



How safe is the food we eat? - May 2010

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If, like many people today, you buy convenient, packaged or processed foods, you maybe worried about how safe food additives really are.

Over the years, the safety of many food additives, from food dyes to trans fats, has come into question. A scare over a food additive may linger in our minds long after researchers find that there's actually no cause for alarm. It may take many years to find out the truth. There are more than 3000 different food additives that are purposefully added to our food supply. Some of them are known to cause health problems!

Even if all of the food additives used in our foods were safe individually, rarely does any food have only one additive in it. Testing for additive safety has been done for individual additives, not for combinations of additives. Additives that are safe individually may be harmful in certain combinations.

What the research shows

In 2007, a British study published in The Lancet concluded that consuming artificial colouring and preservatives in food may increase hyperactivity in kids. Scientists have been studying the link between food additives and hyperactivity in children for more than 30 years, with mixed results. But the results of the 2007 study compelled the European Food Standards Agency to urge companies to voluntarily remove artificial colouring from food products. The FDA, however, hasn't changed its opinion on the use of FDA-approved artificial food colours, which it considers safe when used properly.

Artificial colouring

Artificial food colours are chemical dyes used to colour food and drinks, found in many types of processed foods, beverages and condiments. Supermarkets add colour to their food to make it look attractive, as if it has just been produced. For example adding preservatives and anti-oxidants to meat to give it a longer shelf life.

Food additives

Food additives have been used for centuries; for example, preserving food by pickling (with vinegar), salting, as with bacon and dried tomatoes, or using sulphur dioxide as in some wines. Food additives are substances added to food to preserve flavour or improve its taste and appearance, many more additives have been introduced, of both natural and artificial origin. Some food additives are essential, others are beneficial to us but of course there are many, which we can do without, especially those that may cause a food reaction.

E numbers

The E- stands for EC (European Community) and these numbers have been tested for safety and been passed for use in the EC. Numbers without an E in front are allowed in the UK but may have not been passed for use in all EC countries.

To regulate these additives, and inform consumers, each additive is assigned a unique number. Initially these were the "E numbers" used in Europe for all approved additives. This numbering scheme has now been adopted and extended to internationally identify all additives, regardless of whether they are approved for use.

For example, acetic acid is written as E260 on products sold in Europe, but is simply known as additive 260 in some countries. Additive 103, alkanet, is not approved for use in Europe so does not have an E number, although it is approved for use in Australia and New Zealand.

Despite their safety pass by the EC a few people suffer from allergic reactions to some of them, whether natural or synthetic. The E numbers are helpful to these people because they can easily see whether the food contains an additive to which they are allergic.

Food additives can be divided into several groups:

- Acids - Food acids are added to make flavours "sharper", and also act as preservatives and antioxidants. Common food acids include vinegar, citric acid, tartaric acid, malic acid, fumaric acid, and lactic acid.
- Acidity regulators - Acidity regulators are used to change or otherwise control the acidity and alkalinity of foods.
- Anticaking agents - Anticaking agents keep powders such as milk powder flowing freely.
- Antifoaming agents - Antifoaming agents reduce or prevent foaming in foods.
- Antioxidants - Antioxidants such as vitamin C act as preservatives by inhibiting the effects of oxygen on food, and are generally beneficial to health
- Bulking agents - Bulking agents such as starch are additives that increase the bulk of a food without affecting its nutritional value.
- Food colouring - Colourings are added to food to replace colours lost during preparation, or to make food look more attractive.
- Colour retention - In contrast to colourings, colour retention agents are used to preserve a food's existing colour.
- Emulsifiers - Emulsifiers allow water and oils to remain mixed together in an emulsion, as in mayonnaise, ice cream, and homogenized milk.

- Flavours - Flavours are additives that give food a particular taste or smell, and may be derived from natural ingredients or created artificially.
- Flavour enhancers - Flavour enhancers enhance a food's existing flavours.
- Flour treatment agents - Flour treatment agents are added to flour to improve its colour or its use in baking.
- Humectants - Humectants prevent foods from drying out.
- Preservatives - Preservatives prevent or inhibit spoilage of food due to fungi, bacteria and other microorganisms.
- Propellants - Propellants are pressurized gases used to expel food from its container.
- Stabilizers - Stabilizers, thickeners and gelling agents, like agar or pectin (used in jam for example) give foods a firmer texture. While they are not true emulsifiers, they help to stabilize emulsions.
- Sweeteners - Sweeteners are added to foods for flavouring. Sweeteners other than sugar are added to keep the food energy (calories) low, or because they have beneficial effects for diabetes mellitus and tooth decay.
- Thickeners - Thickeners are substances which, when added to the mixture, increase its viscosity without substantially modifying its other properties

To help you to figure out what's safe, here is some useful information on some of the most controversial food additives.

- **Tartrazine** - Colour Yellow and Orange - linked to hyperactivity and in some studies has been shown to have significant impact on asthma.
- **Aspartame** - Aspartame is an artificial sweetener known by various brand names, including Equal and NutraSweet - commonly used additive for sweetening diet soft drinks. Introduced in 1981 and it has been suspected of causing cancer. There have been many studies which link aspartame to causing seizures, headaches, mood disturbances, and reduced mental performance
- **High fructose corn syrup** - a sweetener made from corn. It's sweeter and cheaper than sucrose, which is the form of sugar made from sugar cane. It is a common additive in many kinds of processed foods, not just sweets. Most non-diet soft drinks are sweetened with high fructose corn syrup. Some experts have proposed that it may when metabolize raises the risk of obesity and type 2 diabetes more than sugar made from sugar cane.
- **Monosodium glutamate (MSG)** - It is a form of the naturally occurring chemical glutamate. Glutamate doesn't have a flavour of its own, but it enhances other flavours and imparts a savory taste. Tomatoes, soybeans, and seaweed are examples of foods that have a lot of glutamate naturally. MSG is an additive used in many foods. Many people claim to have bad reactions when they eat food seasoned with MSG. In the late 1960s, people started talking about "Chinese restaurant syndrome," alleging that food prepared with MSG at Chinese restaurants made them sick. **How you find it on the label**, some food labels mention added MSG, but on some labels they will mention other ingredients that may contain MSG such as "hydrolyzed soy protein" and "autolyzed yeast."

- **Sodium benzoate** is a food additive used as a preservative, found in a variety of processed food products and drinks. It's suspected that sodium benzoate, in addition to artificial food colour, may increase hyperactivity in some children. Sodium benzoate in soft drinks may also react with added vitamin C to make benzene, a cancer-causing substance. The 2007 Lancet study that linked additives with increased hyperactivity included the preservative sodium benzoate. Sodium benzoate is listed among the ingredients on a product label.
- **Trans fat** - are created when manufacturers add hydrogen to vegetable oil. Trans fats are food additives in the sense that they're mainly added to the food supply by manufacturing processes, although small amounts of trans fats are present naturally in animal fat. Found mostly in baked goods, margarine and deep fried foods. Vegetable shortening may also be made with partially hydrogenated oil. Why it's controversial? Trans fats are believed to increase the risk of heart disease and type 2 diabetes. Most scientists now agree that eating trans fats can be very harmful to health. Trans fats have been found to lower people's HDL (good) cholesterol and raise LDL (bad) cholesterol. Product labels are now required to list the amount of trans fat in a serving. Partially hydrogenated oil may also be listed as an ingredient. But many fried foods and baked goods that are laden with trans fats are served in restaurants, and they don't come with nutrition labels. To avoid trans fats, it's best to limit your overall daily saturated fat intake.

E-Number	Name	Category	Side Effects
E100	Curcumin	Colour - Yellow and Orange	Safe
E101	Riboflavin (Vitamin B2)	Colour - Yellow and Orange	Safe
E102	Tartrazine	Colour - Yellow and Orange	Banned Norway/Austria May increase hyperactivity in affected children. Asthmatics sometimes react badly. Take care if you are sensitive to Aspirin.
E103	alkanet, alkannin	Colour - Yellow and Orange	Banned in some parts of the western world! May increase hyperactivity in affected children. Asthmatics sometimes react badly. Take care if you are sensitive to Aspirin.
E104	Quinoline Yellow	Colour - Yellow and Orange	May increase hyperactivity in affected children. Banned USA, Norway
E110	Sunset Yellow FCF / Orange Yellow S	Colour - Yellow and Orange	May increase hyperactivity in affected children. Take care if you are sensitive to Aspirin. Banned in Norway
E120	Cochineal / Carminic Acid	Colour - Red	Same as E104
E122	Carmoisine / Azorubine	Colour - Red	May increase hyperactivity in affected children. Asthmatics sometimes react badly. Take care if you are sensitive to Aspirin.
E123	Amaranth	Colour - Red	Very Dangerous May increase hyperactivity in affected children. Take care if you are sensitive to Aspirin.
E124	Ponceau 4R / Cochineal Red A	Colour - Red	May increase hyperactivity in affected children. Asthmatics sometimes react badly. Take care if you are sensitive to Aspirin. Banned USA & Norway
E127	Erythrosine BS	Colour - Red	Same as E104
E131	Patent Blue V	Colour - Blue	May increase hyperactivity in affected children. Asthmatics sometimes react badly. Take care if you are sensitive to

			Aspirin. Be cautious if you suffer from allergies or intolerances.
E132	Indigo Carmine / Idigotine	Colour - Blue	Same as E131
E140	Chlorophyll	Colour - Green	Safe
E141	Copper Complex of Chlorophyll	Colour - Green	Avoid if possible, unsure
142	Green S / Acid Brilliant Green BS	Colour - Green	Linked to Cancer Banned in western Europe
E150	Caramel	Colour - Brown and Black	Avoid if possible, unsure
151	Black PN / Brilliant Black BN	Colour - Brown and Black	Same as E104
E153	Carbon Black / Vegetable Carbon (Charcoal)	Colour - Brown and Black	May increase hyperactivity in affected children. Be cautious if you suffer from allergies or intolerances.
E155	Brown HT (chocolate)	Brown	Can produce reactions in Asthmatic - banned in Europe
	PRESERVATIVES		
E200-23	Sorbic Acid	Preservative - Sorbic Acid and its salts	Headaches Intestine Upset
E210 -E219	Benzoic acids	Preservative benzoic acids/salts	Headaches Intestine Upset May increase hyperactivity in affected children. Asthmatics sometimes react badly. Be cautious if you suffer from allergies or intolerances.
E220-227	Sulphur Dioxide	Preservative - Sulphur Dioxide and its salts	Headaches Intestine Upset Skin Disorders Destroys Vitamin B12

		Often added to milk products (cheese) and meat products.	
E230-262	Biphenyl / Diphenyl	Preservative - Biphenyl and its derivatives	Headaches Intestine Upset Skin disorders