

aspartame

aspartame overview

Discovered in 1965, aspartame is a low-calorie sweetener that is approximately 200 times sweeter than sucrose. Aspartame is unique among low-calorie sweeteners in that it is completely broken down by the body into its components – the amino acids, aspartic acid and phenylalanine, and a small amount of methanol. These components are found in much greater amounts in common foods, such as meat, milk, fruits, and vegetables, and are used by the body in the same ways whether they come from aspartame or common foods.

Aspartame is one of the most thoroughly studied food ingredients ever, with more than 200 scientific studies supporting its safety. In addition to the Food and Drug Administration (FDA), the Joint Expert Committee on Food Additives (JECFA) of the World Health Organization and Food and Agriculture Organization, the Scientific Committee on Food of the European Union (SCF), and regulatory agencies in more than 100 countries have reviewed aspartame and found it to be safe for use.

Consumer research shows that low- and reduced-calorie foods and beverages have become part of the lifestyle of millions of men and women who want to stay in better overall health, control their weight, or simply enjoy the many low- or reduced-calorie products available. Currently, aspartame is found in more than 6,000 products and is consumed by over 200 million people around the world.

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what is aspartame?

Aspartame is composed of two amino acids, aspartic acid and phenylalanine, as the methyl ester. Amino acids are the building blocks of protein. Aspartic acid and phenylalanine are also found naturally in protein containing foods, including meats, grains and dairy products. Methyl esters are also found naturally in many foods such as fruits and vegetable and their juices.

Upon digestion, aspartame breaks down into three components (aspartic acid – 40 percent by weight, phenylalanine – 50 percent by weight and methanol – 10 percent by weight), which are then absorbed into the blood and used in normal body processes. Neither aspartame nor its components accumulate in the body and these components are used in the body in the same ways as when they are derived from common foods.

Further, the amounts of these components from aspartame are small compared to the amounts from other food sources. For example, a serving of no-fat milk provides about six times more phenylalanine and 13 times more aspartic acid compared to an equivalent amount of diet beverage sweetened 100 percent with aspartame. Likewise, a serving of tomato juice provides about six times more methanol compared to an equivalent amount of diet beverage sweetened with aspartame.



In which foods and beverages is aspartame found?

Aspartame is found in about 6000 products around the world, including carbonated soft drinks, powdered soft drinks, chewing gum, confections, gelatins, dessert mixes, puddings and fillings, frozen desserts, yogurt, tabletop sweeteners, and some pharmaceuticals such as vitamins and sugar-free cough drops. In the United States, all food ingredients, including aspartame, must be listed in the ingredient statement on the food label.

Can Aspartame withstand high heat and be used for baking?

Several tabletop sweeteners containing aspartame as the sweetening ingredient can be used in a wide variety of recipes. However, in some recipes requiring lengthy heating or baking, a loss of sweetness may occur; this is not a safety issue - simply the product may not be as sweet as desired. Therefore, it is best to use tabletop sweeteners with aspartame in specially designed recipes available from the manufacturers of these tabletop sweeteners. Aspartame tabletop sweeteners may also be added to some recipes at the end of heating to maintain sweetness.



aspartame consumption and metabolism

What is the Acceptable Daily Intake (ADI) of Aspartame?

The Acceptable Daily Intake (ADI) is an important regulatory concept, which is frequently misunderstood. The FDA sets an ADI for food ingredients at a level determined to be safe for everyday consumption for a lifetime without risk. Consuming more than the ADI does not mean an effect will occur because the ADI includes a wide margin of safety above what is deemed the No Observed Effect Level (NOEL). The ADI for aspartame is set at 50 mg/kg bw/day, which is 100 times lower than the NOEL. According to the FDA Fact Sheet on low calorie sweeteners, “For each of the approved sweeteners, the typical amount used by U.S. consumers is well within designated ‘acceptable daily intake levels (ADI),’ or levels that can be consumed safely every day over a lifetime,” thus, the ADI is not a specific point at which safety ends and possible health concerns begin. The chart below describes the approximate number of servings of various aspartame-containing products that an adult and child would need to consume to reach the ADI for aspartame.



Extensive market research has shown that aspartame consumption patterns for the general population and various subgroups are well below the ADI. Aspartame consumption by high-level consumers (90th percentile) in the general population, including children, is between five percent and 10 percent of the ADI. This means that nine out of 10 people consume less than 10 percent of the ADI, which is well within government guidelines.

Aspartame-containing Product	Aspartame (mg)	Approximate number of servings per day to reach the ADI	
		Adult (150 lb.)	Child (50 lb.)
Diet Soda (12 oz.)	192	17	6
Gelatin (4 oz.)	81	42	14
Tabletop sweetener (packet)	35	97	32

How DOES the body handle aspartame?

Aspartame is composed of two amino acids, aspartic acid and phenylalanine, as the methyl ester. Aspartic acid and phenylalanine are also found naturally in protein containing foods, including meats, grains and dairy products. Methyl esters are also found naturally in many foods such as fruits and vegetables and their juices.

Upon digestion, aspartame breaks down into three components (aspartic acid, phenylalanine and a small amount of methanol), which are then absorbed into the blood and used in normal body processes. Neither aspartame nor its components accumulate in the body as the body uses the components of aspartame in the same ways as when the same components are derived from common foods.

Further, the amounts of these components from aspartame are small compared to amounts from other food sources. For example, a serving of no-fat milk provides about six times more phenylalanine and 13 times more aspartic acid compared to an equivalent amount of diet beverage sweetened 100 percent with aspartame. Likewise, a serving of tomato juice provides about six times more methanol compared to an equivalent amount of diet beverage with aspartame.

Phenylalanine, Aspartic Acid & Methanol Content of Common Foods (mg)

Food/Beverage	Phenylalanine*	Aspartic Acid*	Methanol
Diet Coke (8 oz.)	60	48	12
Milk (8 oz.)	404	592	–
Banana (med)	58	146	21
Tomato Juice (8 oz.)	39	231	71

* Amino Acids

Does Aspartame cause unhealthy levels of Methanol in the bloodstream?

No. Methanol toxicity occurs when methanol is ingested in large enough amounts to overwhelm the body's ability to handle it. The amount of methanol produced by the digestion of aspartame is extremely small. In fact, the digestion of one cup (240 ml) of tomato juice produces six times more methanol than does the digestion of the same volume of an aspartame-sweetened soft drink: 82 milligrams per cup of tomato juice versus 14 milligrams per cup of a soft drink sweetened entirely with aspartame.



who may use aspartame?

Pregnant or Breastfeeding Women

The FDA and the Council on Scientific Affairs of the American Medical Association agree that women who are pregnant or breastfeeding can safely use aspartame. Sufficient calories are important during pregnancy and breastfeeding, and calories should come from foods that contribute to nutrient needs rather than from foods low in nutrients. The variety of foods and beverages sweetened with aspartame can help satisfy a pregnant woman's taste for "sweets" without adding extra calories, leaving room for more nutritious foods.

People with Diabetes

Approximately 90 percent of people with diabetes use products sweetened with aspartame and the American Diabetes Association states that aspartame is a safe and useful sweetener for people with diabetes. Aspartame makes food taste sweet and can significantly reduce or even eliminate the amount of calories and carbohydrate in foods and beverages. Research shows that aspartame does not affect short-term or long-term blood glucose levels in people with diabetes. Foods and beverages sweetened with aspartame offer people with diabetes a much wider variety of products from which to choose and greater flexibility in budgeting total carbohydrate intake. Thus, aspartame sweetened products can help them follow nutrition recommendations and still enjoy good-tasting foods.



Children

Studies have documented that aspartame is safe for use by children. However, children need calories to achieve proper growth and development. Thus, parents should supervise their children's diet to avoid dietary excesses or nutritional deficiencies.

Phenylketonuria

Phenylketonuria (PKU) is a rare inherited disease that prevents the essential amino acid phenylalanine, one of the components of aspartame, from being properly metabolized. (An essential amino acid is required for normal growth, development, and body functioning and must be obtained from the diet, as the body cannot make it.) Because of this, phenylalanine can accumulate in the body and cause certain health problems. In the U.S. and many other countries, routine screening for PKU is required for all newborns. In the U.S., about one in 15,000 babies is born with PKU. People with PKU are placed on a special diet with a severe restriction of phenylalanine, from all sources, from birth to adolescence or after. Women with PKU must remain on the special diet throughout pregnancy. Since individuals with PKU must consider aspartame as an additional source of phenylalanine, aspartame-containing foods must state, "Phenylketonurics: Contains Phenylalanine," in the U.S.

aspartame and a healthful lifestyle

Health experts agree that eating well and being physically active are keys to a healthful lifestyle. To help people achieve a more healthful lifestyle, the U.S. government provides “Dietary Guidelines for Americans,” which encourage consumers to “Choose beverages and foods to moderate your intake of sugars.” The World Health Organization also recommends a number of dietary guidelines to combat increases in chronic diseases such as obesity, high blood pressure, cancer and diabetes. One recommendation is to limit sugars added to some foods and beverages. As a sweetener, aspartame can reduce or replace the calories from sugar in foods and beverages while maintaining great taste, offering one simple step to help people move closer to achieving a more healthful diet.

Further, studies have shown that foods and beverages sweetened with aspartame can be an effective “tool” as part of a weight management program. A study published in the *Journal of Food Science* found people who used products containing low calorie sweeteners (such as aspartame) not only had a better quality diet but also were more likely to consume fewer calories than those who did not use products sweetened with low calorie sweeteners. In fact, reduced calorie product users reported consuming significantly less total and saturated fat, cholesterol, energy, and added sugars, while having significantly higher intakes of vitamins (e.g., vitamins A, E, and folate) and minerals (e.g., calcium, iron and zinc) from their foods. Aspartame, however, is not a drug and does not stimulate weight loss. It does help make possible good tasting low- or reduced-calorie foods and beverages for those who wish to control or decrease their caloric intake. Researchers at Harvard Medical School have concluded that aspartame “is a valuable adjunct to a comprehensive program of balanced diet, exercise and behavior modifications for losing weight.” The chart below depicts calorie savings from consuming a food or beverage sweetened with aspartame.

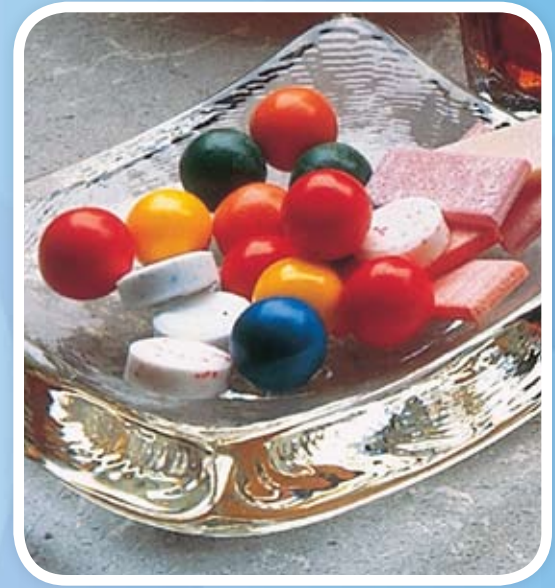
Product	Traditional (kcal)	Aspartame-sweetened (kcal)
Carbonated beverage (12 oz.)	150	0
Lemonade Powdered Drink Mix (8 oz.)	102	4
Ice Cream (1/2 cup)	270	90
Syrup (1/4 cup)	210	100
Low-calorie tabletop sweetener	39	231
(equivalent to 2 tsp. of sugar)	32	0
Gelatin dessert (4 oz.)	80	10
Pudding (4 oz.)	160	80
Cheesecake (1/16)	220	158

aspartame and weight control: is aspartame beneficial in weight loss?

With nearly two out of three Americans classified as overweight or obese, taking steps to assure appropriate calorie intake is important for many people. Because products with aspartame are lower in calories, using products with aspartame together with regular physical activity can help with weight management. Further, the affects of aspartame on weight control were recently reviewed by the American Dietetic Association's (ADA) Evidence Analysis Library (EAL). The EAL systematically reviews published literature on various food related topics, analyzes results and creates a conclusion statement based on the evidence. After review of aspartame the ADA concluded, "Use of aspartame by individuals consuming a hypocaloric diet may be associated with increased weight loss." The ADA further concluded that aspartame does not affect appetite or food intake.

Unfortunately, information that low-calorie sweeteners and the products that contain them can cause weight gain, increase the risk of metabolic syndrome and contribute to type 2 diabetes has been circulating. However, these allegations are based on observational studies that do not show cause and effect. Such findings (from Davidson and Swithers, 2004) have not been replicated and are not consistent with the majority of scientific data supporting the benefits of low calorie sweeteners such as aspartame. Further, a review of research shows low-calorie sweeteners may be one piece of the puzzle in helping solve the obesity problem. The study by Bellisle and Drewnowski, published in the *European Journal of Clinical Nutrition*, evaluated a variety of laboratory, clinical and epidemiological studies regarding low-calorie sweeteners, energy density and satiety. Dr. Adam Drewnowski, Director, Center for Public Health Nutrition at the University of Washington and co-author of the study, noted, "This review of a variety of studies indicates that low-calorie sweeteners and the products that contain them may assist in weight loss efforts." A paper published in the *American Journal of Clinical Nutrition*, in which Richard D. Mattes of Purdue University and Barry M. Popkin of the University of North Carolina reviewed 224 scientific studies on the effects of non-nutritive sweeteners on appetite, food intake and weight, concluded "taken together, the evidence summarized by us and others suggests that if non-nutritive sweeteners are used as substitutes for higher-energy-yielding sweeteners, they have the potential to aid in weight management."

Further, a two year, clinical trial conducted by Harvard's Dr. George Blackburn showed that aspartame was helpful not only in weight loss, but also in weight control. The researchers concluded that aspartame, as part of a multidisciplinary weight control program, may facilitate weight control.



aspartame safety

Aspartame is one of the most thoroughly studied ingredients in the food supply and was tested in more than 100 scientific studies before FDA approval in 1981. The studies were conducted in laboratory animals and humans, including healthy infants, children, and adults, lactating women, people with diabetes, obese individuals, and people who are carriers of the rare genetic disease phenylketonuria (PKU). Upon approving aspartame, the FDA Commissioner noted, “Few compounds have withstood such detailed testing and repeated, close scrutiny, and the process through which aspartame has gone should provide the public with additional confidence of its safety.”

The American Dietetic Association (ADA) recently conducted a systematic review of the existing scientific literature related to aspartame and concluded, “Aspartame consumption is not associated with adverse effects in the general population. Studies have found no evidence of an effect of aspartame on a wide range of adverse effects including hypersensitivity reactions, elevated blood methanol or formate levels, hematopoietic or brain cancers. Neurological changes tested included cognitive functions, seizures, headaches and changes in memory or mood.”

In 1981 aspartame was approved for use in tabletop sweeteners and various foods and dry beverage mixes, making it the first low-calorie sweetener approved by the U.S. Food and Drug Administration (FDA) in more than 25 years. In 1983, FDA approved aspartame for use in carbonated beverages followed by a number of other product category approvals over the next 13 years, leading to a general use approval in foods and beverages in 1996. Following FDA approval, extensive additional research has been done with aspartame, which further supports its safety for the general population. In fact, aspartame has been tested for more than three decades, in more than 200 studies, with the same result: Aspartame is safe.

In 2007, an extensive safety evaluation of over 500 studies related to aspartame, “Aspartame: A Safety Evaluation Based on Current Use Levels, Regulations, and Toxicological and Epidemiological Studies,” was published in *Critical Reviews in Toxicology*. “The expert panel concluded that aspartame is a thoroughly-studied, safe sweetener that can help reduce the calorie content of many foods,” stated Dr. Berna Magnuson, lead author of the review and Senior Scientific and Regulatory Consultant for Cantox Health Sciences International and Associate Adjunct Professor of Nutritional Sciences, University of Toronto. The panel further concluded that at levels found in the human diet, aspartame poses no health risk; there is no credible link between aspartame and conditions related to the nervous system and behavior or any other symptom or illness; and there is no evidence of genetic toxicity, no credible evidence of carcinogenicity, and no evidence to support an association between aspartame and the development of obesity.



Is Aspartame related to Cancer?

No. Before the approval of aspartame, it was extensively evaluated in four long-term and lifetime studies in rodents which received enormous doses of aspartame, equal to the amount of aspartame in more than 1,000 cans of diet soft drink daily over a lifetime for an adult human. There was no increase in brain tumors or any other type of cancer. Aspartame does not enter the bloodstream and therefore cannot travel to essential organs including the brain. Thus, there is no physiological reason why aspartame could cause cancer.

Further, The European Food Safety Authority (EFSA) has confirmed the safety of aspartame. After a comprehensive review of data, EFSA's Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food (AFC) stated, "Overall, the Panel concluded on the basis of all the evidence currently available including the last published ERF [European Ramazzini Foundation] study that there is no indication of any genotoxic or carcinogenic potential of aspartame and that there is no reason to revise the previously established ADI for aspartame of 40 mg/kg bw/day." This statement further confirms EFSA's 2006 statement regarding an earlier Ramazzini study, which alleged that aspartame consumption may cause cancer. The U.S. Food & Drug Administration (FDA) supports EFSA's conclusion and notes, "Based on the large body of evidence we have reviewed, including several studies on carcinogenicity which showed no adverse effects and data on how aspartame is metabolized by humans, we have no reason to believe that aspartame would cause cancer. Thus, it remains FDA's position that use [of aspartame] is safe."

The allegations made by Ramazzini are at complete odds with the wealth of scientific literature demonstrating that aspartame is safe and does not cause cancer. A recent epidemiology study from the National Cancer Institute confirms previous study conclusions that there is no link between aspartame consumption and leukemias, lymphomas and brain tumors. The study evaluated over 500,000 men and women between the ages of 50 and 69 over a five-year period. A comprehensive review of more than 500 studies and recently published in *Critical Reviews in Toxicology* also found that aspartame is safe and not associated with cancer. The review was conducted by a panel of eight leading experts in the areas of toxicology, epidemiology, metabolism, pathology, biostatistics, etc., and conclusively determined that aspartame is safe.



review of aspartame

For more information on aspartame and comments from governments and independent health organizations about aspartame, visit www.aspartame.org.

Some highlights:

European Food Safety Authority Reconfirms Aspartame's Safety

In 2009, after review of the second European Ramazzini Foundation (ERF) study regarding aspartame and its potential to cause cancer, EFSA concluded, "There is no indication of any genotoxic or carcinogenic potential of aspartame and no reason to revise the previously established ADI for aspartame of 40 mg/kg body weight."

Food Safety Authority of Ireland's Aspartame Fact Sheet

The Food Safety Authority of Ireland supports the safety of aspartame as part of its 2009 "Aspartame Fact Sheet." The Fact Sheet notes: "The safety of aspartame has been extensively studied over the years and experts worldwide agree that aspartame is safe for use."

American Dietetic Association's Evidence Analysis Library (EAL)

The American Dietetic Association (ADA) recently conducted a systematic review of the existing scientific literature related to aspartame and concluded, "Aspartame consumption is not associated with adverse effects in the general population. Studies have found no evidence of an effect of aspartame on a wide range of adverse effects including hypersensitivity reactions, elevated blood methanol or formate levels, hematopoietic or brain cancers. Neurological changes tested included cognitive functions, seizures, headaches and changes in memory or mood." The EAL further concluded that aspartame does not affect appetite or food intake.

Food and Drug Administration Affirms Safety of Aspartame

In 2007, FDA reviewed the first ERF study and concluded that the study data made available to them by the European Ramazzini Foundation (ERF) "do not appear to support the aspartame-related findings reported by ERF." FDA added, "These data do not provide evidence to alter FDA's conclusion that the use of aspartame is safe."

Critical Reviews in Toxicology

Magnuson et al (2007) conducted the largest comprehensive review of aspartame data to date. Experts in the fields of toxicology, epidemiology, biostatistics, metabolism, pathology, neurology and pediatrics spent nine months examining over 500 aspartame studies. Studies claiming a link between aspartame consumption and weight gain were part of the review. Following their critique of aspartame data, the researchers concluded, "Aspartame is a well-characterized, thoroughly studied, high intensity sweetener that has a long history of safe use in the food supply and can help reduce the caloric content of a wide variety of foods."

National Cancer Institute

An epidemiology study from the National Cancer Institute confirms previous study conclusions that there is no link between aspartame consumption and leukemias, lymphomas and brain tumors. The study evaluated approximately 500,000 men and women between the ages of 50 and 69 over a five-year period. The researchers found (compared with those who did not consume aspartame) that there was no evidence of an increased risk of leukemias, lymphomas and brain tumors among those who use aspartame. The researchers report, "Our findings from this epidemiologic study suggest that consumption of aspartame-containing beverages does not raise the risk of hematopoietic or brain malignancies."

Canadian Diabetes Association Confirms the Safety of Aspartame

The Canadian Diabetes Association supports the safety of aspartame as part of its "Canadian Diabetes Association National Nutrition Committee Technical Review: Non-nutritive Intense Sweeteners in Diabetes Management" published in the Canadian Journal of Diabetes. The report notes: "Its [aspartame's] safety has been further confirmed through studies in several human subpopulations, including: healthy infants, children, adolescents and adults; obese individuals with or without diabetes; lactating women; and individuals heterozygous for the genetic disease phenylketonuria (PKU), who have a decreased ability to metabolize phenylalanine." The report further notes, "At this time, there is no scientific evidence to support the negative health effects that have been ascribed to aspartame."

Health Canada Re-affirms Aspartame's Safety

Health Canada states, "...Before consideration was given to permitting aspartame for use in foods in Canada, officials of Health Canada evaluated an extensive array of toxicological tests in laboratory animals and, since its listing for use, they have examined the results of a number of clinical studies in humans. There is no evidence to suggest that the consumption of foods containing this sweetener, according to the provisions of the Food and Drug Regulations and as part of a well-balanced diet, would pose a health hazard to consumers."

European Food Safety Authority Reconfirms Aspartame's Clean Bill of Health

The food safety authority in Europe, the Scientific Committee on Food (SCF) of the European Commission, has reconfirmed aspartame's clean bill of health following a comprehensive review of the sweetener's safety. "The Committee concluded that on the basis of its review of all the data in animals and humans available to date, there is no evidence to suggest that there is a need to revise the outcome..." of the prior endorsement of aspartame's safety. The SCF is a body of independent scientific experts, which advises the European Commission on matters of food safety; its aspartame report was issued on December 10, 2002.

U.K. Food Standards Agency

On December 18, 2002, the United Kingdom's Food Standards Agency (FSA) issued a statement announcing that "the Agency supports the conclusions of the Committee's [Scientific Committee on Food] thorough and timely review on the safety of the sweetener [aspartame]."

The French Food Safety Agency (AFSSA) Supports Safety of Aspartame

The French Food Safety Agency (AFSSA) reported a two-year study by the French Expert Committee on Flavourings, Food Additives and Processing Aids and confirmed the safety of aspartame once again. The AFSSA was asked to review an alleged link between aspartame and brain tumors. The report, published on May 7, 2002, noted, "In conclusion, AFSSA considers that the current state of scientific knowledge does not enable a relationship to be established between the exposition to aspartame and brain tumors in humans or animals.

FDA Consumer Magazine (May-June 2002) Confirms Safety of Aspartame

The FDA considers aspartame to be one of the most thoroughly tested and studied food additives the agency has ever approved. More than 100 toxicological and clinical studies reviewed by the agency confirm that aspartame is safe for the general population.

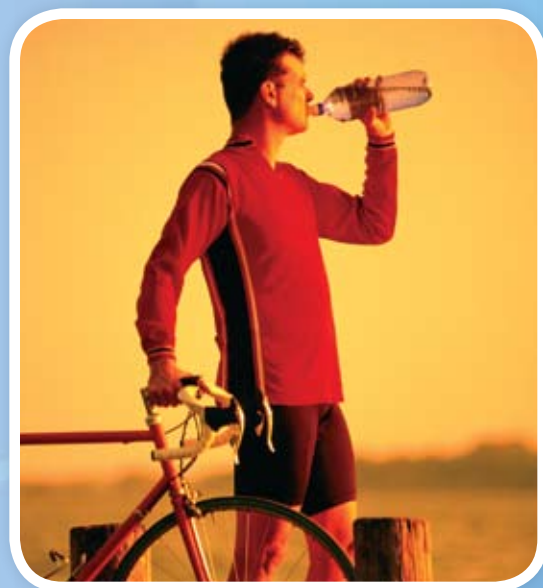
facts and misperceptions about aspartame

The overwhelming body of scientific evidence clearly demonstrates that aspartame, even in amounts many times what people typically consume, is safe and not associated with adverse health effects. However, over the years some consumers have reported symptoms which they believed were associated with aspartame. The FDA has investigated these allegations and concluded that there is no "reasonable evidence of possible public health harm" and "no consistent or unique patterns of symptoms reported with respect to aspartame that can be causally linked to its use." In 1984, the Centers for Disease Control (CDC) reviewed 517 of these anecdotal reports and stated, "the majority of frequently reported symptoms were mild and are symptoms that are common in the general populace" and that "focused" clinical studies would be the best way to evaluate these complaints.

As a result, numerous scientific studies "focused" on these allegations were conducted by expert researchers at major academic institutions. The results of these studies overwhelmingly demonstrated that aspartame is not associated with adverse health effects, including headaches, seizures, changes in mood, cognition, or behavior or allergic reactions.

Despite the overwhelming documentation of aspartame's safety, unfounded allegations that aspartame is associated with a myriad of ailments, including Multiple Sclerosis, Parkinson's disease, Alzheimer's disease and Lupus, have continued to be spread via the Internet and the media by a few individuals who have no documented scientific or medical expertise.

Recently, several governments and expert scientific committees carefully evaluated the Internet allegations and found them to be false, further supporting the safety of aspartame. In addition, leading health authorities, such as the Multiple Sclerosis Foundation, The National Multiple Sclerosis Society, The National Parkinson Foundation, Inc., the Alzheimer's Association, and the Lupus Foundation of America have reviewed the claims on the Internet and also concluded that they are false.



Headaches

In a well designed study testing whether aspartame caused headaches or migraines, Duke University researchers gave a large dose of aspartame or a placebo to people who were convinced that aspartame caused their headaches. The results, which were published in the *New England Journal of Medicine*, showed no difference in headache frequency, blood pressure, or blood histamine between the experimental and control groups. The researchers concluded that aspartame was not the cause of these individuals' headaches or migraines.

Appetite and weight gain

Changes in body weight are related to many factors such as diet, exercise and heredity. Products made with aspartame can help with weight control because they are lower in calories than their sugar-sweetened counterparts. Based on the overwhelming scientific evidence from numerous scientific studies, aspartame does not increase hunger, appetite, or food intake or cause weight gain.

Changes in mood, thought process or behavior

Well controlled scientific studies conducted by behavioral experts at a number of respected academic centers, including the Massachusetts Institute of Technology (MIT), Harvard Medical School and Yale Medical School, demonstrate that aspartame has no effects on mood, behavior or cognition, including memory loss

Behavior in children

Numerous scientific studies were done at major institutions, including the National Institute of Mental Health, Yale University Medical School and Vanderbilt University Medical School, to evaluate behavior in children given large amounts of aspartame. The results of these studies show that aspartame consumption does not cause behavioral changes in children, including those diagnosed with "hyperactivity" or with attention deficit disorder (ADD).

Allergic reactions

Although a few people have claimed they have experienced allergic-type symptoms related to consuming aspartame, these anecdotal reports have not been confirmed by carefully controlled scientific studies done at the National Institutes of Health and at six major academic medical centers. The results of these studies done with people who were convinced that aspartame caused their allergic reactions clearly demonstrate that aspartame is not associated with allergic reactions.

A wide variety of foods can cause allergic reactions in some people. Those who suspect a food allergy should seek diagnosis and treatment from a qualified medical professional, such as a board-certified allergist. Self-diagnosis can delay treatment of a more serious medical problem.

Epilepsy

The Epilepsy Institute of New York and the Epilepsy Foundation of America state that aspartame is safe for use by people with epilepsy. Numerous scientific studies were done in animals and in people who were convinced that aspartame caused their seizures and in children with epilepsy. The results of these studies demonstrate that aspartame does not cause or worsen seizures.

Lupus

The Lupus Foundation of America has concluded there is “no specific proof of an association with aspartame as a cause or worsening of SLE (systemic lupus erythematosus)” and “People with lupus should always consult with their physician before making any changes in their medical treatment, diet, exercise or other routine based on information received via the Internet or other sources lacking known credentials.”

Alzheimer's disease

In dispelling myths about Alzheimer's disease, the Alzheimer's Association concluded there was “no scientific evidence of a link between aspartame and memory loss.”

Parkinson's disease

A scientific study done at Georgetown University has shown that aspartame has no effect on Parkinson's disease (PD). Further, The National Parkinson Foundation, Inc., has concluded, “The cause of PD is unknown, PD existed before aspartame was invented, there is no evidence aspartame blocks the absorption of levodopa.” (Levodopa is the major drug used to treat PD.)

Multiple Sclerosis

The Multiple Sclerosis Foundation stated, “There is no evidence that aspartame in any way causes, provokes, mimics or worsens MS.” Further, an article published by The National Multiple Sclerosis Society stated, “Several websites and documents circulating on the Internet are making unsubstantiated claims about aspartame, an artificial sweetener used in many diet soft drinks and other foods.”

Excitotoxin/Neurotoxin

An “excitotoxin” is a substance that reportedly over-stimulates brain and nerve cells. Critics have falsely claimed that ingestion of aspartame may result in high blood levels of aspartic acid, which would circulate to the brain and kill nerve cells. However, extensive scientific research has shown that it is not possible for a person ever to consume enough aspartame in the diet – even over long periods of time - to result in high blood levels of aspartic acid.

Vision

Although scientists know that huge amounts of methanol can affect vision, only small amounts of methanol are formed when aspartame and many fruits, vegetables and juices are digested. In fact, a glass of tomato juice provides about six times as much methanol as an equal amount of a beverage sweetened with aspartame. During the digestion of aspartame in the gastrointestinal tract, the released methanol is then easily further metabolized by normal body processes in the same way as when methanol is derived from other dietary sources. Numerous scientific studies have shown that the methanol from aspartame does not accumulate in the body and thus cannot reach harmful levels.

Internet and media misperceptions

Allegations spread via the Internet and media by a few individuals that aspartame may be associated with a myriad of ailments are not based on science. These allegations have come to be called “urban myths”. A British Medical Journal (BMJ) editorial further concluded that these aspartame criticisms are unfounded. The BMJ editorial states: “Evidence does not support links between aspartame and cancer, hair loss, depression, dementia, behavioural disturbances, or any of the other conditions appearing in websites. Agencies such as the Food Standards Agency, European Food Safety Authority, and the Food and Drug Administration have a duty to monitor relations between foodstuffs and health and to commission research when reasonable doubt emerges.”

summary

Today, aspartame has established itself as an important component in thousands of foods and beverages and is primarily responsible for the growth of the low- and reduced-calorie market in the last two decades. Aspartame has helped provide calorie-conscious consumers with a wide variety of good-tasting, low- and reduced-calorie products that are easily incorporated into a healthful lifestyle. Its excellent taste and suitability for a wide variety of products make it an appropriate choice for people who desire a sweet taste without all the calories of sugar.

Consumer research shows that low-calorie foods and beverages have become part of the lifestyle of millions of men and women who want to stay in better overall health, control their weight, or simply enjoy the many low-calorie products available. Aspartame helps provide calorie-conscious consumers with a wide variety of good-tasting, low-calorie products that are easily incorporated into a healthful lifestyle.

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