



Food Additives – Friend or Foe?

Hunting and Gathering

The human race has survived throughout history by hunting and gathering. Food has been preserved for centuries by fermenting, drying, salting, pickling, and smoking to help assure its availability year-round. More recently, refrigeration, freezing, and canning extend food's shelf life.

Farmed Out

The world's burgeoning population (estimated to reach 7 billion this year), urbanization (79 percent of Americans live in urban areas on less than 3 percent of the land), and the decline of small farms (American farms 49 acres or smaller in 2002 numbered about one-fifth of those in 1937) have changed what we eat and how we obtain food. As a result of global importation, central distribution, and warehousing, the time it takes for food to go from farm to table is increased. For most modern Americans, hunting and gathering happens in supermarkets.

Enter Chemical Cuisine

Only recently in the big picture of time have numerous chemicals (to which humans have not previously been exposed in the food supply) been added for convenience, to slow spoilage, and to improve appearance, color, flavor, and texture of food. These days, few know or can pronounce what is in their food. Adding chemicals to food is not without controversy—some are clearly necessary to ensure food safety, but others come with known or suspected toxic or allergic adverse effects on health. A closer look at the pros and cons of four food additives follows. Comprehensive online sources of information about these and many more food additives include: <http://www.cspinet.org/reports/chemcuisine.htm>

Sodium & Potassium Nitrite/Nitrate Nitrites and nitrates preserve, flavor, and color processed, cured meats such as bologna, bacon, sausage, jerky, salami, smoked fish, pastrami, ham, hot dogs, etc. Without nitrites and nitrates, the red color in meat would turn gray and the risk of botulism, a serious or even fatal bacterial illness, would increase. Nitrosamines, potent cancer-causing chemicals, can form in the acidic environment of the stomach when meats containing nitrites/nitrates are eaten, especially when the meat is charred. Stomach, colorectal, and pancreatic cancers have been associated with consumption of nitrites and nitrates. Taking supplemental vitamin C may limit the formation of nitrosamines. Nitrite and nitrate ingestion have been linked to migraine headaches and chronic obstructive pulmonary disease. Unpreserved freshly-made sausages and nitrite-free bacon are available in health food stores and some supermarkets.

Monosodium Glutamate (MSG)

Glutamic acid, a naturally occurring amino acid in tasty foods including tomatoes, mushrooms, and ripened or aged cheeses, converts to glutamate when cooked, fermented, or digested. Parmesan and Roquefort cheeses have the highest levels of naturally-occurring glutamate, while several Asian foods are also rich in glutamate, often from fermented soy products or kombu, a dried seaweed used in Japanese cooking. In the early 1900s, the Japanese identified a savory taste (in addition to the four tastes of salty, sweet, bitter, and sour) called "umami" that was eventually determined to be due to high levels of glutamate.

A natural by-product of traditional Japanese cooking methods, glutamate was eventually manufactured as a white powder called MSG. Unlike naturally-occurring glutamate in food, the unbound glutamate in MSG, called free glutamate, can directly access the brain, causing pronounced symptoms that naturally-bound glutamate in foods does not. MSG, a taste enhancer, is abundant in restaurants and fast food, and in canned soups and tuna, soy sauce, bouillon cubes and granules, fermented foods, instant noodles, condiments, veggie burgers, processed meats, powdered milk, packaged seasonings, salad dressings, sauces, snacks, baked goods, etc. Food labeled "MSG Free" may contain free glutamate. On average, each American consumes 1.9 pounds of MSG each year. The following terms on food labels are equivalent to MSG: calcium caseinate, glutamate, glutamic acid, hydrolyzed protein, textured protein, yeast extract, yeast food, yeast nutrient, autolyzed yeast. These terms usually indicate that MSG is present: any "flavoring," soy (sauce, isolate, concentrate, protein), enzyme-modified, bouillon, malt extract, sodium caseinate, maltodextrin, any protein isolate, and the words "fermented" and "seasonings." The artificial sweetener aspartame (NutraSweet™ and Equal™) converts to free glutamate. The acute reactions caused by MSG (a.k.a., Chinese Restaurant Syndrome) are toxic in nature, occur shortly after sensitive individuals ingest MSG, are dose-related, transient, and include headaches, weakness, tingling, dizziness, flushing, cardiac arrhythmias, thirst, asthma, and intense hunger shortly after eating.

Neurosurgeon Russell L. Blaylock, M.D., is concerned about chronic low-dose consumption of MSG for all people but especially for children, infants, and people with poor nutritional status who are less able to offset MSG's toxic effects. Author of *Excitotoxins: The Taste That Kills*, Blaylock states that Americans' prevalent chronic diseases (of the brain, eyes, liver, heart, endocrine system, kidneys, and more) may have their roots in MSG-induced cell death years before symptoms are apparent. It's a must read for anyone wanting to protect their health by learning more about the health risks of MSG, aspartame, and glutamate.

Sulfites/Sulfates

The main health concern from sulfites is allergic reactions that result in difficulty breathing, hives, or even death. People allergic to sulfite-based food additives (including one out of five asthmatics) must strictly avoid them. The following words indicate the presence of sulfites in foods: sulfur dioxide, sulfites, sulfating agents, sodium and potassium bisulfate/metabisulfite, and sodium sulfite. Following the FDA's ban in 1986 of the use of six forms of sulfites in fresh fruits and vegetables in salad bars and grocery produce sections, reports of adverse reactions have markedly decreased. Today, sulfites are most often used to deter spoilage and enhance appearance of dried fruits, shellfish, wine, and prepared potatoes (such as frozen hash browns, French fries, or potato soups). Note that these foods may be in salad bars. Sulfites, naturally present in wine in small amounts, may also be added to kill bacteria or stop fermentation at desired times. Replenishment (if deficient) or supplementation of the mineral molybdenum under medical supervision may help the body detoxify sulfites.

Bromate/Bromide

Bromate and bromide, the ionic first cousins of the element bromine, are in fire retardants, fuel additives, pool and hot tub disinfectants, toothpastes, dyes, pesticides, and pharmaceuticals. The original formulation of Bromo-Seltzer™, a "nerve tonic" or tranquilizer that contained bromide, was removed from the over-the-counter market in 1975 by the FDA because of bromide's toxicity.

Potassium bromate, a dough conditioner banned in many countries, is still allowed in the U.S. in baked goods (often labeled "bromated flour") despite its link to cancer in laboratory animals. Its use in California requires a warning label. Brominated Vegetable Oil (BVO) is used in some citrus-based drinks as an emulsifier to prevent the flavor-packed citrus oils from separating out of water-based beverages. Bromism, toxicity from bromine exposure, is characterized by kidney problems, hearing loss, iodine deficiency, thyroid disease, rashes, psychiatric symptoms (including psychosis and hallucinations that mimic paranoid schizophrenia), gait problems, depression, and seizures. Years ago, bromism was responsible for about nine percent of psychiatric hospital admissions. Today, it is far less common. Patients and doctors alike should

be aware of the possibility of chronic over-ingestion of beverages containing BVO (including Mountain Dew™, Fresca™, and Orange and Strawberry Kiwi Gatorade™) in patients with recent onset of the symptoms mentioned above. Product formulations change from time to time and vary in different markets—reading labels is advised. The detoxification of BVO can take several weeks and may require medical attention.

Food Additives in Clinical Practice

Clinically, some people are more reactive to food additives than others. Factors that can make some people more susceptible to toxins' effects include low blood sugar, poor nutritional status, impaired ability to detoxify chemicals, and the presence of other toxins. People with puzzling symptoms (including difficulty losing weight, mood changes, rashes, fatigue, insomnia, swelling, headaches, and restless leg syndrome) for which they can't find a solution may want to do a trial of avoiding food additives.

Science Meets Real Life

Food additives are studied in isolation, even though in real life they are nearly always ingested in combination with other food additives, which can cause health risks that do not occur in studies of single food additives. Also, the chronic health effects from ingestion of food additives may likely be understood only after decades of ingestion by consumers, similar to cigarette smoking's health risks being apparent after smoking for decades.

Limiting Exposure to Food Additives

The use of food additives to deter food-related illnesses and to extend the shelf life of foods is here to stay. Concerns about ingesting chemicals added to foods aren't going anywhere soon. Because most adverse health effects from food additives are dose-related, eating less processed food is advised. Exposure to food additives can be minimized by eating fresh (unpreserved) meats, fresh produce, organic foods, and foods that don't have ingredient labels. Cooking at home more often, supporting local organic farmers, and growing your own food can also decrease exposure to chemical cuisine. Doctors trained in nutritional medicine can help support health naturally. Learn to read and scrutinize food labels. The word "natural" on food labels does not necessarily mean absence of food additives, as additives may be isolated from natural substances. The word "fortified" on a food label likely indicates that nutrients were destroyed or depleted during processing. Duplicating nature's wisdom by adding nutrients back to denatured food is impossible. One online guide to reading food labels is: <http://www.healthyeatingadvisor.com/food-labels.html>

Making Healthy Decisions

Health doesn't happen "later," but with small choices that you make every day, including what you eat and drink. The less a food resembles its original form, the less healthy it is likely to be (e.g., high fructose corn syrup vs. an ear of corn). The tenet, "Eat food that can rot and eat it before it rots" is basic to natural health. While the jury on food additives is still out, treat yourself with the same cautionary principle often reserved for fetuses, infants, and pregnant women: avoid or limit eating foods that contain chemical additives.