endocrinology & Metabolism,³⁸ which included charts, a glossary and 54 citations to past published studies. The ABA said:³⁹

"This is an opinion piece not a scientific study. Low-calorie sweeteners are some of the most studied and reviewed ingredients in the food supply today. They are safe and an effective tool in weight loss and weight management, according to decades of scientific research and regulatory agencies around the globe."

U.S. Right to Know, a nonprofit research group,⁴⁰ summarized some of the ABA'S past work, writing⁴¹ that the ABA defends the use of flame retardant chemicals in soda, claiming water is polluted as well. They've downplayed the risks associated with benzene after it was discovered in soft drinks and refer to content raising questions about artificial sweeteners as "internet myths."

Soda Companies Directing Advertising at Teens

If their core consumers become ill and diseased, companies manufacturing diet soda drinks must expand their customer base. They've chosen direct advertising to teenagers using some of the same strategies as vape manufacturers.

The American Academy of Pediatrics and the American Heart Association put out a joint statement in April 2019 calling for a public policy to reduce the risk that sugary drinks

pose to the health of children and adolescents.⁴²

In the statement, the authors concluded that consuming added sugars, in particular those added to beverages, is a significant health risk, and encouraged pediatricians to counsel families to decrease consumption of sugary drinks and increase their intake of water.⁴³

Many of the published recommendations indicated a lack of support in nutrition and prevention guidelines from local, state and federal government. The team recommended policies at all levels to reduce sugar consumption. They also recommended that federal and state governments support efforts to decrease the marketing of sugary drinks to children and adolescents.⁴⁴

The group recommended that federal nutrition programs work to promote the purchase of healthy foods and beverages and to ensure that children have access to credible nutrition information. Importantly, the group made a notable argument regarding the contribution that hospitals and doctors have made toward poor nutrition.

Seeing your physician drink a Coke, for instance, or being able to purchase one at the hospital reinforces the idea that the habit is safe and normal.⁴⁵ Referencing a 2012 Federal Trade Commission Report,⁴⁶ the policy statement drew a comparison to tobacco companies that directed their marketing efforts at children and adolescents:⁴⁷

"Similar to tobacco companies, sugary drink manufacturers aim to appeal to children and adolescents by associating their product with celebrity, glamour, and coolness.

Despite the existence of the Children's Food and Beverage Advertising Initiative, an industry-initiated, self-regulatory body designed to limit marketing of unhealthful food and beverage products to children younger than 12 years, children and adolescents are frequently exposed to sugary drink advertisements.

In 2009, carbonated beverage companies reported \$395 million in youth-directed expenditures, approximately 97% of which were directed at teenagers."

While the advertising for clean, pure water may not be as enticing, the health benefits are life-giving. If you enjoy flavored water, make your own by adding a slice of lemon or lime. Carry your own water in a glass bottle and avoid the multiple problems associated with plastic containers.

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