

## AN ASDA FACT SHEET ON

## ASPARTAME



(The following is a modification of an IFIC Q&A published in November 1997)

Aspartame is a low-calorie sweetener used in foods and beverages in more than 100 countries around the world. It is about 200 times sweeter than sugar. Aspartame was approved by the U.S. Food and Drug Administration (FDA) in 1981 for use in powdered mixes and as a tabletop sweetener, and in 1983 for use in carbonated beverages. Today it is approved as a general purpose sweetening agent in all food and beverage categories. Prior to its approval, aspartame underwent one of the most thorough scientific reviews ever conducted. Regulators consider it one of the most widely tested ingredients in the food supply. The rapid growth and widespread use of aspartame in foods has led to much publicity. In addition, there are a few very active and vocal groups that are critical of aspartame and frequently raise safety concerns both in the media and on the Internet.

### **What is aspartame?**

Aspartame is a low-calorie sweetener that is about 200 times sweeter than sugar. It is produced and marketed primarily by the NutraSweet® Company, [www.nutrasweet.com](http://www.nutrasweet.com) in the U.S., Ajinomoto, Inc. of Japan, and the Holland Sweeteners Company of the Netherlands.

### **What types of products contain aspartame?**

Aspartame is used to sweeten many foods and beverages, as a tabletop sweetener, and in simple recipes that do not require lengthy heating. Aspartame's components separate when heated over time, resulting in a loss of sweetness. If a food containing aspartame were inadvertently heated, it would still be safe, but would simply not provide the desired sweetness. Aspartame is a permitted non-nutritive sweetener used in some carbonated diet soft drinks and other beverages.

### **What is aspartame made of?**

Aspartame is made by joining two protein components, aspartic acid and phenylalanine, and a small amount of methanol. Aspartic acid and phenylalanine are building blocks of protein and are found naturally in all protein-containing foods, including meats, grains and dairy products. Methanol is found naturally in the body and in many foods such as fruit and vegetable juices.

## **How is aspartame handled by the body?**

Aspartame is digested just like any other protein. Upon digestion, aspartame breaks down into its basic components and is absorbed into the blood. Neither aspartame nor its components accumulate in the body over time.

## **Is aspartame safe?**

Aspartame is one of the most thoroughly studied ingredients in the food supply. It was tested in more than 100 scientific studies prior to its approval by the FDA adults and children, lactating women and persons with diabetes, obesity and special genetic conditions, Aspartame was tested in amounts many times higher than individuals could consume in the diet.

The FDA, other international regulatory bodies and numerous expert scientific groups have concluded that aspartame is safe for the general public, including diabetics, pregnant and nursing women, and children. Persons with a rare hereditary disease known as phenylketonuria (PKU) must control their phenylalanine intake from all sources, including aspartame. These persons are diagnosed at birth by a blood test performed on all babies. Products sweetened with aspartame carry a statement on the label that they contain phenylalanine.

The Australia New Zealand Food Authority (ANZFA) [www.anzfa.gov.au](http://www.anzfa.gov.au) the peak food regulatory body for Australia & New Zealand, reviewed the FDA Studies many years ago and as such it is included as a permitted additive in certain products, including carbonated soft drinks, under the ANZFA Food Standards Code.

## **How much aspartame may people consume?**

The FDA, the joint FAO/WHO Expert Committee on Food Additive (JECFA), and other regulatory bodies including ANZFA use the concept of an Acceptable Daily Intake (ADI) for many food additives, including aspartame. The ADI represents an intake level that if maintained each day throughout a person's lifetime would be considered very safe. The ADI for aspartame has been set at 50 milligrams per kilogram (mg/kg) of body weight by the FDA and by JECFA [(An ADI of 40 mg/kg/day has been set by the European Union's Scientific Committee for Food (SCF)]. ANZFA uses ADI to determine the safe use of food additives including aspartame.

## **How much aspartame are people actually consuming today?**

The FDA monitors the amount of aspartame that Americans consume through ongoing dietary surveys. The average daily intake of Americans is less than 2 percent of the FDA guideline for acceptable consumption. The most frequent consumers of aspartame are consuming only 4 percent to 7 percent of the ADI. Similar intake surveys conducted in Europe also show that the ADI would not be exceeded by high consumers.

### **How much aspartame are children consuming?**

Because of children's small size, they consume proportionately larger amounts of all food ingredients than adults do in relation to their body weight. Studies of children in the USA between the ages of 2 and 5 show the average consumption of aspartame is 3 percent of the ADI. The most frequent consumers of aspartame among these children have been found to consume from 4 percent to 16 percent of the ADI.

### **Is it safe to consume more aspartame than the ADI?**

Since the ADI has a built-in safety factor and represents a guideline for intake every day over a lifetime, occasional use of aspartame can be greater than the ADI without concern for safety. Tests with humans consuming much greater levels of aspartame than the ADI have shown no adverse side effects. Aspartame's ADI is the sweetness equivalency of consuming one pound of sugar per day. This amount of sweetness would be difficult for an individual to consume during one day, let alone every day over many months or years.

### **What is methanol and is it a problem in consuming aspartame?**

Methanol is a natural and harmless by-product of metabolism of many commonly consumed foods. The methanol produced by the metabolism of aspartame is identical to that which is provided in much larger amounts from fruits, vegetables and their juices and is part of the normal diet. In fact, a glass of tomato juice provides 6 times as much methanol as a similar amount of diet soda. During the metabolism of aspartame in the gastrointestinal tract, methanol is released and then metabolized by normal body processes. Numerous scientific studies have shown that the methanol derived from aspartame does not accumulate in the body and thus cannot reach harmful levels.

### **Have other regulatory bodies reviewed aspartame's safety?**

Aspartame has been approved for use by more than 100 nations worldwide, and is listed on the European Union's Sweetener Directive. Aspartame has been reviewed and found safe by the Joint Expert Committee on Food Additives (JECFA) of the United Nations Food and Agricultural Organization and World Health Organization. It also has been reviewed by the European Union's Scientific Committee for Food (SCF).

### **What do independent dietitians have to say about aspartame?**

The American Dietetic Association concluded that moderate use of aspartame is acceptable as part of a health diet. More information is available on their Website

[www.eatright.org/adap0598.html](http://www.eatright.org/adap0598.html)

### **Can pregnant women consume aspartame?**

Yes. A task force of the American Academy of Pediatrics' Committee on Nutrition concluded that aspartame is safe for both the mother and developing baby. Of course, it is important for all pregnant women to consult with their doctors regarding nutritional needs during pregnancy.

### **Can persons with diabetes consume aspartame?**

Yes. The American Diabetes Association [www.diabetes.org](http://www.diabetes.org) has stated that aspartame is acceptable as a sugar substitute and can be included in a diabetic meal plan.

### **Is aspartame safe for people with epilepsy?**

Yes. The Epilepsy Institute, an organization devoted to people suffering from seizure-related problems, has concluded that aspartame is not related to seizures among epileptic patients.

### **Is aspartame safe for people with multiple sclerosis?**

Yes. Although there have been recent allegations (specifically on the Internet) that aspartame may cause or worsen multiple sclerosis, the Multiple Sclerosis foundation has affirmed the safety of aspartame and has dismissed these.

### **Is there any relationship between aspartame and cancer or tumor formation?**

It is physiologically impossible for aspartame to be a carcinogen. Aspartame is broken down in the gastrointestinal tract to small amounts of common dietary components including the amino acids, aspartic acid and phenylalanine. We consume these same components in much greater amounts in common foods, such as milk, meat, fruits and vegetables. The body handles these amino acids in the same way it handles them from other food sources. Aspartame itself never enters the bloodstream. In addition, tests of abuse doses of aspartame in rats and mice showed no evidence of brain tumors or any kind of tumors.

### **Has aspartame been found to affect children's behavior?**

Studies have shown that aspartame consumption does not affect the behavior of children, including those diagnosed as hyperactive or with attention deficit disorder

### **Can aspartame affect vision?**

Scientists know that only huge quantities of methanol can affect vision. A small amount of methanol is formed when aspartame is digested or when its components separate. However,

the amount of methanol one could possibly consume from aspartame is well within safe levels, and is actually less than that found in many fruit and vegetable juices.

### **Can aspartame cause weight gain?**

Studies have shown that foods and beverages sweetened with aspartame can be an effective part of weight management program. Obviously, aspartame is not a drug stimulating weight loss; however, it does make possible low-calorie foods and beverages for those wishing to control their calorie intake.

### **Do some people have adverse reactions to aspartame?**

There is no scientific evidence that aspartame is linked to adverse reactions in people. The FDA has investigated all complaints since 1980, and has stated that there has been a gradual decrease in reports of adverse reactions to aspartame has declined from the 1985 peak. Individuals who have concerns about possible adverse reactions to aspartame should contact their physicians.

### **Does aspartame cause allergic reactions?**

Studies investigating aspartame as a potential allergen have found no association between aspartame and allergic reactions. In double-blind placebo-controlled studies with people who believed they developed allergic reactions after consuming aspartame, researchers found aspartame was no more likely than placebo to cause allergic reactions

### **For Further Information**

- International Food Information Council (IFIC) "Everything You Need to Know About....Aspartame" brochure - [www.ificinfo.health.org](http://www.ificinfo.health.org)
- The American Dietetic Association - [www.eatright.org](http://www.eatright.org)
- The American Diabetic Association - [www.diabetes.org](http://www.diabetes.org)
- Australia New Zealand Food Authority - [www.anzfa.gov.au](http://www.anzfa.gov.au)
- Calorie Control Council - Low Calorie Sweeteners Paper [www.caloriecontrol.org/lowcal.html](http://www.caloriecontrol.org/lowcal.html)
- NutraSweet Home Page - [www.nutrasweet.com](http://www.nutrasweet.com)