MERCOLA
Take Control of Your Health

Unexpected Chemicals Found in Human Milk Raise New Questions About Infant Exposure

Analysis by Dr. Joseph Mercola | February 17, 2026

STORY AT-A-GLANCE

- Researchers analyzing breast milk found traces of plastics, disinfectants, pesticides, and other industrial chemicals, showing that breast milk reflects everyday environmental exposure
- Five separate studies using advanced testing methods identified chemicals that routine screening often misses, including newer plastic substitutes and personal care preservatives
- Certain chemical levels in breast milk aligned with differences in infant growth measures, highlighting why early-life exposure draws scientific attention
- Despite these findings, breast milk remains the gold standard for infant nutrition because it provides immune protection and biological signals no substitute matches
- Reducing plastic contact, improving water quality, and simplifying personal care products lowers the chemical burden that transfers alongside the benefits of breastfeeding

You've done everything right. You've chosen organic produce, filtered your water, avoided alcohol during pregnancy. You're breastfeeding your baby, knowing it's the gold standard for infant nutrition. But new research reveals an uncomfortable truth: your breast milk also carries a chemical signature of modern life — traces of plastics from takeout containers, disinfectants from household cleaners, pesticides from conventional produce, even breakdown products of medications taken years ago.[1]

Early development depends on tightly regulated hormonal and metabolic signaling. When hormone-disrupting chemicals appear during this stage, researchers pay close attention, even when levels are low. These chemicals mimic natural hormones like estrogen or block hormone receptors, interfering with growth signals, metabolism, and brain development during a period when these systems are still forming.

What stands out in this research is not the presence of one dominant toxin, but the repeated detection of many different chemicals that originate from routine activities such as food storage, household cleaning, and personal care product use.

At the same time, breast milk remains the gold standard for infant nutrition, delivering immune protection and biological signals that no substitute matches. The concern is not whether breastfeeding is safe, but how modern environments influence what passes through breast milk — and its effects on future generations.

Breast Milk Carries a Mixture of Modern Industrial Chemicals

Researchers from McGill University used a non-targeted screening approach — essentially casting a wide net to identify any chemical signature present, rather than testing for a predetermined list of suspects.[2] Think of it as the difference between searching for specific known criminals versus photographing everyone who passes through airport security to see who shows up.

Most safety testing evaluates chemicals in isolation — as if you encounter BPA alone, without simultaneous exposure to phthalates, parabens, and pesticides. But daily life doesn't work that way. You're exposed to dozens of chemicals simultaneously through food, air, water, and products. Regulatory science hasn't caught up to this reality. The researchers analyzed 594 human milk samples collected in Montreal, Canada, and in Vhembe and Pretoria, South Africa, between 2018 and 2019, with eye-opening results.

- **The study revealed chemicals that had never been reported in human milk before** — Among the newly identified substances were antimicrobial preservatives, which appear in soaps, disinfectants, and personal care products. Plastic-related

antioxidant additives also showed up, reflecting exposure from food packaging and manufactured materials. For parents, this confirms that everyday products leave biological traces in breast milk, even without obvious overuse.

- **Agricultural and household chemicals appeared alongside personal-care residues —** The researchers also detected propanil, an agricultural herbicide, and chloroxylenol, an antimicrobial common in household disinfectants. None of these compounds had been previously documented in human milk.

- **Medication byproducts offered a real-world snapshot of treatment history —** In samples from South Africa, scientists identified a breakdown product of efavirenz, a medication once widely used to treat HIV. When chemicals enter your body, they don't necessarily stay in their original form. Your liver and other organs chemically modify them into metabolites — breakdown products that can be more or less toxic than the parent compound.

  This is why researchers now track both the original chemicals and their transformed versions. According to study co-author Stéphane Bayen, the presence of the HIV drug breakdown product indicated maternal use during or before the sample years, before treatment guidelines changed after 2019. This shows how past medical decisions remain visible in biological samples years later.

  Bayen described the results as evidence that people experience a "complex cocktail of chemical residues," shaped by diet, environment, and lifestyle. This matters because chemicals rarely act alone. Two chemicals that seem safe individually might amplify each other's effects when combined — or create entirely new effects. Regulatory testing evaluates one chemical at a time, but your baby receives them all at once.

- **Some chemical levels correlated with measurable infant outcomes —** Concentrations of certain chemicals, including bisphenol A and bisphenol AF, aligned with altered growth patterns among South African infants. Jonathan Chevrier, an associate professor of epidemiology involved in the work, stressed that

this was the first study of its kind and that replication remains necessary before drawing firm conclusions. Still, this link explains why scientists track growth signals so closely during infancy.

- **Breast milk remains the gold standard for infant nutrition —** Bayen stated that the detected substances appeared at low concentrations and that the health effects of many remain unknown. Establishing baseline data allows regulators and scientists to expand testing targets beyond the usual suspects.

  That creates a practical pathway for reducing exposure over time instead of guessing where risks originate. Once you understand the exposure pathways — how these chemicals travel from products to your bloodstream to your milk — the leverage points for intervention become obvious. You can't control industrial contamination of the entire food supply, but you can control whether you microwave leftovers in plastic or store them in glass.

5 Separate Studies Point to the Same Exposure Problem

The McGill research didn't rely on one analysis. It drew from five separate studies, each asking a different question about what ends up in breast milk, how those chemicals get there, and whether they relate to infant growth or development. Together, these studies show not only what turns up in human milk, but also how replacement chemicals, household habits, and regional differences shape what infants receive during a critical stage of growth.

- **Bisphenols in breast milk linked to measurable changes in infant growth —** A study published in Environmental Research examined bisphenols — plastic-related chemicals that **disrupt hormones** — in breast milk from South Africa and Canada.[3] Levels of BPA, BPS, and BPAF were highest in rural South Africa and lowest in Montreal, where only BPS was detected.

Microwaving food in plastic containers and maternal diet strongly influenced exposure. Among South African infants, BPAF aligned with greater body length and head circumference, while higher BPA aligned with smaller head size.

This contradictory pattern reveals a problem with chemical substitution: manufacturers replace BPA with structurally similar cousins (BPS, BPAF), assuming safety, but these "replacements" interact with the body's hormone receptors in entirely different ways. Same chemical family, opposite biological effects.

- **Testing revealed chlorinated chemicals not previously found in human milk —** Research published in Exposome used a broad scanning method rather than a preset chemical list.[4] This approach identified six chlorinated compounds, including disinfectant antimicrobials, pesticide-related chemicals, a UV filter, and a breakdown product of an HIV medication.

  Several of these substances had never been reported in human milk before. The findings show that standard testing overlooks meaningful exposures from cleaning products, agriculture, and medical treatments combined.

- **Plastic substitutes appeared alongside the chemicals they replaced —** A Journal of Exposure Science & Environmental Epidemiology study looked beyond BPA and searched for structurally similar replacements.[5]

  Researchers identified 11 additional compounds, including chemicals used in thermal receipt paper, ultraviolet filters, and synthetic antioxidants. Two plastic stabilizers were detected in human milk for the first time. This demonstrates that removing one known chemical often results in exposure to newer alternatives rather than true reduction.

- **Parabens showed up in multiple processed forms, not just their original state —** A Chemosphere study focused on parabens, preservatives common in cosmetics and personal care products.[6] Scientists identified common parabens, newly recognized parabens, and sulfated forms that show how the body chemically modifies these compounds.

Some parabens appeared only in South African samples. The same analysis detected phthalates, PFAS, and even a tire-related chemical, illustrating how environmental contamination reaches breast milk through indirect and unexpected routes.

- **Country-specific patterns revealed chemical substitution rather than elimination —** An Environmental Pollution study measured nine bisphenols using a sensitive extraction method.[7] South African samples showed higher BPA levels, mostly in processed form, while Canadian samples showed a shift away from BPA toward BPS. BPAF appeared only in South Africa. These findings show that regulatory changes often swap one chemical for another, leaving overall exposure intact rather than reduced.

Practical Steps to Reduce Chemical Exposure While Protecting Your Baby

These findings might feel overwhelming — and the instinct might be to panic or dismiss breastfeeding altogether. But **breast milk** remains the best source of infant nutrition — irreplaceable, in fact — even in a world saturated with **environmental chemicals**. The goal here is not to create fear around breastfeeding.

The goal is to reduce the everyday exposures that contribute to chemical residues in human milk. When daily habits change, what transfers to your baby changes as well. That gives you meaningful control at a time when control often feels limited.

1. **Keep breastfeeding as the nutritional foundation —** If you're breastfeeding, staying the course supports your baby's immune defenses, gut development, and brain growth, while supplying antibodies, enzymes, and hormones that help guide healthy metabolism.

   The researchers behind the breast milk findings stated clearly that breast milk remains ideal for infants because it delivers nutrition and immune protection no substitute can match. Lowering environmental exposure strengthens these benefits

by reducing what transfers alongside those protective compounds rather than replacing breastfeeding itself.

2. **Filter your drinking water —** Drinking water and cooking water contribute to ongoing chemical intake, including residues from pesticides, plastics, and disinfectants. Install a high-quality water filtration system to intercept contaminants before they enter every glass of water you drink, every meal you cook, and every bottle you prepare. This single step lowers cumulative intake without changing routines.

3. **Simplify personal care and household products —** Many of the unexpected compounds identified in breast milk trace back to soaps, disinfectants, and cosmetic products. Reducing the number of products you use each day lowers the number of preservatives and antimicrobial agents absorbed through your skin.

   Fewer products create fewer exposure pathways. Choosing natural personal care products and cleaning agents, or making your own at home, also reduces your exposure to toxic chemicals. Specific swaps that matter:

   - Replace antibacterial hand soap with natural soap
   - Skip body lotions with long ingredient lists; use organic coconut oil instead
   - Eliminate triclosan-containing toothpaste (check labels)
   - Make a simple deodorant from baking soda and coconut oil

4. **Limit plastic contact with food and beverages —** Plastic-related additives detected in breast milk originate largely from food packaging and storage materials. Switch to glass, stainless steel, or ceramic containers to eliminate contact with plastic stabilizers and antioxidants — especially when heating food, since heat dramatically accelerates chemical migration into whatever you're eating or drinking. Prioritize these changes in order of impact:

- **Don't microwave in plastic** (this showed the strongest correlation with BPA levels in the research)
- **Switch hot food/beverage containers first** (coffee cup lids, takeout containers for hot food, plastic wrap touching hot dishes)
- **Replace plastic food storage** gradually with glass (mason jars work for most needs; focus on acidic foods like tomato sauce first, as acids leach more chemicals)
- **Avoid canned foods with BPA linings**
- **Don't reuse disposable plastic bottles** (reuse increases leaching)

5. **Use my homemade formula recipe if breastfeeding is not possible —** Some parents can't breastfeed, and that reality deserves a practical solution. In those cases, my homemade formula recipe avoids industrial seed oils and unnecessary additives common in commercial formulas. This option allows greater control over ingredients and reduces exposure to avoidable contaminants.

   Below is my preferred dairy-based formula, which will make 36 ounces of milk. If you need to make large batches to last several days, you can do so, but make sure to freeze the finished product. For children who are unable to tolerate milk proteins, I recommend trying my hypoallergenic milk formula instead.

Healthy Homemade Infant Formula

Procedure

1. Warm 1 7/8 cups of filtered water (to get this amount, measure out 2 cups of water and remove 2 tablespoons) over medium heat.
2. Add 2 teaspoons of grass fed beef gelatin and 4 tablespoons of lactose to the water; occasionally stir until dissolved.

3. Place 2 cups of raw organic whole cow's milk into a clean glass blender. Add the remainder of ingredients to the blender:
    - 1/4 cup of liquid homemade whey (for instructions, see Pope's video. You can also visit the Weston A. Price Foundation's website for their own homemade whey recipe)
    - 2 to 3 tablespoons of raw cream
    - 1/4 teaspoon acerola powder
    - 1/4 teaspoon bifidobacterium infantis (a probiotic)
    - 2 teaspoons Frontier Brand nutritional yeast flakes
    - 1/2 teaspoon high-quality non-fermented cod liver oil. You could substitute the cod liver oil with wild-caught Alaskan Salmon oil or krill oil
    - 1 teaspoon coconut oil
    - 1 teaspoon organic ghee
4. Remove the pot of water from the stove. Add 2 teaspoons of coconut oil and 1/4 teaspoon high-vitamin butter oil to the water to melt. Once melted, add the water mixture to the blender ingredients and blend for about three to five seconds.
5. Pour the blended ingredients into glass jars or glass baby bottles and refrigerate. Before feeding, warm the formula by placing the glass bottle in a pot of hot water. A baby bottle warmer can also be used. Never microwave infant formula, as this will destroy many valuable nutrients and enzymes and pose a burn risk.

FAQS About Chemicals in Breast Milk

Q: Why are chemicals showing up in breast milk at all?

A: Breast milk reflects a mother's daily environment. Chemicals from plastics, pesticides, disinfectants, and personal care products enter your body through food, water, air, and skin contact, then transfer into milk in small amounts.

Q: Does the presence of these chemicals mean breast milk is unsafe?

A: No. The researchers emphasized that breast milk remains the gold standard for infant nutrition because it delivers immune protection, hormones, enzymes, and growth signals no substitute can replicate.

Q: Which everyday habits most strongly influence exposure?

A: Studies linked higher chemical levels to common behaviors such as microwaving food in plastic containers, frequent use of personal care products, contact with food packaging, and environmental contamination tied to diet and household products.

Q: Are all plastic-related chemicals the same in how they affect infants?

A: No. Different bisphenols behaved differently. Some aligned with larger infant growth measures, while others aligned with smaller head size, showing that chemical substitutes do not act the same in the body.

Q: What matters most for parents who want to reduce exposure?

A: The biggest leverage points are reducing plastic contact with food, improving water quality, simplifying personal care and cleaning products, and maintaining

breastfeeding whenever possible to preserve its well-documented health benefits.

Sources and References

- [1, 2] McGill Newsroom January 20, 2026
- [3] Environmental Research November 15, 2025, Volume 285, Part 4, 122452
- [4] Exposome September 8, 2025, Volume 5, Issue 1
- [5] Journal of Exposure Science & Environmental Epidemiology June 2, 2025
- [6] Chemosphere March 2025, Volume 373, 144154
- [7] Environmental Pollution May 1, 2024, Volume 348, 123730