

# Direct and indirect food additives: What should we know?

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Food additives have been around for centuries. The U.S. Food and Drug Administration (FDA) has approved more than 10,000 additives for food processing. These include colorings, flavorings, and preservatives which help taste, texture, and shelf life. Many of these additives were made to keep American food safe or make the products more enjoyable for consumers. Understanding why food additives are used and how food additives impact health can help families make informed decisions about their food choices.

## Direct Food Additives

When food processors use additives to process and produce food and drinks, we call those direct food additives. These additives are mostly artificial colors, sweeteners, preservatives, and flavor enhancers. Often, these additives are safe in the small amounts that are in the product.

Many snacks and drinks have artificial food colors to make them bright and appealing. These artificial food colors or food dyes were made in a lab. They are used most often in candies, fruit-flavored snacks, breakfast cereals, and powdered drink mixes. Some studies suggest that taking artificial food colors out of children's diets may result in better behavior in children with Attention Deficit Hyperactivity Disorder. But we need more research to grasp how



these additives affect behavior. Because of this worry, there are more products for kids that use natural colors. These colors are made from fruits and vegetables. Studies are needed to compare differences between artificial and naturally colored foods.

Some other common types of additives are nitrates and nitrites. These are often used as preservatives in processed meats like hot dogs, deli meats, bacon, sausage, and canned meats. It's important to note that nitrates and nitrites are naturally in vegetables, too. But these naturally occurring versions found in fresh produce have not been linked with any health risks. A diet high in processed meats has been linked to a greater risk of cancer. To lower this risk and support overall health, cut back on the amount of processed meat you eat throughout the week.



Some additives add to the flavor of food and drink. This includes monosodium glutamate (MSG). MSG is used to enhance a savory or umami flavor. It's often added to soups, salty snacks, and soy sauce. One more example is the artificial sweetener, aspartame. Aspartame sweetens food and drink without adding calories. It is often found in sugar-free products. The FDA accepts these flavor enhancers as safe [Generally Recognized as Safe (GRAS)].

Researchers continue to study the possible effects of food additives on health. The American Academy of Pediatrics suggests limiting children's exposure to some of these additives. That's because they might be more affected compared to adults because of their smaller body size. There is growing interest in how these additives might affect growth, hormones, and risk of obesity.

## Indirect Food Additives

Some additives are not directly added to food. Indirect food additives are substances that leach into food in small amounts as the food comes in contact with materials during processing, packaging, or storing. They are not added to the food for color, flavor, or any specific function. Examples of indirect food additives are adhesives, coatings, production

aids, paper, and paperboard parts. These can be found in metal cans, food wrappers, plastic bags, plastic storage containers, cookware, and kitchen utensils. The FDA regulates indirect food additives to ensure safety. Manufacturers must get approval before using them. Additives often found in these products are bisphenols, like bisphenol A (BPA), per- and polyfluoroalkyl substances, and phthalates.

Bisphenols grew in use in the 1960s. Producers realized BPA was useful for making sturdy plastic products and to coat metal cans to stop rust or corrosion. Within the last few years, BPA has been found to cause disruption in hormones. This can impact the growth and development of children. The FDA has banned the use of BPA in baby bottles and sippy cups for young children. Now by choice, many manufacturers make plastic containers and metal cans without BPA and label them "BPA-free."

Per- and polyfluoroalkyl substances, PFAS, are a group of chemicals used to make certain products resistant to grease, water, stickiness, and stains. PFAS are indirect food additives and have been dubbed "forever chemicals." Forever chemicals break down very slowly and build up over time. They stay in soil and water for a very long time and build up in body tissue as well.





These “forever chemicals” are used in food storage products. Examples are food wrappers, take-out containers, pizza boxes, microwave popcorn bags, paper plates, bakery bags, and disposable trays. Some nonstick cookware is made using PFAS. Since the chemicals are resistant to water, grease, heat, and stains, “forever chemicals” can also be found in clothing, carpet, cosmetics, and toilet paper.

Phthalates are often found in plastic wrap and other types of plastic used throughout food processing. Phthalates are also used in personal products like shampoos and lotions to help preserve scent. Exposure to phthalates might be linked to a greater risk for childhood obesity because of the metabolic effects. Phthalate exposure might also be linked to harmful effects on the heart and with growth and development. More research is needed on all types of food additives.

To lower exposure to indirect food additives:

- Reach for cans or plastics labeled BPA-free. Find the plastic type by looking at the recycling code on the bottom of products. Plastics labeled with a 3 have phthalates and those with 7 have bisphenols.
- Try using storage containers made of glass or stainless steel when possible.



- Heat can release BPA from plastics. So, hand wash plastic containers instead of using the dishwasher. Avoid microwaving food or beverages in plastic containers, bowls, and plates.
- Get rid of any nonstick cookware that is cracked or chipped. Choose stainless steel or cast-iron cookware instead.
- Make your own microwave popcorn. Try buying corn kernels and pop them on the stove or in a microwavable glass popcorn popper.
- Cut back on fast food, takeout, and pizza delivery since most of the wrapping has PFAS.
- If you live in a community with water contamination, use a water filter that is certified to remove PFAS. Also check with your local water company to find out if filtration has lowered the PFAS levels in your community.

Research is ongoing to find specific health effects that exposure to these direct and indirect additives may have. Focusing on nutrient-dense foods, like lean meat, fruits and vegetables, whole grains, and dairy can support growth and development of children as well as the health and well-being of your family. Further, choosing foods that have less exposure to indirect additives may be good for your health overtime.

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