Scientific Facts on

Aspartame

Source document:
EC-SCF (2002)

Summary & Details:
GreenFacts

Context - Aspartame is a non caloric sweetener used in many diet soft drinks and food preparations. A number of national and international organizations have assessed its safety and an Acceptable Daily Intake value was established. However, some allegations of side effects have launched a debate. Does this artificial sweetener pose health risks?

Read also our 2014 Highlight "Safety of aspartame [see http://www.greenfacts.org/en/aspartame-reevaluation/index.htm]"

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This Digest is a faithful summary of the leading scientific consensus report produced in 2002 by the European Commission Scientific Committee on Food (EC-SCF): *"Update on the Safety of Aspartame"*

The full Digest is available at: http://www.greenfacts.org/en/aspartame/

This PDF Document is the Level 1 of a GreenFacts Digest. GreenFacts Digests are published in several languages as questions and answers, in a copyrighted user-friendly Three-Level Structure of increasing detail:

- Each question is answered in Level 1 with a short summary.
- These answers are developed in more detail in Level 2.
- Level 3 consists of the Source document, the internationally recognised scientific consensus report which is faithfully summarised in Level 2 and further in Level 1.

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1. What is aspartame?

1.1 Aspartame is a non caloric sweetener. It was discovered in 1965 and entered the market in the 80's. A number of national and international organizations have assessed the safety of aspartame and an international committee of experts established an Acceptable Daily Intake (ADI) value. However, some allegations of health risks have launched a debate.

1.2 Aspartame is a white, odourless powder, approximately 200 times sweeter than sugar, used in a number of foodstuffs throughout the world. It is marketed under several brand names, including Canderel® and NutraSweet®, and is labelled E951 in Europe. Aspartame is stable when dry or frozen but it breaks down and loses its sweetness over time when stored in liquids at temperatures above 30°C.

1.3 Some concerns have been raised about aspartame and its breakdown products. For example, it has been suggested that aspartame may cause headaches, epilepsy and brain tumors.

2. How much aspartame do people consume?

The consumption of aspartame in Europe is between 2.8 and 10.1 mg/kg body weight per day. It is estimated to be well below the Acceptable Daily Intake (ADI) set by the international committee of experts of the Food and Agriculture Organization (FAO) and the World Health Organization (WHO), even for children and high consumers such as diabetics.

3. What happens to aspartame once it is ingested?

Following ingestion, aspartame itself does not enter the bloodstream, but instead breaks down in the intestine into three components: aspartic acid, phenylalanine and methanol. Following this, the blood concentration of phenylalanine may increase after high doses surpassing the Acceptable Daily Intake (ADI), while those of aspartic acid and methanol do not.

4. Can aspartame affect human health?

Many studies have been conducted on aspartame and its breakdown products in experimental animals and in humans. To date, they conclude that:

4.1 There is no link between aspartame and damage to the genes or cancer.

4.2 Aspartame does not affect reproduction and development, apart from marginal effects at a very high dose more than 100 times greater than the Acceptable Daily Intake (ADI).

4.3 Aspartame does not produce nervous system disorders.

4.4 Aspartame does not affect behaviour, cognition and mood, except possibly in depressed individuals.

4.5 Aspartame has not been found to trigger headaches.

4.6 A large number of scientists have refuted a suggested link between aspartame and epileptic seizures.

4.7 Aspartame does not cause allergies and has not been shown to increase body weight.

5. Conclusion

Several scientific committees have reviewed the health risks of aspartame and its breakdown products: aspartic acid, phenylalanine and methanol.

Their conclusions are:

- People get far less aspartic acid, phenylalanine and methanol from aspartame than from normal consumption of natural foods.
- Aspartame intakes are unlikely to exceed the current Acceptable Daily Intake (ADI), even for children and diabetics.
- While some minor effects on health may occur at very high doses, no effects are expected at or below the Acceptable Daily Intake (ADI).