

Is It Time to Dump Your Toothpaste?

Analysis by [Dr. Joseph Mercola](#)

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STORY AT-A-GLANCE

- > You'll produce 10,000 gallons of spit to neutralize acid and help fight germs in your mouth, use nearly 5 miles of floss and 20 gallons of toothpaste in your lifetime
- > Despite documented health risks, and an FDA ban for use in antibacterial soap, you may still find triclosan in your toothpaste, especially those aimed at children
- > Research finds triclosan in toothpaste may alter your gut microbiome and slowly increase the number of potentially antibiotic resistant bacteria in your intestines; switching to a safer alternative may reduce your risk

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Over the course of your lifetime you'll produce 10,000 gallons of spit that your body uses to initiate digestion, neutralize acid in your mouth and help fight germs that produce bad breath.¹ If you floss each day, you'll go through approximately 5 miles of floss over your lifetime and will use 20 gallons of toothpaste. If you brush your teeth twice a day for two minutes, you'll spend 24 hours brushing each year.

Even though you don't swallow your toothpaste (and shouldn't!), it all happens in an area of your body used as a drug delivery system when a rapid onset of action from medication is desired,² with a permeability four to 4,000 times greater than your skin.³ The wide range is due to the different permeability in the different regions in your mouth. Thus, any chemical you place in your mouth, despite the fact you don't swallow, may be absorbed directly into your bloodstream.

With this in mind, it's worth considering what you and your children are placing in your mouth on a daily basis. Unfortunately, as toothpaste falls under the category of cosmetics,⁴ manufacturers are left largely to regulate their own products by the U.S. Food and Drug Administration (FDA).

In the coming months, triclosan, an antibacterial chemical, will be removed from consumer hand washes in response to an overwhelming database of research demonstrating health risks. However, it will (illogically) still remain in toothpaste, especially those toothpastes designed for use in children.

Triclosan Remains in Children's Toothpaste Despite Risk

A 2017 study demonstrated how quickly blood levels of **triclosan** may rise in small children exposed to the chemical in toothpaste and hand soap.⁵ This is one of the first studies to show how triclosan invades the bodies of young children through environmental exposure. Senior study author Joe Braun, assistant professor of epidemiology at Brown University, explained the impetus behind the study:⁶

"There's very little data on the exposure in those first years of life. There are a lot of behavioral changes in those years, and environmental chemicals can play a role."

Braun and his colleagues tested 389 women and children from Cincinnati between pregnancy and until the children were 8 years old. They collected urine three times during the pregnancy and periodically between the children's first and eighth year. They found triclosan in more than 70% of the samples.

Interestingly, by age 8 they found children who used the most **hand soap** had 66% more triclosan in their body, and those who washed their hands more than five times a day had four times more chemical than those who reported washing their hands once or less per day.⁷

Children who brushed their teeth with toothpaste in the past 24 hours had 2.5 times more triclosan than those who had not used toothpaste. Isaac Pessah, Ph.D., researcher

at the University of California, who was not involved in the study, commented:

"It's a thorough, well-done analysis. Given the high concentrations [of triclosan] in personal care products, you're seeing that the concentrations in the end user are also quite high."

Triclosan in More Than Toothpaste and Hand Soap

Despite the fact that U.S. manufacturers must phase out triclosan after the FDA banned it and several other chemicals from use in hand soap after concerns were made public that it disrupted the body's hormonal system, [triclosan remains in other personal care products](#).

Triclosan is a broad spectrum [antibacterial](#) compound with high solubility that works by affecting a protein reductase enzyme essential for bacterial fatty acid synthesis.⁸ As it is a potent, effective and inexpensive chemical, triclosan may be found in a number of commercial and personal care products, including:⁹

Soaps	Hand washes	Dishwashing products
Laundry detergents and softeners	Toothpaste and mouth washes	Deodorants and antiperspirants
Plastics	Hair conditioners	Bedding
Cosmetics and shaving creams	Acne treatment products	Apparel, such as socks and undershirts
Trash bags	Impregnated sponges	Surgical scrubs
Hot tubs, plastic lawn furniture	Implanted medical devices	Pesticides

Why Was Triclosan Used in Colgate Toothpaste?

Research suggests triclosan is effective against **tooth decay**, but not against periodontitis, plaque or gingivitis.¹⁰ Some even believe there is a role for the chemical in protecting oral health.¹¹ However, while the chemical is highly effective against oral bacteria, so is chlorine bleach¹² – but you wouldn't dream of brushing your teeth with it.

Colgate used to add triclosan in its toothpaste to "fight harmful plaque germs,"¹³ but as of 2019, has stopped using it after consumers have raised concerns regarding the ingredient's safety. On its website, Colgate makes this statement:¹⁴

"Triclosan is an antibacterial ingredient used in personal care and home care products to reduce or prevent bacterial contamination and in toothpaste, where it is proven to reduce the germs that can cause gum disease.

Some consumers and regulatory bodies have questions about triclosan, and so, beginning in 2015, we reformulated our antibacterial dish liquid and hand soaps with alternate active ingredients that provide the same or superior performance.

Starting late in 2018, we introduced a new Colgate Total toothpaste that delivers more benefits than the original formula with triclosan, and as of January 2019 we no longer use it as an ingredient."

Hormone Disruption and Gut Health at Stake

A number of studies have led to understanding how triclosan functions as an **endocrine disruptor**. In this short news video, Dr. Gary Cohan describes how triclosan may impact a man's sex drive. Studies have demonstrated thyroid hormone disruption in rats and frogs, as well as disrupted thyroid hormone-associated gene expression.¹⁵

Exposure to triclosan has become so commonplace that it is showing up in urine, blood and breast milk of people around the world. Even those who don't use products with triclosan are exposed to it in their food, water supply and even household dust.¹⁶

Triclosan has both estrogenic (female hormone) and androgenic (male hormone) properties, which may lead to the development of breast cancer.¹⁷ Exposure to triclosan may elevate calcium levels in the cells that may potentially affect neurodevelopment and neurological functioning,¹⁸ and impair mitochondrial function.¹⁹

After exposure to sunlight, or interaction with chlorine in tap water, breakdown products of triclosan include a list of dangerous chemicals, such as chloroform, 2,8-Dichlorodibenzo-p-dioxin and 2,4-dichlorophenol, an endocrine disruptor and U.S. EPA priority pollutant.²⁰ However, the damage to your body does not end with your endocrine system.

A small study from Stanford University found while triclosan was killing bacteria in your mouth, it may also be slowly breeding superbugs in your intestinal tract.²¹

Preliminary data from this study fall in line with information from others that demonstrate triclosan may cause subtle disruption in your **gut microbiome**, integral to your immune system and your overall health.²² The researchers collected stool samples over a one-year period, finding subtle differences in the bacterial communities of those using toothpaste with triclosan.

Many of the bacteria from the group Proteobacteria that grew in the gut of those using triclosan are known to become broadly resistant to antibiotics and are linked to dysbiosis, or an imbalance of gut microbiome.²³ Although the study had limitations, the researchers found an increase in an antibiotic resistance gene that enables bacteria to resist penicillin and other similar drugs.

Other Questionable Toothpaste Ingredients

While triclosan is not found in all commercial toothpastes, your toothpaste likely contains other toxins known to be endocrine disruptors, or to increase inflammation or have carcinogenic activity. According to the Cornucopia Institute's report, "Behind the Dazzling Smile,"²⁴ the average woman uses 12 personal care products with 168 different chemicals and the average man uses six products with 85 different ingredients.

A common ingredient found in dental products and your tap water is fluoride, a known endocrine disruptor, neurotoxin and bone weakening substance the FDA classifies as a drug when used to prevent disease, such as cavities. Humans have no known physiological requirement for fluoride.

More information about this drug intentionally added to your tap water may be found in a previous article by Michael Connett, attorney for the [Fluoride Action Network](#). Other chemicals and additives commonly found in toothpaste may include:

Carrageenan – A thickening agent suspected of being a carcinogen, it is linked to intestinal inflammation.

Artificial colors and flavors – Some have been linked to hyperactivity, behavioral problems, cancer and allergic reactions.

Sweeteners – [Aspartame](#) and other artificial sweeteners are often added. Aspartame metabolizes in your body to formaldehyde and has been linked to birth defects, cancer and weight gain.

Sodium lauryl sulfate (SLS) – [SLS](#) interferes with the function of your taste buds, has been linked to the formation of canker sores and is registered as an insecticide.

Formaldehyde-releasing preservatives – While formaldehyde is a prohibited ingredient as it is a known carcinogen, some preservatives work by slowly releasing formaldehyde.

Parabens – These are endocrine-disrupting preservatives linked to cancer and reproductive toxicity.

Propylene glycol – A type of mineral oil commonly found in paint and antifreeze, it easily penetrates skin and facilitates the absorption of other chemicals.

Diethanolamine (DEA) – DEA is a hormone disruptor that reacts with other ingredients to form N-nitrosodiethanolamine (NDEA), that is easily absorbed and has

been linked with cancers of the stomach, esophagus, liver and bladder.

Brush Your Teeth With Safer Alternatives

Fortunately, there are safer alternatives, not all of which you have to make at home. Consider choosing from the Environmental Working Group's Skin Deep Cosmetic Database.²⁵ While over-the-counter products are great for travel, you may enjoy using a homemade toothpaste that you can make with a few basic ingredients.

For example, combine a simple mixture of [coconut oil](#) and baking soda with a few drops of peppermint essential oil, adding enough [baking soda](#) to form a smooth consistency. Store in a glass jar in a cool, dry place.

Coconut oil may help inhibit the growth of *Streptococcus mutans*, an acid-producing bacterium that is a cause of tooth decay, and peppermint oil extract has been shown to be superior to the mouthwash chemical chlorhexidine in inhibiting the formation of biofilm formations linked to dental cavities.²⁶ Also remember that your diet is the foundation for strong, healthy teeth. Nutrients that are particularly important for oral health include:

- Vitamins C, D and K2
- Magnesium
- Phosphorus
- Potassium
- Calcium

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