

Are Artificial Food Additives Harmful to Your Health?

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Artificial food additives can be controversial, but they aren't as scary as they may sound.

As their name suggests, artificial food additives are synthetic ingredients added to food to enhance its color or flavor, extend its shelf life, or improve it in some way.

The Food and Drug Administration (FDA) ensures that all food additives on the market are safe for use. Still, you may wonder whether you're better off limiting your intake of these ingredients.

This article explains all you need to know about artificial food additives, including their safety, uses, and potential health risks, as well as helpful tips to reduce your intake if that's important to you.

What are artificial food additives?

Artificial food additives are synthetic ingredients, meaning they are not naturally derived, added to food to enhance its appearance, texture, taste, and freshness ([1Trusted Source](#)).

Types of food additives

The FDA uses the following two categories of food additives ([1Trusted Source](#)):

- **Direct.** These are added for a specific purpose, such as texture, leavening, binding, or color. For example, [aspartame](#) is a popular artificial sweetener used to improve the taste of sodas and low calorie or sugar-free foods.
- **Indirect.** These may become part of food in trace amounts due to packaging, storage, or other handling practices. In this case, manufacturers must ensure all packaging materials are safe for use.

For the most part, direct food additives are the focus of concern for consumers. These can be further categorized into the following two categories ([1Trusted Source](#)):

- **Natural.** Natural additives are derived from a natural food source. For example, red beets are used to produce natural red food coloring, while soybeans and corn are used to make [lecithin](#) — a type of emulsifier — to bind ingredients.
- **Artificial.** Artificial additives are not derived from nature. For example, most vanilla extracts are made from vanillin, which is produced in a lab.

Both natural and artificial food additives must meet strict regulatory and safety guidelines to be approved for use in food ([1Trusted Source](#)).

Types of food they're commonly found in

Artificial food additives are found in many popular foods, such as yogurts, breads, salad dressings, sodas, baked goods, chips, protein bars, and other [processed foods](#).

In fact, many foods on grocery store shelves contain either natural or artificial food additives in some form. Some foods may contain emulsifiers, while others may contain sweeteners or food colorings ([1Trusted Source](#), [2Trusted Source](#)).

Unless a food is completely unprocessed, such as an apple, be sure to [read the label](#) if you're concerned about any food additives.

Why they're added to foods

Many food products contain emulsifiers, stabilizers, or thickeners to improve the quality of the product. These additives help bind ingredients, such as oil and water, to produce a more uniform texture and appearance ([3Trusted Source](#)).

A food may also have artificial additives to improve its nutritional composition. For example, synthetic ascorbic acid (vitamin C) and [folic acid](#) (a synthetic form of folate) are commonly added to foods because they're more stable than their natural counterparts ([1Trusted Source](#), [3Trusted Source](#), [4Trusted Source](#)).

Finally, food manufacturers may choose to use artificial food additives, as they are usually lower in cost than natural food additives ([1Trusted Source](#)).

SUMMARY

Artificial food additives are synthetic ingredients added to food to enhance its appearance, texture, taste, shelf life, freshness, and nutrition. They're found in many foods, such as breads, baked goods, yogurts, salad dressings, chips, and beverages.

Potential effects of eating artificial ingredients

Despite the strict safety protocols that artificial food additives undergo, consumers may worry about these ingredients' long-term health effects.

Gut health

To date, there's little evidence that artificial food additives approved for use by the FDA harm your gut health or digestion ([5Trusted Source](#)).

That said, the increase in gut disorders, such as irritable bowel syndrome (IBS), Crohn's disease, and gut dysbiosis, along with the rise of highly processed foods, has led many to wonder whether there is a [connection between gut health and artificial food additives](#) ([6Trusted Source](#)).

Some preliminary research in mice suggests that the consumption of artificial sweeteners may lower gut bacteria diversity and theoretically lead to digestive issues — though no research directly ties artificial food additives to poor gut health in humans ([6Trusted Source](#), [7](#), [8Trusted Source](#)).

Keep in mind that the human microbiome greatly differs from animals, which may lead to differences in how artificial sweeteners are metabolized.

As well, most of these studies are not well controlled and use significantly higher doses than those the average human would consume. Therefore, more research is needed.

Also, some mice studies have shown that polysorbate 80 (an emulsifier) and titanium dioxide (a food coloring) may lead to alterations in [gut microbiome](#) diversity. Particularly, the increase in sulfate-reducing bacteria

may exacerbate IBS symptoms ([6Trusted Source](#), [8Trusted Source](#), [9Trusted Source](#), [10Trusted Source](#)).

However, it's unknown if these effects apply to humans, who have different digestive systems than mice. Long-term human studies are needed to fully understand artificial food additives' effects on human health ([6Trusted Source](#), [7](#), [11Trusted Source](#)).

If you believe you may be sensitive to certain food additives, it's best to work with a healthcare professional who specializes in digestive disorders.

Weight gain

Artificial sweeteners are popular food additives, but while some use them as a solution to a high sugar diet, others believe they may do more harm than good.

Also known as nonnutritive sweeteners, [artificial sweeteners](#) contain zero calories but add sweetness to food and beverages. Popular varieties include aspartame, acesulfame K, saccharin, and sucralose.

Despite containing zero calories, it's thought that artificial sweeteners may contribute to weight gain by altering the gut microbiome, leading to changes in metabolism and hormone regulation ([12Trusted Source](#), [13Trusted Source](#)).

However, most artificial sweeteners do not reach the lower intestine where the gut microbiome exists. Therefore, it's unlikely that artificial sweeteners would change the gut microbiome, and no studies have shown that artificial sweeteners cause weight gain ([12Trusted Source](#), [13Trusted Source](#)).

In fact, one study found no difference in gut bacteria colonies when human users consumed a normal amount (within the acceptable daily intake recommendations) of artificial sweeteners ([13Trusted Source](#)).

Additionally, some theorize that artificial sweeteners may not signal the release of hunger-regulating hormones in the same manner as sugar, leading to increased hunger and food intake ([14Trusted Source](#)).

That said, associations are not the same as cause and effect. In many cases, other confounding factors (e.g., total dietary intake, history of dieting, and physical activity) can also influence weight gain or weight loss.

Additionally, results can vary depending on the study design and which external factors are controlled. Because of these variations, there has been a great deal of conflicting research.

For example, a number of cross-sectional human studies show a dose-dependent association between artificial sweetener intake and body mass index (BMI), yet numerous clinical trials and meta-analyses have shown artificial sweeteners may aid weight loss ([15Trusted Source](#), [16Trusted Source](#), [17Trusted Source](#), [18Trusted Source](#), [19Trusted Source](#), [20Trusted Source](#)).

Additionally, a recent meta-analysis in the British Medical Journal showed no relationship between artificial sweetener consumption and [BMI](#). The authors concluded that higher quality, long-term studies are needed ([21Trusted Source](#)).

All in all, continued research is warranted.

Cancer

Some artificial food additives may be associated with a higher risk of certain types of cancer.

In particular, a diet high in [nitrites and nitrates](#), which are commonly found in processed meats, has been linked to an increased risk of colorectal cancer ([22Trusted Source](#)).

In 2015, the World Health Organization classified processed meat as carcinogenic to humans due to increased research showing a dose-dependent relationship between processed meat consumption and colorectal cancer risk ([22Trusted Source](#)).

Bisphenol A (BPA), an additive commonly found in food packaging, has also been linked to an increased risk of cancer and endocrine disruption. Though now banned in baby products, it can still be found in some water bottles, cans, and other packaging ([23Trusted Source](#), [24Trusted Source](#), [25Trusted Source](#), [26Trusted Source](#)).

Limited research directly connects other food additives to an increased risk of cancer. However, a highly processed diet is associated with a higher risk of cancer overall, though it's unclear whether food additives play a role in this ([27Trusted Source](#)).

The most effective strategies for [reducing your cancer risk](#) include avoiding smoking, limiting your alcohol consumption, maintaining a healthy body weight, staying active, and following a nutritious diet high in fiber, fruits, and vegetables ([28Trusted Source](#), [29Trusted Source](#), [30Trusted Source](#)).

Children's health

Some consumers wonder whether certain artificial food additives, such as food colorings, lead to hyperactivity, [attention deficit hyperactivity disorder](#) (ADHD), or autism spectrum disorder (ASD) in children.

Artificial food colorings and flavorings are used to enhance the look and taste of many food products, especially those catered to children. Though natural options exist, artificial colors and flavors are usually used due to their vibrancy and low cost.

Though many groups and diets, such as [the Feingold diet](#), claim that artificial food additives cause behavioral issues or neurodevelopmental disorders in children, little research supports this ([31Trusted Source](#), [32Trusted Source](#), [33Trusted Source](#), [34Trusted Source](#)).

However, BPA is an endocrine disruptor that may lead to developmental issues in growing infants. As such, it has been banned in baby bottles, sippy cups, and packages containing infant formulas. Look for products that say “BPA-free” on the label ([35Trusted Source](#)).

SUMMARY

Most artificial food additives are safe for adults and children to consume. Those that have been shown to harm human health are banned or strictly regulated by the FDA.

Should you limit artificial ingredients?

For most people, it is nearly impossible to completely avoid artificial ingredients, since most food products contain them. Fortunately, you do not need to avoid them completely to live a healthy lifestyle.

Most artificial food additives are not harmful to human health, and those that do pose health risks are banned or limited by the FDA.

Instead of trying to completely eliminate artificial food additives from your diet, focus on consuming a diet of [whole](#), minimally processed foods, which will naturally lower your intake.

If you feel that certain artificial food additives cause unwanted side effects for you, discuss this with a healthcare professional. They may recommend reducing or eliminating certain ingredients.

SUMMARY

You do not need to eliminate artificial food additives to live a healthy lifestyle. Instead, it's best to focus on consuming mostly minimally processed foods and only limit or eliminate foods that bother you.

Tips for reducing your intake

If you're looking to reduce your intake of artificial food additives, here are some helpful tips:

- **Read the label.** By law, food manufacturers are required to list all direct food additives (natural and artificial).
- **Be aware of different names and terms.** Some food additives have more than one name. For example, Splenda is the brand name for [sucralose](#), an artificial sweetener ([36Trusted Source](#)).
- **Eat whole, minimally processed foods.** The best way to reduce your intake is to eat whole foods, such as fruits, vegetables, nuts, seeds, and lean meats.
- **Drink water.** [Choosing water](#) is an easy way to reduce your intake of artificial sweeteners that are commonly found in sodas, energy drinks, and other beverages.

- **Avoid an all-or-nothing approach.** Completely eliminating artificial food additives is difficult and may not be sustainable. Instead, making small changes to your eating pattern can help reduce your intake in a more manageable way.

SUMMARY

By being a conscious consumer, you can make informed decisions surrounding the artificial food additives you choose to eat.

The bottom line

Artificial food additives are tough to avoid. In fact, they're found in most foods in the grocery store.

Most research shows that artificial food additives approved by the FDA are safe for use. That said, more human research will help us better understand their long-term role in human health.

Rather than cutting them out completely, you can take simple steps, such as eating mostly whole, minimally processed foods and learning to read food labels, to reduce your intake.