

Does Your Dental Floss Contain Toxic Nonstick Coating?

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STORY AT-A-GLANCE

- › Although it has not been well-studied, flossing has been a basic tenet of developing healthy gums and reducing the potential for periodontal disease
- › While the development of nonstick material has made flossing easier, it increases your exposure to toxic chemicals
- › To avoid unnecessary toxic exposure, confirm your favorite floss is free of toxic chemicals, switch brands or use a water flosser that directs a pulsating stream of water to remove debris from between your teeth

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Flossing your teeth is one of the basic tenets of maintaining healthy gums and reducing your potential for periodontal disease. And, your dental health is foundational to your overall health. Your oral health is a frequently underappreciated and misunderstood aspect of your daily care that may have a significant impact on your overall health.

The truth is, your mouth is like a window to your physical and even mental health. The soft tissues and your teeth reflect what's going on in the rest of your body, and your [oral microbiome](#) contributes to your [gut microbiome](#). It is very difficult to achieve a high level of physical health or athletic performance if you don't effectively address your oral health.

For instance, inflammation is a well-known trigger for disease, and gum disease and other oral conditions produce a low-grade inflammation in the soft tissue in your mouth.

When bacteria that causes cavities and gum disease enter into your circulatory system through inflamed oral tissue, it may lead to an inflammatory response in your whole body.

Benefits From Flossing

The research on flossing is thin as there have been no long-term studies that explore the impact of adding flossing to your daily dental hygiene.¹ However, interdental cleaning is highly recommended, and flossing is one type of interdental cleaning.² Studies that have participants flossing five days a week demonstrated a reduction in plaque buildup on the teeth that flossing intermittently did not.

Interdental cleaning devices help remove debris and plaque that build up between two teeth. These areas are hard to reach using toothbrushing alone. Other types of interdental devices include dental picks, small flexible interdental brushes, pre-threaded flossers, water flossers or wooden plaque removers.³

Given that half of all Americans suffer from [periodontal disease](#),⁴ or a serious gum infection that may damage tissue and your jawbone, even a statistically small improvement in plaque prevention from flossing warrants a continued recommendation for the practice.⁵ Researchers have found that the benefits from flossing are dependent upon the expertise of the individual flossing. In other words, the better your technique, the greater your benefits.

The meta-analysis that sparked headlines such as, "Feeling Guilty About Not Flossing? Maybe There's No Need" (The New York Times) and "A Big Problem With Flossing" (CBS News),⁶ didn't disprove the benefits of flossing. Rather it didn't find enough studies proving the practice provided strong statistically significant benefit. Flossing has been recommended and practiced for many years and is likely a good idea that is just waiting to be adequately studied.

You may have had your own teeth-cleaning experiences where the cleaning went significantly better after flossing regularly and worse when you let the habit lapse.

However, despite the benefits to your teeth, gums and overall health from flossing, you may have been inadvertently increasing your exposure to toxins, such as plastics, Teflon, perfluorinated chemicals (PFCs) and [fluoride](#).

Is There Teflon on Your Floss?

I have been writing about the dangers of nonstick cookware coated with [Teflon](#) for over a decade. The chemical has also made its way into stain- and water-resistant clothing and stain-resistant carpet and furniture. Actually, Teflon is the trademarked name used on a range of products.⁷ The chemical that gives Teflon the characteristics used to make products nonstick is polytetrafluoroethylene, a synthetic resin, also known as PTFE.

The chemical is highly nonreactive and hydrophobic, meaning it is stable under a number of chemical and mechanical circumstances and can't become wet with water.⁸ It has been in widespread use since the 1940s. Floss is made from either nylon threads or from Teflon.⁹ The polymer is melted, stretched into a thin strand and processed to improve the tensile strength. PTFE is a monofilament that doesn't break or shred easily.

Once the base of the floss is produced with Teflon, the strand is coated with waxes and flavors to change the quality of the floss and add flavors. However, while the floss strand is uniquely resilient and durable, using PTFE on a daily basis in your mouth, where chemicals are easily absorbed through the mucosa, is a highly questionable practice.

Perfluorinated Chemicals Poisoning Your Health

In the process of manufacturing PTFEs, manufacturers use perfluorooctanoic acid (PFOA), also known as C8.¹⁰ [PFOAs](#) are also found in your Teflon floss fibers as they are used to create the PTFEs. Both man-made chemicals reduce the friction of your floss over your teeth, making flossing a little easier, especially if there is little room between your teeth.

This advantage comes at a high cost. Both PTFEs and PFOAs fall into the category of PFCs, and they increase your risk of specific types of cancers, including bladder, thyroid,

prostate, testicles and kidney.^{11,12} DuPont, the manufacturer of Teflon, was accused by the U.S. Environmental Protection Agency (EPA) of failing to report the risk to human health and the environment from PFCs between 1981 and 2001.¹³

The EPA has also established health advisories for levels of PFOAs found in your drinking water based on their understanding of the health risks associated with exposure to the chemicals.¹⁴ Yet DuPont continues to manufacture Teflon for use in your dental floss and nonstick cookware.

A national biomonitoring program by the U.S. Centers for Disease Control and Prevention (CDC) found levels of PFOAs in the blood of nearly everyone tested, concluding exposure was widespread across the U.S.¹⁵

Studies in humans have demonstrated that exposure to PFCs may affect the development of your unborn child, decrease your fertility, impact your immune system and increase your cholesterol level.¹⁶ PFCs are highly resilient and don't break down easily in the body or in the environment. In fact, they build up slowly over time, concerning scientists on their long-term effect on human health. The list of effects on your health from exposure to PFOAs includes:¹⁷

| | | |
|-------------------------------------|--|------------------------|
| Ovarian cancer | Prostate cancer | Lymphoma |
| Reduced fertility | Arthritis | Hyperactivity |
| Altered immune response in children | Hypotonia (low muscle tone) in infants | Ulcerative colitis |
| Rising cholesterol levels | Hypertension during pregnancy | Thyroid disease |
| Testicular cancer | Breast cancer | Kidney cancer |

Does Gore-Tex Coating Make It Worse?

In an effort to distance one water repellent chemical from another, Gore Fabrics, makers of Gore-Tex outerwear, has set a goal of eliminating PFCs from all of their consumer fabric products by the end of 2025.¹⁸ This leaves the Gore-Tex company scrambling to make their products waterproof and wind-resistant using a chemical other than a fluoride.

The chemical composition of Gore-Tex that makes it water-resistant also reduces the friction of your dental floss over your teeth. If you can polish the **bacteria** from between your teeth quickly and simply, it improves the likelihood you'll floss daily. In instances where your floss was manufactured with nylon, it may be coated with a water-resistant Gore-Tex material to enable the floss to slide more easily between your teeth.¹⁹ However, currently the Gore-Tex compound still contains PFCs.

As a class of chemicals, PFCs prompted 200 scientists in 2014 to sign a "Madrid Statement"²⁰ calling for more research on PFC and urging governments to restrict the use.²¹ Environmental Working Group (EWG) senior scientist David Andrews commented,²² "We should probably have more oversight into this whole class of chemicals. It took decades to show how bad PFOA is."

DuPont Continues to Manufacture Teflon Using PFCs

The truth about PFCs only emerged after DuPont was hit with a \$16.5 million fine for hiding the truth that these chemicals were linked with cancer and were poisoning the drinking water of tens of thousands of people in Ohio and West Virginia.²³ Although the company promised to phase out the chemical by the end of 2015, they continue to hide behind laws designed to protect a company's proprietary secrets about the manufacture of their products.

The EWG's experts examined the legacy DuPont has left to our environment and your health, publishing "Poisoned Legacy – 10 Years Later, Chemical Safety and Justice for DuPont's Teflon Victims Remain Elusive."²⁴ At the time of the fine, DuPont had known about the health effects of PFCs but hadn't informed workers, health officials or local

residents of the dangers. Ten years later, another EWG investigation showed Americans were still at risk from PFC production.

The victims from the toxic water spill in 2005 are only now getting justice²⁵ as DuPont has settled and agreed to pay \$671 million to thousands of litigants. The Chemours Co. agreed to pay approximately half of the settlement as they became the subsidiary producing Teflon in 2005 when the spill happened. Both companies continue to deny any wrongdoing.

However, early in the process, DuPont brought together a panel of its own scientists to determine if any diseases could be linked to C8. These scientists concluded there were probable links to six diseases, including high cholesterol, kidney and testicular cancers, ulcerative colitis and thyroid disease.²⁶

One of the reasons DuPont continues to be able to use PFCs in the manufacture of its products is an outdated and badly written chemical safety law²⁷ passed in 1976 that fails to regulate the industry. Renée Sharp, EWG's former director of research, commented:

"PFCs are a poster child for real reform of the Toxic Substances Control Act. Under the nation's broken chemical law, these and other dangerous chemicals are allowed on the market without proof of safety. Congress has an opportunity to act now to safeguard the public from dangerous chemicals."

Should You Floss Before or After Brushing?

The technique of flossing is as important as when you floss. In this short video, Dr. Carlos Meulener demonstrates the proper technique for flossing that, with just a little practice, takes less than one minute. Regularly brushing and **flossing** are the basics when it comes to dental care, but does it matter which comes first?

It depends on whom you ask. Some dentists recommend flossing first simply because it gets it out of the way and lessens the risk that you'll simply skip it once you're done with brushing. Others recommend flossing first because you can then brush away any plaque particles or food debris that have been removed. Still others advise brushing your teeth

and then flossing before you rinse, as you'll pull some of the [toothpaste](#) between your teeth as you floss.

Then there are those who say flossing first is better as it "opens" the areas between your teeth for the toothpaste to enter. As for the American Dental Association (ADA), they say: "Either way is acceptable as long as you do a thorough job."²⁸ In short, if you prefer one way over the other, it's fine to keep doing it that way. In case you were wondering, an ADA poll found 53% of Americans brush before they floss, while 47% floss before they brush.²⁹

Change Your Teflon-Coated, PFC-Polluted Dental Floss to a Healthier Option

Not all commercially prepared dental floss contains PFCs, PTFEs or PFOAs, but manufacturers don't have to label their product if they do. If you'd like to reduce your exposure to these hazardous health chemicals, consider these options:

- Contact the company that makes your floss. You may find the answer you're looking for online without a call or you may need to call the company. Those who don't use the chemical will be proud to tell you and those that do may give you the runaround with statements like:³⁰ "Teflon-like compound in some but not all of their flosses — but a lot of this is considered proprietary."
- Switch the brand you buy to one that doesn't use toxic chemicals. I recommend looking for a fluoride- and Teflon-free, environmentally friendly product.
- Switch to a water flosser. These little appliances send a stream of pressurized water over your gums and teeth to help remove plaque, debris and bacteria from below the gum line and between your teeth.

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