

# Heavy Metals in Everyday Toothpaste Threaten Your Health

## BRIEF SYNOPSIS:

- › Independent testing of 51 popular toothpaste brands revealed 90% contained lead, 65% arsenic, 47% mercury, and 35% cadmium. Only six toothpastes tested clean
- › Heavy metals enter toothpaste through contaminated raw materials like hydroxyapatite, calcium carbonate, and bentonite clay used in manufacturing
- › Lead and cadmium disrupt cellular functions, causing kidney damage, osteoporosis, anemia, and various other health complications
- › Despite evidence, toothpaste companies refuse to remove heavy metals. Some even use legal means to intimidate whistleblowers
- › Switching to a homemade toothpaste made from coconut oil, baking soda, and essential oils offers safer protection compared to mass-produced alternatives

One product that's an essential part of oral care is toothpaste. Sold in different colors and flavors, almost everyone has a preferred brand they regularly buy. However, most people take toothpaste for granted and don't think twice about what's in it. As it turns out, the minty flavor you've been enjoying reveals a dark side – heavy metals.

## Independent Testing Reveals Heavy Metal Contamination in Popular Toothpaste Brands

In an investigative report published by Lead Safe Mama (LSM), an organization advocating for safety in consumer goods and lead poisoning prevention, they recently released an updated list of 51 popular toothpaste brands containing common heavy metals. Spearheaded by Tamara Rubin, a filmmaker and environmental activist, their work has already resulted in six product recalls, showing their commitment to protecting public health.

- **Heavy metals are in your toothpaste** — In a summary of LSM's report, 90% of samples had lead, 65% had arsenic, 47% had mercury, and 35% had cadmium.
- **The movement started many years ago** — According to a report from The Guardian, Rubin's campaign against heavy metals in toothpaste began 12 years ago. While working with children who had been exposed to heavy metals, she noticed that their families had a common toothpaste brand, which contained lead.
- **Toothpaste will put your health at risk** — The highest limits of the samples have been found to violate the state of Washington's highest set limits, but not federal limits. Still, the federal government acknowledges the dangers of lead, saying that no level of exposure is safe.
- **Manufacturers are not willing to change** — Despite the shocking exposé by LSM, toothpaste manufacturers are turning a blind eye. In fact, many have attacked her, according to The Guardian:

*"So far, none of the companies Lead Safe Mama checked have said they will work to get lead out of their product, Rubin said. Several sent her cease-and-desist letters, which she said she ignored, but also posted on her blog.*

*Some companies have defended themselves, often claiming that lead is found in trace levels throughout the environment and is impossible to avoid. Others have said the levels Rubin found are not concerning."*



LSM isn't the only one shining a light on the dangers of heavy metals in mass-produced toothpaste. In a systematic review published in *Frontiers in Dental Medicine*, researchers are also aware of the growing dangers of these products.

The team analyzed 11 studies from around the world to gauge how widespread heavy metal contamination is in over-the-counter toothpastes. The sample size reviewed toothpastes from regions including Asia, Europe, and Africa.

- **Heavy metals in toothpaste are common** – Overall, researchers consistently found concerning levels of heavy metals, notably lead, cadmium, and chromium, across the tested products. The review highlighted that these heavy metals appeared frequently enough to pose genuine public health concerns.
- **Lead was among the most troubling metals** – It showed up in varying quantities, sometimes negligible, but in certain studies, levels soared as high as 6,313 parts per billion. For reference, the U.S. Food and Drug Administration (FDA) sets the limitations of lead at 20 parts per million (ppm), showing how much people are at risk when using these products.
- **Cadmium appeared almost as frequently** – Most of the toothpastes in the cited studies contained this metal. Research shows that even low levels of exposure from this heavy metal increases your risk for osteoporosis, as well as kidney and liver disease. It does this by causing mitochondrial dysfunction after exposure.
- **Chromium is another dangerous heavy metal** – Prevalent in most of the tested toothpastes, chromium has no reason to appear in these products. In fact, one of the cited studies in the review noted that this element was not supposed to be in toothpaste at all.
- **Reckless manufacturing allows heavy metals to seep in** – The researchers emphasized that the primary route these heavy metals use to get into toothpaste products is through the raw ingredients, often in areas where the soil naturally

contains heavy metals. Unsurprisingly, when manufacturers do not thoroughly test these raw materials for contaminants, heavy metals easily slip into your toothpaste unnoticed.

- **The effects of heavy metals on your health** – From a biological standpoint, the reason these metals are so harmful revolves around how they disrupt key bodily functions at a cellular level. For instance, cadmium interferes directly with your kidneys' filtration systems. In addition, it's been found to affect the lungs and pancreas.

**Lead**, meanwhile, targets multiple vital functions throughout your body. Exposure is linked to a wide range of issues, such as appetite loss, weight loss, vomiting, constipation, anemia, kidney failure, black gum deposits and irritability.

These findings reinforce the urgent need for better testing and monitoring for toothpaste. As noted by the researchers:

*"There is a need for specific guidelines on the limits for heavy metals in toothpastes, with a clear distinction between essential and nonessential metals.*

*Toothpastes should not exceed the acceptable safety limits prescribed by regulatory agencies. Stringent quality assurance processes need to be developed and put into place by manufacturers and strictly assessed and evaluated by regulators."*

While regulatory bodies debate stricter guidelines, you can immediately protect yourself by carefully choosing oral care products that transparently disclose their ingredients and testing standards. Better yet, you can make your own toothpaste at home.

## **Dental Floss Is Also Filled with Toxic Chemicals**

On a similar note, dental floss – another crucial part of optimal oral health – has been found to contain "forever" chemicals that affect your overall well-being. Specifically, one study showed an association between Oral-B Glide dental floss (as well as other

household items) and higher exposure to per- and polyfluoroalkyl substances (PFAS).

- **PFAS are found in fluorinated floss** – Out of 18 dental floss products, six of them (including three Glide products) contain polytetrafluoroethylene (PTFE), a forever chemical commonly known as Teflon – the same material found in nonstick cookware. Conversely, floss that do not have detectable levels of fluorine are considered non-fluorinated and thus, unlikely to contain forever chemicals.
- **Forever chemicals are found in the filament** – Further analysis showed that the six floss positive for forever chemicals contained "typical" values between 1,000 and 3,000 counts/ $\mu\text{C}$  (microcoulomb), a unit of electricity. However, the exact figures are hard to quantify because of how thin floss can get. Despite this roadblock, the researchers are convinced that flossing is one way many people are exposed to these toxins:

*"This is the first evidence that flossing with PTFE-based dental floss could contribute to an individual's body burden of PFASs, but additional data are required to verify this finding, for example, demonstrating the potential for PFASs in floss to migrate into saliva or onto hands."*

- **Personal care products are also linked to elevated PFAS levels** – Many of these products, including cosmetics, fragrances, and lotions, incorporate PFAS to enhance texture, durability, or water resistance. This makes you unknowingly add to your chemical load each day.
- **Consumer habits influence toxic load** – The study revealed some differences between African-American and non-Hispanic white women. While both groups experienced elevated PFAS levels from product use, African-American women generally had higher concentrations, possibly due to different product preferences or socioeconomic factors influencing exposure levels.
- **The consequences of exposure to your health** – PFAS disrupt your health by interfering with [hormone](#) systems, which control nearly every bodily function, such as metabolism, immune function, and reproduction. Once these chemicals enter

your bloodstream, they mimic natural hormones, binding to receptors and altering normal hormone balance.

Another key mechanism involves PFAS affecting your liver, the primary organ responsible for detoxifying harmful substances. These chemicals overwhelm your liver, impairing its ability to filter toxins from your blood effectively. Over time, this impairment increases your risk of liver disease<sup>11</sup> and even certain types of cancers.

- **PFAS are highly persistent** — This means they don't easily break down. Once inside your body, these chemicals linger, continuing to disrupt your health long after initial exposure, hence the "forever" in their name.

Forever chemicals accumulate steadily, building up harmful concentrations that heighten your risk of chronic illness, particularly affecting organs and systems essential for maintaining good health. According to a report from The Conversation, they have the ability to remain in your body for decades.

## **Top Tips to Reduce Exposure to Heavy Metals in Oral Health Products**

Now that you're aware of the dangers lurking in many commercial toothpastes and dental floss, it's important to take steps to reduce your exposure. Here are practical recommendations:

1. **Choose toothpaste with verified ingredients** — If making toothpaste at home isn't practical for you, carefully look for companies that clearly state they test their toothpaste for heavy metals.

Look for products labeled "third-party tested" or "heavy metal-free," and always read ingredient lists thoroughly. Transparency from brands helps you make healthier choices easily. LSM also has recommendations for toothpaste with nondetectable levels of heavy metals and [fluoride](#). Again, I recommend reviewing the list to give you an idea which products you should avoid and buy.

2. **Choose safe dental floss alternatives** — On a similar note, look for floss that is verified to not contain forever chemicals and other additives, such as fluoride. For example, there are vegan vegetable waxes that are smoother and glide between your teeth easier compared to regular floss.
  
3. **Adopt oil pulling as part of your daily routine** — Oil pulling is a traditional oral hygiene practice that involves swishing organic coconut oil around your mouth for 10 to 15 minutes daily.  

This practice effectively binds and removes toxins and pathogens from your mouth before they damage your oral health. Thus, oil pulling also is a great adjunct to brushing your teeth compared to commercial mouthwashes.
  
4. **Work up a sweat regularly** — If you've been using popular toothpaste brands, especially the ones mentioned by LSM, it's highly likely you've been exposed to heavy metals. While switching to homemade toothpaste minimizes your exposure, it's just one part of the equation — you should also work toward detoxifying yourself. I recommend you start exercising regularly, as sweating has been shown to be one of the best ways to remove heavy metals from your body. Specifically, high-intensity exercise up to 75 minutes a week is effective. But don't go any higher than that, because you start to lose the longevity benefits associated with exercise.
  
5. **Make your own toothpaste at home** — Creating your own toothpaste gives you full control over every ingredient. In the next section, I'll share my recipe.

**Here's a Healthy Homemade Toothpaste Recipe You Can Try**

While there are plenty of high-quality toothpastes in the market, I recommend making your own at home. It'll be far cheaper and healthier for your oral health. Here's a DIY recipe that I've been using for years now to great effect:

Ingredient	Function	Quantity
Ultra-fine eggshell powder (eight to 10 large shells)	Provides calcium for remineralization	1/4 cup once milled
Coconut oil (soft but not melted)	Acts as a binder and mild antimicrobial	2 tablespoons
Baking soda	Works as a gentle cleanser and pH level buffer	1 tablespoon
Xylitol or erythritol (optional)	A sweetener that helps fights <i>S. mutans</i>	1 teaspoon
Peppermint essential oil	Provides a fresh taste, and is a mild antiseptic	Eight to 10 drops
Castile soap or bentonite clay (optional)	Gives it a light foaming or silkier feel	1/2 teaspoon

### Directions

- 1. Collect and rinse the eggshells** – Scrape out the membranes from the eggshells and give them a quick water rinse.
- 2. Sterilize eggshells in two stages to kill salmonella** – Boil in plain water for 10 minutes (skim off foam), then drain. Afterward, bake at 400 degrees Fahrenheit (205 Celsius) for 15 to 20 minutes until bone-dry.

- 3. Grind eggshells to talc** – Grind the shells in a coffee-mill or spice grinder, then pass through a fine sieve. The powder should feel like cornstarch between your fingers. Any grit can scratch your tooth enamel.
- 4. Mix the paste** – In a small bowl, combine baking soda, xylitol, and eggshell powder. Mash in softened coconut oil until you hit a frosting-like texture. Stir in essential oil (and soap or clay if using).
- 5. Jar and store** – Spoon into a clean glass jar. Cap tightly. This toothpaste keeps two to three months in a cool cupboard, but stores longer in the fridge (coconut oil solidifies below 76 degrees Fahrenheit/24 degrees Celsius).
- 6. Brush** – Use a pea-sized dab. Dip a dry brush or use a tiny spatula to avoid contaminating the jar. Apply in gentle circles for two minutes, then rinse. If you find the toothpaste to be too runny, add extra baking soda and/or eggshell powder. If it's too stiff, add more coconut oil.

Making your own eggshell toothpaste certainly has its advantages but remember that it's not a miracle oral solution. Remember to maintain regular checkups with your dentist, floss, and eat a healthy diet.

## **Frequently Asked Questions (FAQs) About Heavy Metals in Toothpaste**

**Q: Are heavy metals commonly found in toothpaste?**

**A:** Yes. Tests show heavy metals like lead, cadmium, arsenic, and mercury appear frequently in popular toothpaste brands, with some containing extremely high levels that damage your health.

**Q: What health problems are linked to heavy metals in toothpaste?**

**A:** Exposure to heavy metals from toothpaste is connected to serious health issues including cognitive impairment, hormonal disruption, kidney and liver damage, anemia, osteoporosis, and even behavioral problems in children.

**Q: Why do toothpaste manufacturers allow heavy metals in their products?**

**A:** Heavy metals enter toothpaste primarily through untested or poorly sourced ingredients like calcium carbonate, hydroxyapatite, and bentonite clay. Manufacturers often neglect thorough testing and dismiss concerns by claiming these metals naturally occur in the environment.

**Q: How can I reduce my exposure to heavy metals from toothpaste?**

**A:** You can reduce your exposure immediately by making your own toothpaste at home with natural ingredients, choosing brands that clearly test and label their products as heavy metal-free, and incorporating daily detoxifying practices like oil pulling.

**Q: Is it enough to just switch toothpaste?**

**A:** Switching to safer toothpaste significantly cuts your exposure, but to detoxify accumulated metals already in your body, you should regularly engage in activities like vigorous exercise and sweating, which effectively help remove toxins from your system.