

Here's Why You Should Consider Not Chewing Gum

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STORY AT-A-GLANCE

- › Global chewing gum sales are expected to reach \$48.68 billion in 2025, but there are downsides to gum chewing to be aware of
- › If you chew gum excessively, it signals to your body that it's time to digest food when it's really not, which could have health implications
- › When you chew gum, it may increase the amount of air and saliva that you swallow, leading to bloating, pressure on the stomach and possibly worsened acid reflux symptoms
- › Gum is essentially made of plastic and often contains titanium dioxide (TiO₂) nanoparticles, artificial colors and other harmful additives
- › Chewing gum is also linked to headaches and temporomandibular disorders, and poses a significant threat to the environment due to plastic pollution

Chewing gum is a common pastime worldwide, with global sales expected to reach \$48.68 billion in 2025. In North America alone, the chewing gum market may reach \$3.5 billion by 2024.¹ Some people chew gum for the flavor while others use it more as a tool to reduce food cravings or help quit smoking.

Still others chew gum as a form of stress relief, as chewing, also known as mastication, may reduce anxiety.² But before you get hooked on this seemingly innocent habit, there are several downsides to chewing gum that you should be aware of.

Chewing Triggers Biological Processes in Your Body

Chewing, and especially chewing slowly, helps with the mastication-to-digestion process, starting in your mouth. Chewing helps break down your food faster, and stimulates the production of saliva, which contains an enzyme called lingual lipase to help break down fats, and which helps (quite a bit) when you swallow. The longer you chew, the more time those enzymes have to start breaking down your food.

The process makes digestion easier on your stomach and small intestine, because digestion takes a lot of energy. Chewing food thoroughly makes it easier for your intestines to absorb the nutrients in the foods you eat.

Chewing also increases glucagon-like peptide 1 (GLP-1). As a peptide hormone, GLP-1 is, among other things, part of a group of incretin hormones, which are released when you eat to regulate insulin, along with many other functions.³ Along with affecting insulin, GLP-1 may influence the nervous system, leading to an appetite-reducing response.

A link may also exist between histaminic neurons in the brain and the periodontal ligament and the masseter muscle – one of four muscles involved in chewing – to influence blood sugar levels.⁴ These processes are beneficial when you're about to eat, but if you chew gum excessively, it signals to your body that it's time to digest food, when it's not.

Chewing Gum May Cause Digestive Issues, Jaw Troubles

When you chew gum, it may increase the amount of air and saliva that you swallow.⁵ This can lead to bloating, pressure on the stomach and possibly worsened acid reflux symptoms.⁶ Titanium dioxide (TiO₂) nanoparticles are also common in gum. They're added as a whitening agent to increase brightness and resistance to discoloration.

Research shows, however, that chronic exposure to TiO₂ nanoparticles significantly decreases intestinal barrier function while increasing reactive oxygen species

generation, proinflammatory signaling and intestinal alkaline phosphatase activity, which plays a role in intestinal health.⁷

Iron, zinc, and fatty acid transport also significantly decreased following exposure to TiO₂ nanoparticles. In a Binghamton University news release, it's explained:⁸

“Acute exposures did not have much effect, but chronic exposure [three meal’s worth over five days] diminished the absorptive projections on the surface of intestinal cells called microvilli.

With fewer microvilli, the intestinal barrier was weakened, metabolism slowed and some nutrients – iron, zinc, and fatty acids, specifically – were more difficult to absorb. Enzyme functions were negatively affected, while inflammation signals increased.”

The European Union banned titanium dioxide for food use in 2021 after the European Food Safety Authority Panel on Food Additives and Flavourings found it “can no longer be considered as safe when used as a food additive.” The panel concluded that TiO₂ particles “have the potential to induce DNA strand breaks and chromosomal damage” and a “concern for genotoxicity could not be ruled out.”⁹

Temporomandibular disorders, which include those relating to the temporomandibular joint, or TMJ, are also associated with gum chewing.¹⁰ Incidence of TMD symptoms, including clicking and pain, were higher in gum chewers than non-chewers.¹¹ If you chew gum on one side of your mouth more often than the other, it can also cause jaw muscle imbalance.

Anytime you overuse a certain set of muscles, it can lead to contracted muscles and related pain, including headaches, earaches, and toothaches over time.

Gum Was Once Natural, Now Contains Plastic

Gum is a processed food that contains questionable ingredients. These include “gum base,” which is what makes gum chewy. The exact ingredients that make up gum base

are often kept quiet as a trade secret, but they may include:¹²

- **Fillers** – These provide texture and bulk to the gum and are usually calcium carbonate or magnesium silicate (talc).
- **Elastomers** – Long synthetic polymer molecules such as polyvinyl acetate.
- **Emulsifiers** – These chemicals help keep flavors and colors mixed.
- **Softeners** – Vegetable oil and lecithin are used to keep the product soft and chewy. Once these have washed away and been swallowed, the gum gets stiff.

It wasn't always this way. People have been chewing gum for thousands of years. One 5,700-year-old piece of chewed gum from Denmark was found to be made of birch pitch, a substance obtained by heating birch bark.

Interestingly, birch pitch contains betulin, a compound with antiseptic properties, so it's possible the "gum" was chewed for medicinal purposes.¹³ Other ancient gum was made from chicle, which comes from the sap of the Sapodilla tree.¹⁴

Modern scientists sought to find a recipe that provided the same characteristics of these natural substances using synthetic chemicals that were easier to source. The U.S. Food and Drug Administration's list of additives¹⁵ permitted for direct addition to food for consumption includes Section 172.615 that covers the chemicals allowed in chewing gum.

These are the additives they say "may be safely used in the manufacture of chewing gum"¹⁶ and bear the name "chewing gum base," which:¹⁷

"... means the manufactured or partially manufactured nonnutritive masticatory substance comprised of one or more of the ingredients named and so defined in paragraph (a) of this section."

The list of ingredients the FDA allows in gum base includes the following, which are plastics, rubbers and waxes:¹⁸

- Butadiene-styrene rubber

- Isobutylene-isoprene copolymer (butyl rubber)
- Petroleum wax, Petroleum wax synthetic
- Polyethylene, one of the most widely used plastics, included in plastic wrap, grocery bags, drainage pipes and bulletproof vests
- Polyvinyl acetate, one of the ingredients found in PVA glue, which you may know as school glue and wood glue¹⁹

As author David Jones wrote in *Just One Ocean*, “You probably had no idea that you were chewing on what is essentially a lump of malleable plastic and that’s not surprising, because the manufacturers don’t actually tell you as much – they kind of dodge around the detail.”²⁰

Toxic Food Chemicals Are Common in Chewing Gum

In addition to titanium dioxide nanoparticles, synthetic food dyes, including Red No. 40, Yellow No. 5, Yellow No. 6 and Blue No. 1, are often added to chewing gum. Such dyes are linked to hyperactivity and other neurobehavioral problems in children.²¹ As noted by the Environmental Working Group:²²

“The California health agency [Office of Environmental Health Hazard Assessment] also found that current federal safe intake levels of these dyes might not protect children’s brain health. Current legal levels were set by the Food and Drug Administration decades ago and do not take recent research into account.

Human studies have also linked synthetic dyes to learning difficulties and restlessness in sensitive children. In the EU, products containing Red No. 40, Yellow No. 5, and Yellow No. 6 must contain the warning ‘May have an adverse effect on activity and attention in children.’”

Artificial sweeteners are also common in chewing gum. While sugar-sweetened gum isn’t recommended, as it can promote tooth decay,²³ artificial sweeteners like aspartame

are toxic. A systematic review and meta-analysis conducted by the World Health Organization revealed “potential undesirable effects from long-term use of NSS [non-sugar sweeteners], such as an increased risk of Type 2 diabetes, cardiovascular diseases and mortality in adults.”²⁴

Further, even sugar-free gum can be bad for your teeth if it contains acidic additives. Acid-containing sugar-free gum, which may be fruit-flavored, may increase the risk of demineralizing enamel on your teeth, causing dental erosion.²⁵

Chewing Gum May Trigger Headaches and Release Mercury From Fillings

Excessive gum-chewing may be an underrecognized trigger for headaches, particularly in children and adolescents. One study involved 30 children with a median age of 16 years who suffered from chronic migraine or tension headaches. After quitting gum-chewing for one month, headaches went away completely in 19 of them while another seven had a reduction in headache frequency and severity.²⁶

When the children then started chewing gum again, their headaches returned within days. It’s possible the headaches may be linked to chewing-gum-induced TMJ, which may cause headaches. A separate systematic electronic search of the literature concluded:²⁷

“Despite the limited evidence, it seems reasonable to suggest that headache attacks may be triggered by gum-chewing in migraineurs and in patients with tension-type headache ...

Although larger randomized studies will be necessary to definitely establish the relationship between gum-chewing and headache across different populations, it seems cautionary to suggest that subjects with migraine or tension-type headache should avoid or limit gum-chewing in their lifestyle.”

While it's often stated that chewing gum may reduce appetite, one study found gum chewers' meals end up being less nutritious than those eaten by non-gum-chewers.²⁸ Chewing gum was also linked to increased meal size and reduced nutrient adequacy. Mint gum chewers were also less likely to eat fruit but their intake of snack foods was not affected, possibly because the minty flavor in the gum makes fruits – but not junk foods – taste bitter.

If you have mercury fillings, you should also know that chewing gum may cause this known neurotoxin to release from the fillings into your body. According to one study:²⁹

"... chewing gum has been shown to increase the release rate of mercury vapor from dental amalgam fillings ... The impact of excessive chewing on mercury levels was considerable."

Every time you chew, mercury vapor is released and quickly finds its way into your bloodstream, where it causes oxidative processes in your tissues. If you chew gum, you're going to be chewing often, which is why it's particularly problematic for those with mercury fillings.

Gum Is 'One of the Biggest Threats to Our Ecology'

Another often overlooked reason to give up gum? It poses a significant risk to the environment because it's made of "nonbiodegradable hydrophobic polymers."³⁰ Because many people toss their gum on sidewalks and streets, gum pollution is a major pollution problem.

According to a review in *Current World Environment*, "Each year, chewing gum generates more than 105 [100,000] tonnes of "plastic" garbage. Thus, the discarded nonbiodegradable residue of the gum produces plastic pollution. Every year, enormous sums of money are spent to clean up the abandoned gum from the streets."³¹

So, not only may chewing gum have adverse effects on your own health, collectively it's contributing to considerable environmental damage as well. If you're chewing gum for stress relief, consider other options like meditation, yoga and the [Emotional Freedom](#)

Technique (EFT). If it's the flavor you're after, try adding fresh mint leaves or cinnamon to water for a healthy alternative.

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