

## **Preservatives, Additives, and Other Problem Ingredients**

Consumers have been concerned about additives to their foods for more than one hundred years as evidenced by written literature.<sup>1</sup> Processed foods today contain many chemicals, that are added to preserve food (extend shelf life and prevent spoilage), add color, enhance flavor and to kill insects, fungi, or bacteria. Chemicals in foods fall into several categories: preservatives, pesticides, growth hormones, antibiotics, artificial sugar, and other additives (like coloring). The United States Food and Drug Administration (F.D.A.) has allowed a wide variety of food additives to enter our food supply. Other countries have stricter rules governing the additives permitted in their food supply. There are several U.S. consumer organizations questioning the safety and long-term health effects of the chemicals we use in our foods. Many health practitioners, nutritionists, naturalists, and other health-minded consumers avoid preservatives, additives and other chemical additives.

On a topic that itself could fill a whole book, I will hit the high points on some of the chemicals added to foods. A good rule of thumb is that if you don't know what an ingredient is, or how to pronounce its name, it is more than likely a chemical food additive. A wealth of information is available on the World Wide Web on this topic and the specific listings that follow.

**Antibiotics** - Low concentrations of antibiotics have been added to animal feed for more than forty years as a vehicle to promote animal growth and to prevent and treat disease in farm animals. Long-term, low-dose use of antibiotics in farm animals lends itself to the development of antibiotic resistant bacteria in said animals.<sup>2</sup> What consumers need to understand is that the antibiotic resistant bacteria from these farm animals can enter the human intestine when we eat this food. The use of antibiotics in farm animals has another impact on the food chain. Manure containing these antibiotics, when used to fertilize the soil where plants are growing can then contaminate the crops grown.<sup>3</sup> Consumers eating the crops which have absorbed the antibiotics from the soil, get yet another dose of drugs. None of these results are positive for individual consumers, and the primary reason for the use of antibiotics in feeds has to do with increasing profits.

**Artificial Colors** - Over fifty years ago, food coloring in processed foods was done naturally by adding beets or beet juice to produce a red or pink color, turmeric to add yellow, blueberries to provide a blue color, and so on. You can still color your homemade foods this way or with natural food coloring supplies sold in health food

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<sup>1</sup> Harvey Washington Wiley, M.D., Ph.D., Foods and Their Adulteration: Origin, Manufacture, and Composition of Food Products; Infants' and Invalids' Foods; Detection of Common Adulterations (Philadelphia: P. Blakiston's Son & Co., 1917).

<sup>2</sup> American Society for Microbiology Web site: June 19, 2002 – Preservation of Antibiotics for Human Treatment Act of 2002.

<sup>3</sup> University of Minnesota study published in the July-August 2007 issue of the Journal of Environmental Quality. This study was funded by the U.S. Department of Agriculture.

stores. Commercially prepared foods however, are often colored with chemicals. Children today are bombarded with artificial coloring in drinks, crackers, candy, fruit snacks and even applesauce! The question of whether artificial colors are safe or not depends upon who you ask and more importantly who you believe. A Yale University study found that chemical colorings could lead to hyperactivity in young rats given certain conditions.<sup>4</sup> It seems to me that we could probably chart the addition and increase of chemical coloring to our foods and the increase in learning and behavioral issues in the U.S.

Chemical or artificial coloring is added to foods to help make up for the loss of color experienced in packaged foods due to shelf life, light and air exposure, moisture and temperature fluctuations. It is also added to make foods more appealing and fun. Chemical colors fall under the certified colors known as FD&C colors and must be listed on an ingredient label by name. Natural ingredients like annatto extract, beet juice, beta carotene and caramel color do not have to be listed on a food label, however, they will be labeled as “artificial color” even though they are naturally derived. This is because the FDA considers every color added to a food an artificial color even if it comes from a natural plant or animal source.

**Artificial Sugars** - Sugar substitute is the new name given to the chemical compounds that were formerly called artificial sugars or artificial sweeteners. These chemicals add no nutrition to the foods containing them, and they bring with them plenty of controversy. There are five artificial sweeteners approved by the F.D.A. for use in food and beverages: saccharin (Sweet and Low®, Sweet Twin®, Sweet 'N Low®, and Necta Sweet®), aspartame (Nutrasweet®, Equal®, and Sugar Twin®), sucralose (Splenda®), acesulfame K (acesulfame K, acesulfame potassium, Ace-K, or Sunett®) and neotame. When you think of artificial sweeteners you can think of those little pink, blue and yellow packets of sweeteners that restaurants routinely make available.

The controversy stems over whether or not these chemicals are safe for human consumption. While the issue of safety has not been on the news or media reports, there are books, web sites, and even film documentaries dedicated to educating consumers to the dangers of artificial sweeteners. A variety of consumer advocacy non-profit organizations also feel that there are serious concerns about the negative effects of these chemicals in the human body. Because of increasing consumer awareness and alarm, some food manufacturers are now using the generic name of the chemical sugar instead of the brand name. In other words, consumers recognize the names like Splenda®, Nutrasweet®, and Sweet'N Low® and have a negative association with the brand name. Most of us do not however recognize the generic name of sucralose, aspartame, or saccharin. If your food or beverage promotes low-calorie or zero calories, it is extremely likely that it contains an artificial sugar.

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<sup>4</sup> Shaywitz, Bennett A., Pediatric Neurology, Yale University School of Medicine, Neurobehavioral Toxicology, Vol. 1:41-47.

**Benzoates** - Benzoates refers to a preservative that is both tasteless and odorless. The chemical name for benzoates is Benzoic Acid. They are used to extend the shelf life of foods like sauces, margarines, jams, soft drinks, fruit juices, cider, pickles, milk-shake syrups, ketchup, baked goods, cheeses and some pharmaceutical products. Benzoates have been linked to health issues like allergies, asthma, skin reactions, hyperactivity, gastric irritation, migraine headaches, and urticaria. Other names for benzoates are: Benzoic acid, Calcium benzoate, Methylparaben, Methyl-p-hydroxy-benzoate, Potassium benzoate, Propylparaben, Propyl-p-hydroxy-benzoate, and Sodium benzoate.

**BHA** - BHA is a chemical preservative found in some meats and packaged foods in the U.S. BHA stands for butylated hydroxyanisole. It is typically used to keep fats from becoming rancid and is found in baked goods, snack foods, meats, butter, chewing gum, instant potatoes, and beer. BHA is also found in some pharmaceutical products and cosmetics.

**BHT** - BHT is a chemical preservative that is often found in the same products that use BHA. BHT is an abbreviation for butylated hydroxytoluene, which functions to prevent oxidative rancidity of fats. It serves to protect (preserve) food odor, color and flavor, and is added directly to shortening, some cereals and other foods that contain fats and oils.

**Growth Hormones** - Growth hormones are given to animals to help them become larger faster, or in the case of cows, to produce more milk. Recombinant Bovine Growth Hormone (rBGH), which is also referred to as BGH, BST, and rBST, is banned in Europe and Canada. The Recombinant Bovine Growth Hormone has been used in the U.S. since 1994. Disturbing information on growth hormones can be found on the World Wide Web, or in an excellent film documentary called "The Corporation," which features a segment on growth hormones.

**Nitrates & Nitrites** - Nitrates and nitrites are found in most red meats and fish products. They function to keep meat from turning brown, and to prevent toxic bacteria that causes food poisoning from developing. Nitrates are added to some canned foods to prevent spoilage (botulism). Because nitrates have been found to foster the development of cancer in many animals, the use of nitrates is highly restricted in other countries. Nitrates can cause reactions in children and adults, but especially in children. You can purchase meats that are free of nitrates and nitrites from the grocery store, Internet, or through local farmers.

**MSG** - MSG stands for Monosodium Glutamate, which is a chemical preservative that is more common in the U.S. food supply than many people realize. MSG is a salt of the amino acid Glutamic Acid (glutamate). Monosodium Glutamate is added to foods to "kick-up" the flavor because it is cheaper to use a chemical than real food ingredients. Foods that usually contain MSG include fried chicken, flavored snack chips, canned and instant soups, canned tuna, and fresh turkey just to get started. MSG has been known to affect many body functions like blood pressure, brain function, digestive system, endocrine system, allergic response, hearing, heart rate, hypoglycemia, lungs, nervous system, thyroid function, vision, pancreas, and the hypothalamus function.

Individuals who react to Monosodium Glutamate should watch for the following names on their food labels as these are indicators for MSG: glutamate, monosodium glutamate, monopotassium glutamate, yeast extract, hydrolyzed protein, glutamic acid, calcium caseinate, sodium caseinate, yeast food, yeast nutrient, natrium glutamate, textured protein, hydrolyzed corn gluten, autolyzed yeast, and gelatin.

It is easy to find out information about MSG. There are several organizations dedicated to getting out truthful and helpful information to consumers who have issues with Monosodium Glutamate. More information is readily available on the Internet.

**Parabens** - Parabens are esters of p-hydroxybenzoic acid, which is a chemical derived from petroleum processing. Parabens are found in meats, pickled products, jams, beverages, cheeses, and margarines.

**Pesticides** – Pesticides are any mixture or substance that is used to prevent, destroy, repel or reduce any insects, fungi, microorganisms such as bacteria and viruses, unwanted weeds or other plants, and mice or other animals. In the U.S. pesticides used on food include: insecticides for insects, rodenticides for rodents, herbicides for weed control, fungicides to control mold and fungus, and antimicrobials to control bacteria. The danger of pesticides for infants and young children is higher than that for adults for several reasons.

Our United States Environmental Protection Agency has this to say about the impact of pesticides on young children:<sup>5</sup>

“Pesticides may harm a developing child by blocking the absorption of important food nutrients necessary for normal healthy growth. Another way pesticides may cause harm is if a child’s excretory system is not fully developed, the body may not fully remove pesticides. Also, there are “critical periods” in human development when exposure to a toxin can permanently alter the way an individual’s biological system operates.”

The *Environmental Working Group*, a non-profit organization whose mission is to use the power of public information to protect public health and the environment, listed this statement on their website about pesticides on your food:<sup>6</sup>

“There is growing consensus in the scientific community that small doses of pesticides and other chemicals can adversely affect people, especially during vulnerable periods of fetal development and childhood when exposures can have long lasting effects. Because the

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<sup>5</sup> From: [www.epa.gov/pesticides/food/pest.htm](http://www.epa.gov/pesticides/food/pest.htm)

<sup>6</sup> From: [www.foodnews.org](http://www.foodnews.org) a Project of the Environmental Working Group.

toxic effects of pesticides are worrisome, not well understood, or in some cases completely unstudied, shoppers are wise to minimize exposure to pesticides whenever possible.”

**Sulphites** - Sulphites refer to sulphur dioxide and other sulphite compounds, which are chemical compounds used to preserve some aspect of the food. They can be found in soups, canned vegetables, biscuits, fruit juices, jams, sauces, dried fruits, French fries, instant coffee, vinegar, coconut syrup, lemon juice, wine and other foods. In foods, sulphites can cause a bleaching effect or prevent browning in dried fruits and vegetables, fruit juices and some alcoholic drinks. Sulphites have been known to cause asthma and hyperactivity and other health issues. Sulphites can be listed as follows: Calcium hydrogen sulphite, Calcium sulphite, Potassium bisulphite, Potassium sulphite, Sodium bisulphate, Sodium metabisulphite, Sodium Sulphite, and Sulphur dioxide.

**TBHQ** - TBHQ is found in many commercially processed foods, including foods served at restaurants; however finding straight-forward factual information about TBHQ is not as easy. TBHQ stands for Tertiary ButylHydroQuinone, and it functions in foods as an antioxidant, which means it is a chemical preservative. One Internet item stated that death has been reported from ingestion of just 5 grams. Nausea, vomiting, tinitis, clouding of the eye lens, delirium and collapse have been associated with just one gram of TBHQ.

**Tocopherol** - Tocopherol, or vitamin E is often added to foods as a preservative. It merits mention here because the Tocopherols (vitamin E) used in preserving foods often comes from soybean oil. Therefore individuals who are highly IgE allergic to soy would do well to understand this preservative and where it is used. Tocopherols or vitamin E can come from many other food sources other than soy including palm oil, sunflower oil, corn, olive oil, tree nuts, wheat germ, seabuckthorn berries, and kiwi fruit.