**What Happens to Additives and Chemicals in Your Diet**

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**Eating processed foods means consuming preservatives, additives, and artificial ingredients. What happens to these chemicals? How does your body process them?**

Put bluntly, your body isn’t designed to process and incorporate preservatives, additives, stabilizers, and other artificial ingredients. Because many of these ingredients are fat-soluble, your body stores them in its fat instead of using them for energy or cell repair. Unfortunately, however, they don’t just sit benignly in your body’s fat. They can change cell structure and metabolize. Some even become carcinogens, which can, over time, cause cancer.

Here are just some of the artificial ingredients used in processed foods, along with a quick summary of what happens to them after they enter the body:

* **Antibiotics:** Farmers feed many animals, particularly poultry and pigs, antibiotics to reduce the death rate from infection, which occurs in very crowded conditions, and to enhance growth and weight gain. The residues of these chemicals remain in the processed meat that humans eat. Overuse of antibiotics creates super bacteria that evolve to resist every antibiotic, which, as you can imagine, isn’t good for the human population. Unfortunately, consuming small amounts of antibiotics in food is the best way to help these superbugs evolve. Antibiotic-resistant bacteria are becoming a huge problem in the medical field. There may come a day when a simple cut or scrape could lead to a life-threatening infection we can no longer treat.
* **Aspartame:** This artificial sweetener becomes a neurotransmitter during digestion, meaning that it can cross the blood-brain barrier. After it crosses that barrier, it can damage and kill brain cells. The body quickly processes aspartame and breaks it down into methanol, which the body can then convert into formaldehyde. This particular conversion can cause changes in cell structure, leading to disease and chronic health conditions.

Anecdotal evidence has revealed that aspartame is a good ant poison. When this product is damp, often — but not always — ants will carry it back to the nest, and within a few days, all the ants disappear.

Aspartame accounts for more than 75 percent of the adverse reactions to food additives reported to the FDA. Many of these reactions are very serious, including seizures and death. A few of the 90 documented symptoms listed in the FDA adverse reaction reports include

* + Breathing difficulties
	+ Depression, anxiety attacks, fatigue, and irritability
	+ Dizziness
	+ Headaches/migraines
	+ Hearing loss
	+ Heart palpitations
	+ Insomnia
	+ Joint pain
	+ Memory loss
	+ Muscle spasms
	+ Nausea
	+ Rashes
	+ Seizures
	+ Tachycardia
	+ Vision problems
	+ Weight gain
* **High-fructose corn syrup (HFCS):** The body partially processes this chemically concentrated sugar and stores it as fat. In fact, the body metabolizes it into fat very quickly. High-fructose corn syrup doesn’t suppress the body’s production of *ghrelin,* a molecule that stimulates the appetite, so your brain doesn’t get the message that you’ve eaten enough food. Plus, the liver converts high-fructose corn syrup into triglycerides, which, when present in excess, can increase the risk of heart disease.
* **Hormones:** Most factory farms feed hormones and *pseudo-hormones* (unnatural molecules that imperfectly mimic real human hormones) to the animals they raise for meat so that they grow bigger faster. The animals store the chemicals in their fat, which humans then eat. These hormones and pseudo-hormones can affect human growth and development. For example, too much estrogen and pseudo-estrogen increases breast and prostate cancer risk.
* **Monosodium glutamate (MSG):** This ubiquitous additive, which is also known as *free glutamic acid,* is present in many processed foods and affects the body in many ways, including the following:
	+ MSG is an *excitotoxin,* which means it overstimulates and damages brain cells.
	+ MSG may be addictive, so you may crave foods that have MSG and eat more of them, creating a vicious cycle.
	+ MSG stimulates the umami taste bud, fooling your body into thinking that the food you’re eating is nutritious.
	+ MSG changes the diameter of your blood vessels, which is why some people feel warm and develop headaches after ingesting it.
	+ MSG stimulates the pancreas, causing it to produce more insulin, so blood sugar levels drop and you get hungry sooner.
	+ MSG intake has been implicated in the development and exacerbation of diseases such as Parkinson’s, multiple sclerosis, stroke, obesity, and depression.

MSG does occur naturally in meats and other foods, but it’s bound up in the protein complexes of those foods and has less of an effect than the added MSG.

* **Nitrates and nitrites:** These chemicals are used in processed meats such as hot dogs and bacon. They can bind with *hemoglobin,* the molecule in your blood that carries oxygen throughout your body, thus causing dizziness, headaches, and rapid heartbeat. Your liver converts nitrates into *nitrosamines,* which are carcinogenic in animals and probably humans, too. Nitrites are carcinogenic in humans.
* **Olestra:** You find this artificial fat in snack foods. At first, snack-food manufacturers touted olestra as a simple way to lose weight because the body doesn’t digest it, meaning that it travels right through the body. Unfortunately, this indigestible property causes some severe and unpleasant physical reactions, which can keep you chained to the bathroom. Plus, the fake fat binds to fat-soluble vitamins your body needs and takes them right out of your body.
* **Trans fats:** These fake fats, made by hydrogenating polyunsaturated fats such as corn oil, are one of the most dangerous artificial ingredients. They raise your risk of heart attack, stroke, diabetes, high blood pressure, and cancer.

Because your body doesn’t recognize that trans fats are artificial, they become part of your cell membranes, making the cells weaker. Consuming trans fats increases the level of LDL cholesterol (the bad stuff) in your blood. Your body easily stores trans fats but can’t easily retrieve them for fuel, so they cause weight gain.

Keep in mind that the FDA says most of these ingredients are safe for human consumption, at least in tiny amounts. (A big change on the regulation of trans fats happened in 2015.) After all, some of them do help preserve food, keeping it safe for long storage periods and long transit times from the factory to the grocery store. But knowing what you know now, you can be the judge of what you want to ingest. Just remember that whole foods don’t need artificial chemicals to stay safe, look better, or taste better.