

~ Chapter 7 ~

## **More on Sinister Synthetics: Where They're Found and Why They're So Sinister**





## **Aspartame**

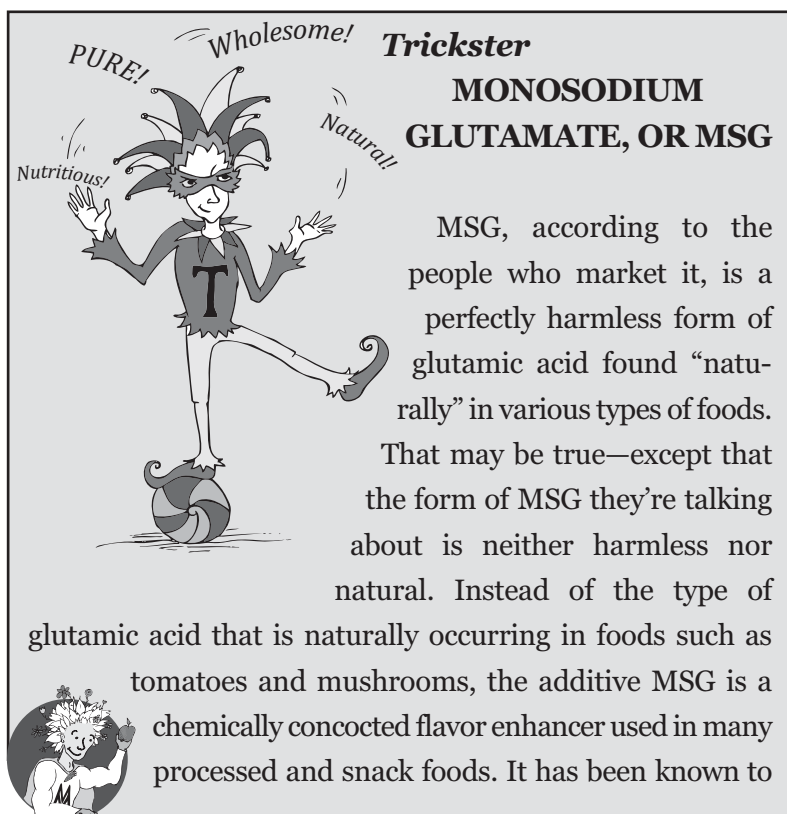
**Where it's found:** Numerous “diet” and “sugar-free” products ranging from soda to yogurt to iced tea and fruit-flavored beverages to children’s vitamins. It is often under its original brand name, NutraSweet.

**Why it's sinister:** This ubiquitous artificial sweetener was accidentally discovered by a researcher for a pharmaceutical company (Searle) who first noticed its sweet taste. Aspartame has been associated with a wide variety of adverse reactions, many of them serious. These include migraines, vision loss, stomach ailments and abdominal pains, numbness or tingling of extremities, chronic fatigue, memory loss, seizures, tremors, dizziness, slurring of speech, rapid heart-beat, depression, anxiety and panic attacks. Countless consumer complaints associated with aspartame use have been logged by the FDA.

One of aspartame’s key ingredients, aspartic acid, is listed by medical authorities, such as prominent neurosurgeon and author Dr. Russell Blaylock, as an excitotoxin, along with glutamic acid found in MSG. Such chemicals are neurotransmitters that can cause brain cells to die through over-stimulation, a process that particularly threatens children, the elderly and others whose blood-brain barrier either is not fully developed or may have been compromised. Another aspartame ingredient, the amino acid phenylalanine, may reduce levels of serotonin in the brain, which could account for the feelings of depression some users have reported.



Early research on laboratory animals indicated that using aspartame might lead to an increased risk of developing a brain tumor. This helped convince scientific advisers to the FDA to recommend that it not be allowed on the market, but their concerns were swept aside by a newly appointed FDA commissioner at the start of the Reagan Administration. It should be noted that the decision was followed by what, according to the Community Nutrition Institute of Washington, D.C., was a “dramatic and sustained increase in the incidence of brain tumors in the United States.”<sup>66</sup>



**Trickster**  
**MONOSODIUM  
GLUTAMATE, OR MSG**

MSG, according to the people who market it, is a perfectly harmless form of glutamic acid found “naturally” in various types of foods. That may be true—except that the form of MSG they’re talking about is neither harmless nor natural. Instead of the type of glutamic acid that is naturally occurring in foods such as tomatoes and mushrooms, the additive MSG is a chemically concocted flavor enhancer used in many processed and snack foods. It has been known to

produce a wide variety of adverse reactions, such as the headaches and feelings of numbness, dizziness and tightening of the throat and jaw. In people who are particularly MSG-sensitive, such reactions have been known to be quite severe.

MSG is also in a category of ingredients known as “excitotoxins” (as is aspartame), so named because they can actually excite brain cells to death. But in order to do that, it must first cross the blood-brain barrier –something it is most apt to do when given to children, whose blood-brain barriers are not fully formed, and older people or those whose blood-brain barriers may have been compromised due to injury or illness.

According to prominent neurosurgeon and author Dr. Russell Blaylock, sudden rage has been produced in animals by injecting tiny amounts of glutamate into the hypothalamus. Giving a child enough exposure to the substance, he said, might precipitate a similar outburst, precipitating an explosion of violent rage “over something that normally wouldn’t result in any more than a shoving incident or name calling.”<sup>67</sup>

While some foods list MSG as an ingredient on their labels, others may harbor disguised forms of it—including things like hydrolyzed protein, sodium or calcium caseinate, and autolyzed yeast. Or it may be contained in ingredients that are simply listed under such names as “natural flavoring” or “broth.” Whatever it’s called, it’s something you definitely want to keep out of your family’s diet.



## **Artificial Color**

**Where it's found:** Candy, cookies, baked goods and a wide variety of processed foods

**Why it's sinister:** As was noted in *Chemical-Free Kids*, artificial colors have long been a source of concern among scientists and health authorities. In fact, the use of toxic substances to color and disguise the appearance of food was what led to the adoption of the original Pure Food and Drug Act of 1906. Many of the coloring agents used since have been shaded by controversy, and some have been banned outright. Despite periodic adjustments in rules regarding the use of synthetic hues, they've continued to be regarded as unhealthy additives, and possible triggers for asthma and allergies—hardly a surprise when you consider their origins. Many of the older ones (including some still in use) were made from coal tar—a thick, black liquid derived from coal. Some more-recent artificial colorings are petroleum extracts.

One thing that worries researchers is the fact that children are apt to ingest a number of artificial colorings at one time. In studies performed at Yale University's Department of Pediatric Neurology designed to simulate the “real-world” dietary exposure of children to artificial color combinations, baby rats fed a mixture of five such colors became hyperactive and showed diminished learning ability.

## **Chemical Pesticides**



**Where they're found:** Virtually all non-organic foods, in varying amounts—but with the highest

levels in certain types of fruits and vegetables (as detailed in chapter 2), especially those that are imported from other countries.

**Why they're sinister:** The Center for Food Safety may have summed it up best in explaining why it is so important to continue to track their use: “Various pesticides are known or suspected to have unintended adverse effects on human health and the environment—such as increased risks for cancer, neurological disorders, and endocrine and immune system dysfunction; impaired surface and ground water; and harm to fish and wildlife. In addition, chemical pesticides become less effective as pests develop resistance to them, just as pathogenic bacteria develop resistance to antibiotics. As a result, farmers increase pesticide use and eventually switch to other pesticides that also may become ineffective—a phenomenon dubbed ‘the pesticide treadmill.’ Pesticides also often kill predators that would otherwise help control pests.”<sup>68</sup>

Exposure to pesticides, it should be emphasized—particularly the organophosphate varieties—has been acknowledged by scientists (and even the EPA) as posing a special danger to the health of infants and children, whose neurological functions are especially apt to be affected by them, possibly resulting in learning and behavior disorders.

## **Genetically Modified Organisms (GMOs)**

**Where they're found:** Processed foods with ingredients derived from non-organic soybeans, corn and canola.



**Why they're sinister:** The insertion of alien genes into crops used for food may create new and unknown allergens and toxins, and also may cause these mutant genes to get a foothold inside the body. While no extensive safety testing of GMOs has been performed due to an FDA determination that they are “substantially equivalent” to non-genetically engineered foods, studies that have been done have alarmed many reputable scientists and food-safety specialists. Of particular concern are the possible health risks that these ingredients might pose for young children and the possibility that antibiotic-resistant “marker genes” may cause antibiotics to become even less effective in treating illness.

Another aspect of genetic engineering that has been found to be problematic is the fact that a majority of the crops involved are altered to withstand commercial herbicides—particularly Monsanto’s Roundup®, which contains glyphosate. This not only has caused glyphosate to be liberally applied to them, but to have its use accelerated, along with that of other, more-toxic herbicides, as weeds become increasingly resistant to its effects. The result is apt to be an ever-greater concentration of potentially harmful pesticide residue in our food.

## **High-fructose corn syrup (HFCS)**

**Where it’s found:** Soft drinks, fruit juices, bread and other baked goods, various other processed foods.

**Why it’s sinister:** This sweetening agent, which is formed by treating corn syrup with enzymes, has a very high glycemic index, meaning it can cause a rapid rise in



blood sugar and insulin levels. Of perhaps even greater concern is its tendency to deplete the body of the essential trace mineral chromium (see *Mighty Micronutrients*), which plays an important role in metabolizing insulin and also helps the body to synthesize cholesterol. Frequent consumption of this widely used ingredient may thus contribute to a number of problems, including diabetes, obesity, hypoglycemia and cardiovascular disease.

### **Hydrogenated (or partially hydrogenated) oils**

**Where they're found:** Cookies, cake, frozen dinners and entrees, margarine, other processed food products.

**Why they're sinister:** These chemically modified vegetable oils, the main purpose of which is to extend the shelf life of products by solidifying liquid fats, are the chief source of artery-clogging trans fats in our diet—and a significant contributor to heart disease.

### **Preservatives derived from petroleum (BHA, BHT, TBHQ)**

**Where they're found:** All sorts of processed foods and confections.

**Why they're sinister:** These widely used preservatives, the purpose of which is to give food a longer shelf life and keep fats from turning rancid, are all believed to pose possible health risks. In the 1970s, researchers discovered that when BHA and BHT were fed to pregnant mice, their offspring were born with levels of two essential





brain chemicals—serotonin and cholinesterase—reduced by half (as was originally noted in *Chemical-Free Kids*). Both are banned or restricted in other countries, and BHA is considered a possible carcinogen by the World Health Organization. In addition, serious symptoms, such as vomiting, delirium, and collapse, have reportedly resulted from consuming just one gram of TBHQ.



## **Recombinant bovine growth hormone (rBGH or rBST)**

**Where it's found:** Many non-organic dairy products (e.g., milk, cheese, ice cream, butter, yogurt) except for those that specifically state they come from rBGH-free cows.

**Why it's sinister:** This genetically engineered pharmaceutical, the sole purpose of which is to induce cows injected with it to increase their milk output, also accelerates the production of another growth hormone that research indicates may create a higher risk of breast, prostate and colon cancer. In addition, it makes cows more prone to mastitis and other problems (including increased pus in milk) for which antibiotics are often administered, helping make bacteria more antibiotic-resistant.

### **PUTTING THE HEAT ON A HAZARD THAT BEGINS IN INFANCY**

Among the suspected chemical hazards that are coming to light is the revelation that heating plastic baby bottles—made by four major manufacturers, comprising 95 percent of those baby bottles on the market—results in the release of a chemical called bisphenol-A (BPA) in amounts that some researchers considered potentially harmful. In fact, the Canadian government has actually labeled the chemical “dangerous” and contemplated banning it entirely. Wal-Mart, the world’s largest retailer, announced it had begun phasing out the suspect baby bottles, anticipating all its baby bottles to be BPA-free by early 2009.



One expert, Dr. David Wallinga, director of the Institute for Agriculture and Trade Policy in Minneapolis, referred to BPA as a “hormone wrecker,” noting that at high enough levels, it can lead to certain types of cancer, reproductive problems and other health issues.

When a consortium of environmental groups tested the bottles, they found that five to eight parts per billion of BPA were released. While that is well below the federal safety standard for the chemical, it is also well above levels that animal research has shown might be harmful.<sup>69</sup>

Amidst such concerns, parents are rediscovering glass baby bottles, which are now considered a “hot” item. According to the Associated Press, Babies “R” Us sold more than five times the number of glass bottle in the spring of 2007 than it did the year before.



# **Chemical-Free Connections and Resources**

## **Beyond Pesticides**

701 E Street SE #200,  
Washington, DC 20003  
Phone: (202) 543-5450  
Fax: (202) 543-4791  
<http://www.beyondpesticides.org>

## **The Center for Food Safety**

Pennsylvania Ave. SE, #302  
Washington, DC 20003  
Phone: (202) 547-9359  
Fax: (202) 547-9429  
<http://www.centerforfoodsafety.org>

## **Environmental Working Group**

1436 U St. N.W., Suite 100  
Washington, DC 20009  
(202) 667-6982  
<http://www.ewg.org/>

**Natural Resources Defense Council (NRDC)**

40 West 20th St.  
New York, NY 10011  
Phone: (212) 727-2700  
Fax: (212) 727-1773  
<http://www.nrdc.org>

**The Organic Center**

P.O. Box 20513  
Boulder, CO 80308  
Steven Hoffman, Managing Director  
(303) 499-1840  
<http://www.organiccenter.org>

**Northwest Coalition for Alternatives to Pesticides  
(NCAP)**

P.O. Box 1393  
Eugene, OR 97440-1393  
Phone: (541) 344-5044  
Fax: (541) 344-6923  
<http://www.pesticide.org>

**Organic Consumers Association**

6771 South Silver Hill Drive  
Finland, MN 55603  
Phone: (218) 226-4164  
Fax: (218) 353-7652  
<http://www.organicconsumers.org>

**Physicians for Social Responsibility**

1875 Connecticut Ave., NW

Suite 1012

Washington, DC 20009

Phone: (202) 667-4260

Fax: (202) 667-4201

<http://www.psr.org>

**SafeLawns Foundation**

60 Pineland Drive Building 3,

Suite 207

New Gloucester, ME 04260

Phone: (207) 688-8882

Fax: (207) 688-8905

<http://safelawns.org>

**<http://www.drgreene.com>**

The interactive web site of renowned pediatrician and Organic Center Board of Directors Chairperson Dr. Alan Greene offers parents the chance to sign up for his newsletter and to get expert answers to their questions.



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*Visit us at [www.chemicalfreekids.com](http://www.chemicalfreekids.com) to learn more about  
safeguarding your child's diet and environment.*



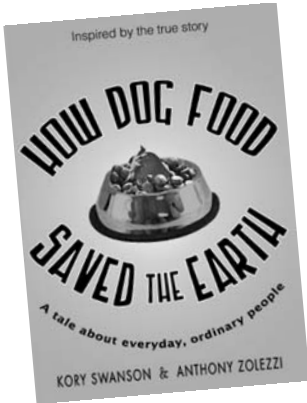
# About the Authors

**Anthony Zolezzi**, an eco-entrepreneur and former chairman of the Organic Center, has devoted much of his career to improving the ways our food is raised, processed, packaged and brought to the table. He now advises some of America's largest food companies on how to deliver more organic, bio-available, and sustainable whole foods to American consumers. He is also the co-author of "Chemical-Free Kids" (Kensington, 2003), "The Detachment Paradox" (ASM, 2004). "How Dog Food Saved the Earth" (ASM, 2005) and "Do Something: Leave Your Mark on the World" (ASM, 2007).

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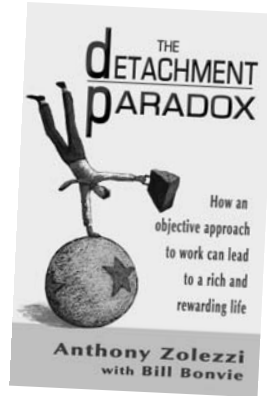


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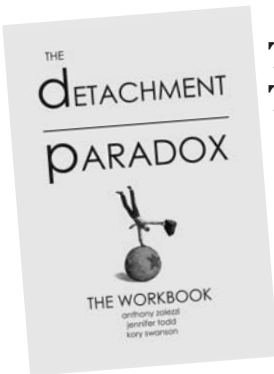
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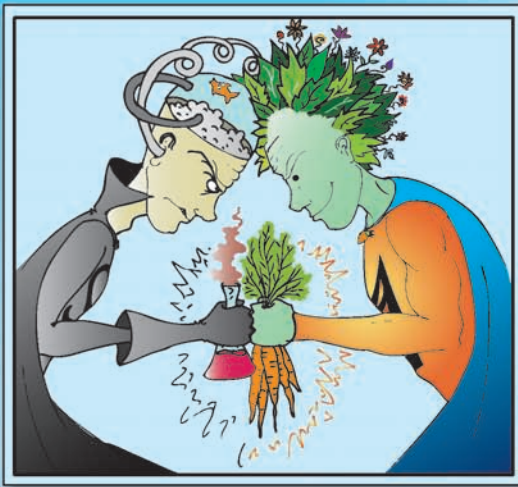
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*Steven R Gundry, M.D., Medical Director of the International Heart and Lung Institute, The Center for Restorative Medicine, and author of "Dr. Gundry's Diet Evolution"*

"*Chemical Free Kids: The Organic Sequel* is an incredible tool that teaches you how to protect the health of your children, with groundbreaking research and practical advice. Today, one in three American children has autism, allergies, ADHD or asthma. But it doesn't have to be that way. This book is for every savvy parent out there!"

*Robyn O'Brien, founder of AllergyKids and mother of four*

"This book makes the most compelling case to date for avoiding chemicals common in conventional food products, and lays out exactly how to do it. If you want to learn what you can do to protect yourself and your family from chemicals used in the modern food industry and improve your health and nutrition, this is a must-read."

*Greg Horn, author of "Living Green, A Practical Guide to Simple Sustainability," former CEO of General Nutrition Centers and Garden of Life.*

ISBN 10: 0-9753157-5-7 \$12.99  
ISBN 13: 978-0-9753157-5-0

