

# EXCITOTOXINS

## MONOSODIUM GLUTAMATE (MSG)

Manufacturers and the processed food industries are always on a quest to disguise Monosodium Glutamate added to food. Remember that the other two powerful excitotoxins, **ASPARTAME** (Aspartate and Phenylalanine) and **L. CYSTEINE** are frequently added to foods and require no labeling on food containers.

**ASPARTAME** is the usual artificial sweetener put in all **DIET DRINKS** and **LOW CALORIE FOODS**. It may be labeled as **NutriSweet** or **Equal**.

### MONOSODIUM GLUTAMATE

#### Additives that always contain MSG

Hydrolyzed Vegetable Protein (HVP)

Hydrolyzed Protein

Hydrolyzed Plant Protein

Plant Protein Extract

Sodium Caseinate

Calcium Caseinate

Yeast Extract

Textured Protein

Autolyzed Yeast

Hydrolyzed Oat Flour

#### Additives that frequently contain MSG

Malt Extract & Flavoring

Bouillon

Broth

Stock

Natural Beef or Chicken Flavoring

Seasonings & Spices

#### Additives that may contain MSG

Carragenan

Enzymes

Soy Protein Concentrate

Soy Protein Isolate

Whey Protein Concentrate

#### Common foods containing MSG

Packaged Snacks, Soups, Bouillon Cubes, Marinades, Dressings, Diabetic & Sodium Free Foods, Chinese and Oriental Cuisine

### ASPARTAME

#### Often found in

Breath Mints

Chewing Gum

Cocoa Mixes

Instant Coffee

Frozen Deserts

Gelatin Deserts

Juice & Fruit Flavored Waters

Shake Mixes

Flavored Milk Drinks

Some Supplements

Some Pharmaceuticals

Anything Sugar Free

Laxatives

**ANYTHING** Low or No Calorie

## TYRAMINE

Tyramine is an indirect acting catcholaminergic amine found in Bananas and Avocados (when brown).

Cheese, Sour Cream, Pizzas, Chocolate over 1oz.

Pickled Herrings, Caviar, Liver, Salamis, Broad Bean Pods.

Fermented dairy products such as Yogurt, Sauerkraut.

Yeast extracts including Beer and Wine, Bouillon cubes, MSG and all fermented Soya Bean products.

When these foods are eaten in the evening they often cause disrupted sleep and nightmares if high dopamine.

## **HOW ASPARTATE AND GLUTAMATE CAUSE DAMAGE**

Aspartate and glutamate act as neurotransmitters in the brain by facilitating the transmission of information from neuron to neuron. Too much aspartate or glutamate in the brain kills certain neurons by allowing the influx of too much sodium and calcium into the cells. This influx triggers excessive amounts of free radicals, which kill the cells. The neural cell damage that can be caused by excessive aspartate and glutamate is why they are referred to as "excitotoxins." They "excite" or stimulate the neural cells to death by a process known as transneural degeneration..

Aspartic acid is an amino acid. Taken in its free form (unbound to proteins) it significantly raises the blood plasma level of aspartate and glutamate. The excess aspartate and glutamate in the blood plasma shortly after ingesting aspartame or products with free glutamic acid (glutamate precursor) leads to a high level of those neurotransmitters in certain areas of the brain.

The blood brain barrier (BBB) which normally protects the brain from excess glutamate and aspartate as well as toxins is not fully developed during childhood, does not fully protect all areas of the brain, is damaged by numerous chronic and acute conditions, and allows seepage of excess glutamate and aspartate into the brain even when intact.

The excess glutamate and aspartate slowly begin to destroy neurons. The large majority (75%+) of neural cells in a particular area of the brain are killed before any clinical symptoms of a chronic illness are noticed.

Aspartame decreases the availability of Tryptophan to the brain. Tryptophan is the essential amino acid building block to serotonin, which when present in the brain in low amounts leads to depression and compulsive disorders.

The risk to infants, children, pregnant women, the elderly, and persons with certain chronic health problems from excitotoxins are great. Even the Federation of American Societies For Experimental Biology (FASEB), which usually understates problems and mimics the FDA party-line, recently stated in a review that "it is prudent to avoid the use of dietary supplements of L-glutamic acid by pregnant women, infants, and children. The Existence of evidence of potential endocrine responses, i.e., elevated cortisol and prolactin, and differential responses between males and females, would also suggest a neuroendocrine link and that supplemental L-glutamic acid should be avoided by women of childbearing age and individuals with affective disorders." Aspartate from aspartame has the same deleterious effects on the body as glutamate.

The exact mechanism of acute reactions to excess free glutamate and aspartate is currently being debated. As reported to the FDA, those reactions include: Headaches/migraines, nausea, abdominal pains, fatigue (blocks sufficient glucose entry into brain), sleep problems, vision problems, anxiety attacks, depression, and asthma/chest tightness.

## **PHENYLALANINE-(50%-OF-ASPARTAME)**

Phenylalanine is an amino acid normally found in the brain. Persons with the genetic disorder, phenylketonuria (PKU) cannot metabolise phenylalanine. This leads to dangerously high levels of phenylalanine in the brain (sometimes lethal). It has been shown that ingesting aspartame, especially along with carbohydrates can lead to excess levels of phenylalanine in the brain even in persons who do not have PKU.

retinal damage, interferes with DNA replication and causes birth defects. Due to the lack of a couple of key enzymes, humans are many times more sensitive to the toxic effects of methanol than animals. Therefore, tests of aspartame or methanol on animals do not accurately reflect the danger for humans. As pointed out by Dr Woodrow C. Monte, Director of the Food Science and Nutrition Laboratory at Arizona State University, "There are no human or mammalian studies to evaluate the possible mutagenic, teratogenic, or carcinogenic effects of chronic administration of methanol."

It has been pointed out that some fruit juices and alcoholic beverages contain small amounts of methanol. It is important to remember, however, that methanol never appears alone. In every case, ethanol is present, usually in much higher amounts. Ethanol is an antidote for methanol toxicity in humans. The troops of Desert Storm were "treated" to large amounts of aspartame-sweetened beverages, which had been heated to over 86F (30C) in the Saudi Arabian sun. Many of them returned home with numerous disorders similar to what has been seen in persons who have been chemically poisoned by formaldehyde. The free methanol in the beverages may have been a contributing factor in these illnesses. Other breakdown products of aspartame such as DKP, may also have been a factor.

#### **DIKETOPIPERAZINE-(DKP)**

DKP is a by-product of aspartame metabolism. DKP has been implicated in the occurrence of brain tumours. Olney noticed that DKP, when nitrosated in the gut, produced a compound which was similar to N-nitrosourea, a powerful brain tumor causing chemical. Some authors have said that DKP is produced after aspartame ingestion. DKP is formed in liquid aspartame-containing products during prolonged storage.

G.D. Searle conducted animal experiments on the safety of DKP. The FDA found numerous experimental errors occurred, including "clerical errors, mixed-up animals, animals not getting drugs they were supposed to get, pathological specimens lost because of improper handling," and many other errors. These poor laboratory procedures may explain why both the test and control animals had sixteen times more brain tumours than would be expected in experiments of this length.

#### **BOOKS**

- **"EXCITOTOXINS: THE TASTE THAT KILLS"** (Health Press 1-800-643-2665) by Russell L. Blaylock MD. One of the best books available on excitotoxins. Well worth reading!
- H. J. Roberts, M.D., *Aspartame (NutraSweet), Is it Safe?* Available from the Aspartame Consumer Safety Network.
- *Sweet'ner Dearest*, Available from the Aspartame Consumer Safety Network
- Mary Nash Stoddard, *The Deadly Deception*, Available from the Aspartame Consumer Safety Network.
- The Aspartame Consumer Safety Network, The Aspartame Consumer Safety Network Synopsis.