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### The Truth About Aspartame

By Raymond Francis

Many Americans have a sweet tooth, and those trying to avoid sugar often turn to the artificial sweetener aspartame. (Usually marketed under brand names like NutraSweet, Equal, and Spoonful.) A wide variety of conflicting data has been published about the safety of aspartame, making it a 'hot-button' issue in many health and science circles. These types of controversial health topics make it difficult for consumers wanting to make educated health decisions. My approach to these dilemmas is to examine the existing data, and to analyze the basic chemistry. Having done so, I personally avoid aspartame and recommend that everyone do the same.

Earlier this year, a flurry of emails on the Internet linked aspartame to diseases such as multiple sclerosis and systemic lupus. The rhetoric heated up more when an article in *Diabetes Interview* linked aspartame to neurologic toxicity. Since its inception in 1981, Americans have eaten more than 800 million pounds of aspartame; there are now over 5,000 products containing it, including 'diet' soft drinks, baked goods, Jell-O, prescription drugs, and chewing gum, to name a few.

While aspartame itself is relatively benign, the chemicals used in creating it are quite toxic. Let's briefly look at the chemistry of aspartame: L-Aspartyl-1-phenylalanine methyl ester (aspartame) is a compound made of three chemicals: aspartic acid, phenylalanine, and methyl alcohol. Individually these chemicals are bad, and in combination they can be devastating. That's why there are a number of grim tales of people who have suffered from aspartame toxicity; the nervous system is particularly sensitive.

The real problem is that aspartame easily breaks down into its (toxic) component parts. Heat will cause this, and at only 86 degrees Fahrenheit the breakdown process accelerates. This temperature is easily attained with baked goods, in warm weather, and certainly inside the human body. In fact, the National Soft Drink Association (NSDA) protested to congress about the approval of aspartame (Congressional Record of May 7, 1985). The NSDA was concerned about heat instability, and the toxins that result from aspartame breakdown. After a few weeks in a hot climate, most of the aspartame in a can of diet soda will have broken down into these chemical components—that's why the NSDA wanted it outlawed from soda pop!

Let's take a look at these chemical components, and how they cause disease... Methyl alcohol damages the optic nerve and the retina, and is responsible for blinding and killing many skid row alcoholics. Because of such toxicity, the EPA recommends a daily consumption of no more than 7.8 mg of methyl alcohol per day. A quart of diet cola contains 56 mg! Heavy users of aspartame may consume as much as 250 mg of methyl alcohol per day, which is 32 times the daily limit set by the EPA. Such exposure to methyl alcohol is unprecedented in human history. Worse, bodily enzymes transform methyl alcohol into formaldehyde and formic acid. Formaldehyde is a known carcinogen and is extremely toxic, even in small doses. Aspartame consumption significantly increases the formaldehyde levels in human tissue, where it accumulates and causes damage to cellular DNA. Damaged cells then abnormally replicate, and these are the first steps on the road to cancer.

Formaldehyde also reacts to produce another aspartame byproduct: formic acid. Formic acid causes cells to become too acidic, thereby producing metabolic acidosis. Acidosis damages cellular health by causing

enzymes to stop functioning. Things get worse with a diet cola; phosphoric acid from the cola, plus formic acid from the aspartame make for an acidic nightmare. Formic acid can also stay in the system for a long time, causing reduced oxygen metabolism, kidney failure, convulsions, seizures, pulmonary edema, coma, and even death. Formic acid also causes fatigue by slowing down the production of cellular energy compounds (like ATP).

Yet another aspartame component is phenylalanine. Phenylalanine reduces serotonin levels in the brain. Reduced serotonin has been associated with panic attacks, manic depression, anxiety, rage, temper tantrums in children, and aggressive or violent behavior in adults. These sorts of aspartame side effects certainly can't be helping this country's violence rates! Low serotonin can also help precipitate both petite and grand mal seizures by lowering the threshold for them. Quoting a one-year aspartame study performed on monkeys: "All the animals in the medium and high [aspartame] dosage groups exhibited seizures. The seizures were of the Grand Mal type. One monkey, M38, died after 30 days. The convulsions in the monkeys are correlated with and can be attributed to high serum phenylalanine levels." In this study, the seizures stopped when the aspartame was discontinued. Ironically, low serotonin levels cause carbohydrate craving, which is one reason why people who use aspartame still gain weight.

A final breakdown component of aspartame is aspartic acid. Because it easily crosses the blood/brain barrier, aspartic acid acts as an excitotoxin, which overstimulates nerve cells and disrupts normal nervous function. Aspartic acid caused brain tumors in some experimental animals.

Many respected and accomplished professionals are speaking openly about their negative experiences with aspartame. Dr. Louis Elsas, a professor of pediatrics at Emory University Medical School, testified before Congress that aspartame is a neurotoxin and tetrogen (it causes birth defects).

Dr. H.J. Roberts was interviewed and quoted in the *Chicago Sun Times*, "Of the 360 patients I have diagnosed as having aspartame-related problems, about one-fourth had decreased vision or blindness, nearly half had severe headaches. A substantial number had epileptic seizures, confusion, memory loss, extreme depression, and even marked personality change." Dr. Roberts, a diabetes expert and world authority on aspartame toxicity, has written several books on the subject. He says that diabetics who use aspartame have difficulty controlling their blood sugar and further that aspartame causes diabetics to suffer from memory loss, confusion, vision loss, coma, and even death.

Dr. Russell Blaylock, a neurosurgeon and author of *Excitotoxins, The Taste that Kills*, says that aspartame depletes insulin from the brain, causing hypoglycemia and then seizure. He also says that aspartame acts as an excitotoxin, which can react with receptors and ultimately destroy certain types of brain cells. These excitotoxins play a critical role in neurological disorders like migraines, ALS, Parkinson's, Alzheimer's, and Huntington's disease.

Another group experiencing aspartame complications is pilots. The *World Wide Pilot Hotline* reports that many pilots have experienced vision problems from aspartame. At least one commercial airliner crash is suspected to be the result of aspartame toxicity. Some pilots have even experienced grand mal seizures in the cockpit, while flying! In May of 1992, the U.S. Air Force warned all pilots against aspartame in the journal *Flying Safety*. The Air Force warned that pilots could suffer sudden memory loss, dizziness, and gradual loss of vision. The Navy followed suit in its journal *Navy Physiology*.

Much of the existing scientific data indicates that aspartame is neurotoxic. It alters brain function, causes damage to the nervous system, and creates systemic organ malfunction. In pregnancy, aspartame can pass directly to the fetus where the breakdown products can cause birth defects. Aspartame adds to one's toxic load, thereby helping to exacerbate existing illness, or to precipitate disease from an otherwise borderline condition. This is not a substance you want in your diet.

The chemistry of aspartame is scary, and the 'reassuring' studies on it are not particularly reassuring. Such studies were all short term, while the damage caused by these chemicals is cumulative over time. It is certainly not a good idea to be exposed to something this toxic, especially on an ongoing basis and voluntarily. Most people's rationale for consuming aspartame stems from a desire to decrease caloric intake, so as to lose (or at least not gain) weight. Ironically, in addition to its many toxic side effects, aspartame may actually cause people to crave carbohydrates, thereby gaining weight...Stay away from aspartame—it's one bad chemistry experiment!

*Raymond Francis is an M.I.T.-trained scientist, a registered nutrition consultant, author of Never Be Sick Again and Never Be Fat Again, host of the Beyond Health Show, Chairman of The Project to End Disease and an internationally recognized leader in the field of optimal health maintenance.*

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