# FOOD ADDITIVES: WHAT YOU EAT CAN KILL YOU

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It's a well-won cliché – you are what you eat. But the truth is, you might cease to exist at all if you make poor food choices. Think the food you eat can't kill you?

Think again!

For the first time in 200 years, American children may have life expectancies shorter than their parents. This shocking reversal appears mainly to be due to rampant obesity. In addition to widespread obesity, chronic illnesses of all kinds are now appearing in astronomical rates among our youth, according to a new study appearing in the Journal of the AMA (JAMA) .

And what doesn't kill you makes you weaker. Childhood asthma has increased over 200 percent, the aforementioned rate of obesity is up 400 percent and neurodevelopment disorders, such as ADHD and autism, have gone through the roof during the past 30 year.

The survey also found that 60 percent of children had at least one cardiovascular risk factor and that 30 percent had two or more. Overall the number of chronic illnesses in young people has increased almost 500 percent in the past 40 years.

Another study found that children with chronic illnesses were three times more likely to develop acute conditions that would require hospitalization. And many would die.

Because you're older means you're out of the woods, right? Wrong. Older people have not been spared this onslaught. A recent comprehensive review found that neurological disorders have been grossly underestimated and that neurodegenerative diseases are reaching frightening proportions. Autoimmune diseases (lupus, rheumatoid arthritis, etc.), certain cancers (leukemia, multiple myeloma, and lymphoma) and a number of endocrine-related disorders have all exploded in recent years.

So what gives? The majority of "authorities" have concluded that most of these problems have an environment cause, which means we are doing this to ourselves.

The big question is, what environmental toxins are responsible? The evidence indicates that a wide assortment of toxins acting together in an additive or synergistic way cause these quasi-epidemics.

There are a host of industrial toxins that are the culprits. The following are just a few:

Pesticides
Herbicides
Mercury
Cadmium
Lead
Aluminum

There is general agreement that a drastic change in our diets over the decades, with heavy doses of junk foods and other foods with poor nutritional content, also contributes heavily to our problems. In addition there is the widespread use of illicit drugs, over-vaccination, and a lack of adequate regular exercise. Excitotoxicity links all of these problems. Ironically, a number of these excitotoxin conditions, have been added to our foods since 1945.
One of the most recent findings is that glutamate receptors (responsible for receiving transmissions to the brain) exist not just in the brain but throughout the body in every organ and tissue. This means that eating foods that raise blood level of glutamate to high levels can cause major problems.

## **What Is Excitotoxicity?**

In 1957, a couple of curious researchers were conducting an experiment to see if a common amino acid, called glutamate, could help repair a diseased retina.

They fed rats the glutamate (also called glutamic acid) in the form of MSG (monosodium glutamate).

What they found shocked them. The retinal cells that allow vision had been swept away as if by a great windstorm. They reported their findings in an obscure ophthalmology journal, where it was quickly forgotten.

Some 10 years later another researcher, neuroscientist, Dr. John Olney, decided to use their method of destroying retinal cells in order to study visual pathways in the brain.

To his surprise, MSG was responsible for destroying vital functions, including retinal vision cells and specific areas of the brain, primarily in the hypothalamus.

In addition, Olney discovered that the glutamate was causing brain neurons to become overexcited, virtually exciting themselves to death. He named this phenomenon excitotoxicity.

Since his early discovery in 1968, a great deal has been learned about this process. We now know that glutamate is one of the common neurotransmitters in the brain and that it acts by keeping the brain alert.

It also plays a major role in each of the following:

Learning
Memory
Endocrine system control
Emotions

The obvious questions arise. If glutamate is the most abundant neurotransmitter in the brain, why doesn't it destroy the brain as seen in the previous experiments? In fact, it would, except God also have installed an elaborate system to protect the brain.

Basically, glutamate is kept within brain cells and only very small concentrations are allowed to escape during everyday brain functions, which are then quickly removed.

Today, this process is being discussed in virtually all neuroscience journals and journals of neurological diseases. In short, it is now mainstream. Now let us focus on some of its specific effects.

**Excitotoxins Target Humans**

Anytime you hear someone try to defend the safety of excitotoxin additives in foods, it's important to know that humans are five times more sensitive to their toxic effects than the next most sensitive animal in the world, the rat.

We are 20 times more sensitive than monkeys.

That means one-twentieth the dose of MSG used to cause obvious brain injury in a monkey will do the same to you.

Humans regularly eat doses of excitotoxins that damage animal brains. This fact was admitted by a group of scientists reviewing MSG toxicity in our food supply.

We must also understand that the fetus, infant, and small child are four times more sensitive to MSG toxicity than the adult. Feeding table food to a small child, for example, can be dangerous and have life-long consequences.

I have heard a number of people remark that they are not sensitive to MSG. Usually that mean it doesn't cause them to have a headache or other symptoms of the "Chinese restaurant syndrome". In fact, most of the effects of MSG occur silently and over the years.

The people who develop the Chinese restaurant syndrome are the lucky ones, because they know to avoid it.

Careful studies have shown that when you combine foods containing MSG with aspartame, blood glutamate levels are double what they would be if you ingest MSG alone.

Let's say you eat several foods containing MSG, such as corn chips, a frozen dinner, and a commercial soup, your blood glutamate will rise, let's day 20-fold. If

you add a diet drink, it then increases to 40-fold or 4,000 percent! People do this all the time, especially young people.

Because of the way excitotoxicity works, we know that people who have poor nutrition, chronic diseases, chronic stress, or are exposed to other toxins, are much more affected by the excitotoxin food additives. Some lucky few are born with powerful detoxification and antioxidant systems, which afford them much protection.

You must also understand that virtually all processed foods contain one or more excitotoxins. Many contain three to as many as five. This is very common in soups, frozen dinners and chips.

## MSG Lurks in Your Food

It is also important to know that federal law says that any food containing less than 99 percent pure MSG can be labeled by any name the manufacturers wishes.

We frequently see MSG hiding behind such innocent-sounding names as hydrolyzed protein, vegetable protein, soy protein isolate, soy protein concentrate, whey protein, and natural flavorings, spices, enzymes, autolyzed yeast extract, stock, broth and carrageenan.

As you can see, people are at great danger from these excitotoxic food additives.

Nothing has been done about this problem because it is a multibillion dollar business that involves the makers of the additives as well as all food processors, supermarkets, food warehouses and Wall Street itself.

Food stores and processors spend billions each year, advertising in virtually every media outlet available, including newspapers. TV radio, magazines, and even scientific journals. They do not want to lose advertising dollars by doing a story on the dangers of one of the most commonly used food additives.

## Young People Especially Susceptible

Many studies have shown that glutamate plays a major role in how the brain is formed during development.

There is a programmed rise and fall in brain glutamate levels during brain formation, which occurs in humans not only during intrauterine life, but until the age of 27.

This oscillation in brain glutamate is very critical, and any disruption in glutamate levels has dire consequences.

It has been shown that during pregnancy diet high in MSG increases the developing baby's glutamate levels to those twice as high as the mothers. This can significantly alter how the baby's brain forms and functions.

Very high MSG intake (of any excitotoxin) can cause abnormal learning, addiction risk, and behavioral, emotional control, and endocrine problems later in the baby's life.

We now know, for instance, that glutamate is the main control neurotransmitter for the hypothalamus. This section of the brain controls most of your hormones, eating behavior, temperature control, pain regulation, and sleep habits, as well as the autonomic control of your heart, GI tract, lungs, and bladder.

When animals are fed MSG early in life, they develop severe abnormalities, which include a short stature, small endocrine organs (pituitary, adrenal glands, thyroid, ovaries, and impaired learning.

While I do not believe dietary excitotoxin food additives are the primary cause of autism, I firmly believe that they greatly aggravate it. It also most likely plays a significant role in ADHD and similar learning problems. My beliefs are supported by a great number of experimental studies.

Some of these injuries caused by excitotoxins are reversible, but some are not. The degree of harm depends on the timing of the exposure and the dose. For example, we now know that exposure within the mother can have devastating effects on the child's brain development and result in major problems. Exposure later in life cause a different series of problems, and many of these are reversible.

## MSG's Toxic Effect

Combined with the excessive use of vaccines which also triggers excitotoxicity within the brain, dietary excitotoxins can have devastating effects on brain function.

This is especially true if the vaccine contains mercury, such as the flu vaccine. It is also important to recall that most children are exposed to a number of pesticides and herbicides both within the home and outside the home. Many of these chemicals have been shown to damage the brain by triggering excitotoxicity even in very small concentrations. These chemicals also accumulate in the brain.

A recent survey found that over 65 percent of Americans are overweight, as are 30 percent of children. Some 18 percent of these children are grossly obese. Everyone talks about obesity, but few have looked at one of the most likely causes – excitotoxins in the food and drinks.

In the original studies by Dr. Olney in 1968, it was observed that all the animals that were fed MSG as infants became grossly obese. Over the years this has been observed in virtually every animal species. In fact, it is so reproducible it is the method scientists use to produce obese animals in doing obesity research.

Since the 1980's, Americans have consumed 282,000 metric tons of MSG and 800 million pounds of aspartame every year. The amount of MSG consumed every decade doubles. Both are excitotoxins and are found in foods, drinks, medications, vaccines, and even fertilizers.

Following a comprehensive review of all studies on MSG toxicity, it was noted by the prestigious Life Sciences Office of the Federation of American Societies for Experimental Biology (FASEB) that infants and small children were receiving a dose of MSG from commonly eaten foods that equaled those amounts regularly used to produce brain lesions in animals.

Despite this shocking admission, the public was kept in the dark concerning this growing danger. Since this 1993 study, a large number of well-done studies from all over the world confirmed all that I will be telling you in this newsletter.

The obesity caused by MSG (all excitotoxins) exposure in animals is the very same as we are seeing in our youth. This obesity is very difficult to combat via dieting, exercise also has little effect. Animals with diets high in MSG tend to favor sweetened foods over their traditional diets, just as we see in our children.

MSG has one other characteristic that makes it especially dangerous – it is associated with insulin resistance (type -2 diabetes), hypertension, and grossly abnormal blood lipids – especially a high VLDL and LDL-cholesterol. This constellation of findings is called the metabolic syndrome. 45 million Americans are suffering from this syndrome and the numbers continue to grow, especially among our youth.

This leads us to another link between food-based excitotoxins and disease, and that is atherosclerosis, also known as hardening of the arteries. We can expect a growing epidemic of very young people dying from cardiovascular diseases and strokes. By this, I mean 20 and 30-year olds having heart attacks and strokes in mass numbers. We know that Type-2 diabetes alone increases one's risk of having a heart attack by over 360 percent, as well as increasing the risk of blindness, impotence, stroke, heart failure and early death.

Even newer studies have shown that feeding MSG to animals not only dramatically increases the free radicals and lipid peroxidation products in the walls of their arteries, the increase lasted for what would be the equivalent of decades in humans. In most cases, the MSG exposure was early in life and limited to six to 10 days.

Similar studies have also shown that MSH also causes the prolonged generation of free radicals in the following:

Liver
Kidney
Brain

This is one of the most frightening things yet discovered concerning this excitotoxic food additive. And remember – aspartame coupled with MSG-laced foods doubles the risk.

In essence, this means a diet filled with food additive excitotoxins causes you to age much faster and more intensely than normal, which increases your risk of developing a chronic disease.

## MSG's Effects on Sexual Function

Exposure early in life to MSG disrupts the endocrine control system located within the hypothalamus of the brain, and can last for a lifetime. Not only are the hormones that regulate reproduction and sexual function disrupted, but MSG can also change the very wiring within these critical brain areas. This can have a crucial effect on development of a child's sexual characteristics. Animals exposed to MSG early in life have significant problems with reproduction, including infertility. Disruption of regulatory factors in the brain plays a major role, but recent studies (testes, seminiferous tubules, spermatocytes, etc) and female reproductive system (ovary, follicles, fallopian tubes, and uterus) are controlled by glutamate receptors. High blood levels of glutamate can cause destruction of these important receptors.

Because of the abundance of glutamate receptors within the uterus, menstrual, problems are to be expected. Combine this with xenoestrogens (estrogen-like substances) in plastic products contaminating both food and bottled water, and we can better understand why there are so many female health problems in this country.

High amounts of glutamate in the diet can also cause abnormal spasms of the uterus, which could lead to cramping and excessive bleeding during menstruation.

Americans, especially women, are obsessed with soy foods and products, based on lies they have been told by the popular media. Soybeans contain one of the highest glutamate levels of any plant, and when the bean is processed, the glutamate is released.

Studies have shown that feeding soy to infant monkeys increased aggression 67 percent and left to animals that were antisocial. Another study, lasting some 25 years, found that people who ate the most soy had the greatest brain atrophy

(shrinkage). A large percentage of women are feeding their babies soy formula, never realizing the danger.

For men, a number of countries have done studies that have found abnormal sperm and reduced sperm production.

## Multiple Sclerosis and MSG

There is no evidence that MSG causes MS, but there is compelling evidence that it is primarily an excitotoxin disorder. Thus, dietary excitotoxins can worsen it. The disease causes the brain to release large amounts of glutamate around nerve fibers, and this destroys the covering of the nerve) myelin sheath).

MS is a disease characterized by alternating periods of worsening with long periods of improvement. At the sites of the damage, called MS plaques, there is no protective blood-brain barrier to shield the area from toxins in the blood. When foods or drinks containing excitotoxins are consumed, the blood glutamate and aspartate rise to very high levels as we have seen. This enters at the site of the plaques, causing significant worsening for very long periods.

People with MS should avoid all excitotoxin food additives and even food that are naturally high in glutamate, such as pureed tomatoes, cheeses, and mushrooms (especially Portobello mushrooms). I have witnessed a number of MS patients undergo dramatic improvements by following a diet of excitotoxins.

## Excitotoxins and Alzheimer's Parkinson, and Lou Gehrig's Disease

The bulk of the research into these devastating diseases indicates that excitotoxicity plays a significant, if not central role. A number of associated environmental exposures also increase the risk of each of these disorders; studies have suggested a link between elevated mercury levels in the brain as well as exposure to pesticides and herbicides.

In the case of Parkinson's disease, several pesticides – rotenone in particular – can produce symptoms in experimental animals that closely resemble the disease seen in man. Cases of rapid onset Parkinson's disease have also been associated

with pesticide exposure in the home of six people as reported in a prestigious neurology journal.
Studies have shown that the pesticides not only trigger excitotoxicity within specific areas of the brain, but they also increase activation of cells called microglia cells that are closely associated with neurogenerative diseases. Micoglia cells are the brain's immune cells. Mercury acts in the same manner, and blocking glutamate receptor's blocks most of mercury's toxic effects.

What this shows is a close link between the excitotoxic process and neurodegenative diseases.

The reason not all people develop Parkinson's or other neurodegenerative diseases following these toxic exposures is that only people with a hereditary or congenital defect that hinders detoxification are sensitive. Yet, everyone will develop some damage, and many will suffer from memory loss and have difficulties concentrating.

In addition, many interacting events occur as we age:

- Inflammatory cytokines increase through the body
- Our antioxidant defenses begin to decline
- Studies have shown that DNA oxidation is four times higher in the aged brain
- Mitochondrial DNA is 10 times more sensitive than the cell's nuclear DNA

This means that as we age, especially after 70, the rate of free radical damage to our cells increases dramatically.

Subsequently, as we age, we need considerably more antioxidants in our diets and from supplements. Likewise, our cells become more sensitive to the damage by excess glutamate. Nutrients can protect us from this damage.

## **Sudden Cardiac Death**

A number of young people, mostly athletes, have died from a condition that in increasingly called "sudden cardiac death".

Studies indicate that these young people could either have a congenital defect in the electrical system of the heart or other structural heart problems. For many, no cause is found. Experimental studies have shown that if an animal's magnesium level is lowered and then the animal is subjected to a fright, about 50 percent to 60 percent will suddenly die. They die of cardiac failure, just like these young people. But if you add magnesium to their diets and repeat the fright, none die.

One recent study seems to have found the answer to this mystery. It found that when magnesium is lowered, the glutamate receptors in the heart become overactive and throw the heart muscle into abnormal beating patterns (called arrhythmia. The heart muscle also becomes quite inflamed. Blocking the glutamate receptors prevents these reactions.

It has been noticed that people who succumb to sudden cardiac death often die after eating a meal. It's possible that when people who have low magnesium levels eat a meal high in glutamate, glutamate levels rise enough to produce the same deadly effect seen in the animals. We know this happens in the brain, and that the heart's electrical system contains numerous glutamate receptors.

There is also evidence that overstimulation of glutamate receptors within the walls of the coronary arteries can cause the arteries to go into severe spasm, leading to a heart attack. Low magnesium plays a critical part. One of magnesium's functions is to prevent the glutamate receptors (the NMDA receptor) from becoming overactive.

## Excitotoxins and Cancer

One of the most interesting aspects of excitotoxin food additives and disease is the connection to cancer growth, invasion, and spread. This was first discovered with malignant brain tumors (glioblastoma multiforma). It was shown that elevated glutamate levels in the cavity of the tumor caused the tumor to invade the surrounding brain, and consequently result in death much faster.

Recent research has discovered that a multitude of cancers, including lung, breast, prostate, colon, and melanoma, contain glutamate receptors. Those with more receptors had a much worse prognosis.

For example, in a study of people with oral cancers, those with the highest level of glutamate receptors had larger tumors, higher rates of metastasis, and a much poorer prognosis.

One of the most horrifying cancers of children is the medulloblastoma. Studies have shown that prognosis is highly dependent on glutamate receptors. Those without protective receptors have the worst type of tumor.

Melanoma is one of the most deadly cancers. Melanomas not only contain glutamate receptors, they also secrete high levels of glutamate. Prognosis is strongly dependent on the presence of these receptors: that is, those with the most glutamate receptors have the worst prognosis.

Researchers have found that using drugs to block glutamate receptors dramatically reduces the growth, invasion and spread of a number of cancers.

These glutamate-blocking drugs also dramatically increase the effectiveness of traditional chemotherapy medications. At the same time, they protect normal cells in the body from chemotherapy toxicity.

The irony is that cancer patients are not being told that foods containing high levels of glutamate make their cancers grow faster and make them more likely to spread. These diets also make the traditional treatments less effective, but very few practicing oncologists are aware of this connection to glutamate.

Glutamate and other excitotoxins can trigger prolonged generation of free radicals and lipid peroxidation throughout the body, which leads to a number of chronic diseases, including obesity.

Recent studies have also linked glutamate excess to chronic fatigue syndrome, multiple chemical sensitivity, HIV dementia, glaucoma, macular degeneration, osteoporosis, pulmonary disorders, bladder problems, insomnia, and a number of behavioral problems, including addiction.

It is vital to avoid foods containing excitotoxin additives. To do that you should either eat only freshly prepared foods, as our ancestors did, or become an

obsessive label reader and learn all the disguised names for glutamate. Discipline is essential. But one thing is certain: We must learn to avoid excitotoxins.

Our very lives depend on it!

Dr. Badanek's office looks at sickness and disease at a totally different perspective. We address the cause of all conditions, test for them, and treat the cause not just the symptoms. It is a totally new paradigm shift of conscientiousness for the new patient. To input knowledge to the patient, which is most lacking today in our health care delivery system, is empowering the patient to be successful with their health care challenges presented.

Please schedule an appointment to consult with your health challenges. We offer a courtesy consultation for your first visit to meet Dr. Badanek. Dr. Badanek has been in private clinical practice for 34 years working in the field of Integrative/Functional Medicine.

Dr. Badanek's website: Dr.Badanek.com will give you an idea of what his facility has to offer the sick and health challenged.

To schedule an appointment, please call 352-622-1151.