Critical Ingredients

Do we really need additives in our food?

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If you find spoiled food unappetizing, prefer delicious-looking, tasty meals and demand the most nutritional bang for your buck, then you've just answered the question asked above. Without additives to preserve, enhance and fortify the foods we eat, people wouldn't enjoy a steady supply of safe, fresh, nutrient-rich dishes that appeal to all five senses.

The findings are sound. Studies show that some additives---any substance used in the production, processing, treatment, packaging, transportation or storage of food---have potential health risks. "People can be sensitive or intolerant to any food additive," says registered dietitian Constance Brown-Riggs.

Currently, the Food and Drug Administration (FDA) maintains a list of over 3,000 ingredients in its "Everything Added to Food in the United States" database. There you'll find listed many of the common ingredients used for cooking: salt, sugar, baking soda, spices, vanilla, yeast and colors.

These ingredients are classified as either direct additives---those added to food for a specific purpose---or indirect additives, those that become part of the food in trace amounts due to packaging, storage or other handling. The FDA regulates both types of additives to ensure that foods are safe to eat and accurately labeled.

As previously mentioned, some additives serve a specific function. Preservatives, for example, slow the process of spoilage caused by mold, air, bacteria, fungi or yeast. These additives help maintain the quality of the food and control contamination that can cause any number of nasty foodborne illnesses.

Antioxidants, for example, are considered a type of preservative. They stop fats and oils and the foods containing them from going rancid or developing off-flavor, and they prevent cut fruits from turning that shade of unappealing brown when exposed to air.

Today, there are four categories of additives. Under the 1958 Food Additives Amendment, Congress created the categories due to an increase of chemical additives and mounting evidence they posed potential health risks.

Those four categories are divided as follows: food additives; ingredients generally recognized as safe (GRAS); prior-sanctioned substances; and food coloring additives.

Of the four, two are exempted from the FDA's testing and approval process: GRAS ingredients and prior-sanctioned substances.

GRAS substances include the universally used usual suspects, additives such as spices, herbs, salt and sugar. The reason these ingredients are generally recognized as safe is because they all have a proven safety record based on their pre-1958 usage history. In addition, their safety is backed by previously published scientific evidence.

Like GRAS substances, those that received a prior-sanctioned classification are assumed to be safe in a specific food or context because they were used that way before 1958. Examples include sodium and potassium nitrate, which were approved before 1958 for exclusive use as meat preservatives. What that means is that they can't be used in other foods, such as vegetables for example. "Sodium ni--trite is used in processed meats, such as frankfurters and bologna, to prevent botulism [a deadly bacteria], so its use is necessary to keep these processed foods safe," Brown-Riggs explains.

But nitrites are also suspected of causing headaches, nausea, vomiting and dizziness in some people. Sodium nitrite is on a list of additives to avoid—the list is circulated by the Center for Science in the Public Interest (CSPI), a watchdog consumer group.

Certainly, not all additives cause these problems. Many are actually vitamins, minerals and fiber. Manufacturers use these additives to fortify foods and make up for dietary deficiencies and nutrients lost during food processing.

Some additives, such as spices and natural or artificial flavors and sweeteners, improve or enhance taste. Artificial colors are meant to improve food's appearance; emulsifiers, stabilizers and thickeners are added for texture and consistency; and leavening agents allow baked goods to rise during cooking.

But before there's any bread or cake baking, the FDA tests and approves the additives used in any cooking ingredients. Still, just because an additive lands on the FDA's consumption approval list doesn't mean it's 100 percent safe for everyone. Science has limitations, and the agency admits that it "can never be absolutely certain of the absence of any risk from the use of any substance."

What's also unappetizing is there's always the possibility that the FDA can make a mistake. It might overlook a dangerous substance or be unduly influenced by powerful and wealthy food manufacturing corporations, which is why advocates created the CSPI.

Along with its mission to educate the public about food safety, nutrition and health, CSPI also promotes government policies consistent with scientific evidence on health and environmental issues. This group can pressure the FDA to require further studies to determine the safety of

additives; it can also suggest prohibiting a substance's use; and it can request added warnings.

Remember saccharin? In 1972 and 1977, the FDA proposed banning the artificial sweetener because it was concerned the additive might be linked to bladder cancer. The agency once required saccharin to have a warning label saying the sweetener was a potential health hazard. But in 2001, it lifted the warning because studies suggested that saccharin did not cause cancer in humans.

Since then, other artificial sweeteners on the GRAS list, such as aspartame, have generated speculation. But the FDA considers aspartame---found in NutraSweet and Equal---one of the most tested and studied food additives the agency has ever approved.

To date, only people with the rare genetic disorder phenylketonuria, or PKU, should definitely avoid aspartame, according to the FDA. The agency requires any food containing aspartame to clearly state on its label that the product contains phenylalanine, which can't be metabolized by people with PKU.

In addition, the FDA also looked hard at additives known to cause allergies, such as sulfites and MSG (monosodium glutamate).

Sodium sulfite is a preservative used in winemaking and other processed foods. According to the FDA, one in 100 people are sensitive to sulfites. The majority of them are asthma sufferers. Sulfites are associated with wheezing, diarrhea, stomachache, hives and swelling, and the additive can also cause headaches, breathing problems and rashes in some people.

"Sulfites actually help prevent color changes and are used primarily in dried fruits and vegetables," Brown-Riggs says. "But this additive and FD&C Yellow No. 5 [associated with hives, itching and nasal congestion] and aspartame---all generally recognized as safe---might cause problems for susceptible consumers."

Another common and possibly problematic additive is MSG, a flavor enhancer. Many people, especially children, are sensitive to the additive, which can cause some to experience headaches, nausea, wheezing, changes in heart rate and difficulty breathing. Because MSG can precipitate anaphylactic shock—an acute and life-threatening allergic reaction---individuals who are sensitive to this additive need to know the different names used for the ingredient, such as caseinate, yeast extract and hydrolyzed protein.

Like MSG, high fructose corn syrup (HFCS) is also a common and controversial additive. HFCS is a refined sugar found in numerous processed foods. The sweetener increases LDL cholesterol levels and can lead to diabetes and other health problems.

Then there's caffeine. This stimulant is found naturally in coffee, cocoa and some teas. But caffeine becomes an additive when companies include it in beverages, such as soft drinks and energy drinks.

Although caffeine does have its benefits, excessive amounts of the stimulant can cause heart problems, insomnia and birth defects---it can also leach calcium from bones (leading to osteoporosis).

What’s more, caffeine is known to cause withdrawal symptoms such as headaches, irritability, lack of energy and sleeplessness.

Apart from substances that are directly added into foods, there’s one unwanted indirect additive that sometimes makes its way into the food supply in trace amounts: pesticides. Farmers use these chemicals to keep crops healthy and protect them from disease or pests.

When foods are harvested and sold, the amount of pesticides may be washed off or otherwise reduced. But some residue can remain in fresh produce and processed foods.

How can we avoid pesticides and other bad-for-you additives? “It is very difficult for the average person to avoid food additives,” Brown-Riggs admits. “The only alternative is to completely avoid processed foods.”

But you can certainly cut down on additives. For starters, Brown-Riggs encourages her patients to eat fresh whole fruits and vegetables.

As for meat, Brown-Riggs advises people avoid the processed stuff, such as burgers made from compressed meat byproducts of mysterious origins. Why? Because you never know what you’re eating.
