

Mothers' Milk Positive for Chemicals Causing Birth Defects

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✓ Fact Checked

STORY AT-A-GLANCE

- › Data from a small, diverse group of lactating women found 100% of the breast milk was contaminated with PFAS, some at levels 2,000 times higher than what is recommended as safe for drinking water
- › The information counters industry claims that the new generation of PFAS do not bioaccumulate in human tissue and suggests bioaccumulation is getting worse
- › When a baby's first food is contaminated with toxic chemicals, whether in breast milk, formula or the drinking water used to mix formula, it increases the risk of lifelong health challenges, including obesity and Type 2 diabetes
- › Avoid products manufactured with PFASs and consider the many benefits of breastfeeding to baby and mother, including natural immunity and a reduction in sudden infant death syndrome for baby and quicker recovery from childbirth and lower rates of cardiovascular disease for mom

In the 20th century, scientists developed a group of complex, manmade chemicals called per- and polyfluoroalkyl substances (PFASs). In the past decade, researchers have found the chemicals contaminate drinking water and the environment.¹ Current data measure these chemicals at alarming rates in breast milk.²

The properties of these substances include oil and water repellency, temperature resistance and friction reduction. Experts estimate there may be up to 10,000 of these forever chemicals,³ the full effects of which are not yet known.

The most widely recognized PFASs are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), both associated with kidney and testicular cancers.⁴ The family of chemicals are also linked to endocrine disruption and a host of other problems in people who live in communities that have heavily contaminated drinking water.

Out of the 10,000 [forever chemicals](#), 3M agreed to stop making PFOS in 2002 and DuPont began phasing out PFOA in 2005.⁵ Yet, with just a chemical tweak, companies began marketing a new generation of PFASs with similar chemical structures.

The properties of PFAS made them useful in aerospace technology, photography, construction and everyday items like paper products and nonstick cookware.

Ubiquitous use, delays in reducing use and the known bioaccumulative and persistent effects of the chemicals have generated an environmental problem, largely since some of these forever chemicals can take up to 1,000 years to degrade.⁶

Frightening Levels of Forever Chemicals Found in Breast Milk

The featured study was published in Environmental Science and Technology, which researchers say is the first study in 15 years to analyze [PFAS](#) in a group of breastfeeding women in the U.S.⁷ Data were gathered from a cross-section of socioeconomically and geographically diverse groups of women and showed [PFAS contamination](#) in all 50 samples tested.

In some samples, the levels were nearly 2,000 times higher than what is recommended safe for drinking water. There are no set standards for PFAS found in breast milk.

However, as a comparison, the Environmental Working Group (EWG)⁸ advises a target for drinking water at 1 part per trillion (ppt) and the Agency for Toxic Substances and Disease Registry⁹ recommends 14 ppt in children's drinking water.

The researchers found levels ranging from 50 ppt to more than 1,850 ppt in woman's breast milk. Evaluating the effects of high amounts of PFAS in infants is difficult. Dr.

Sheela Sathyanarayana, a co-author of the study and pediatrician with the University of Washington, spoke with a reporter from The Guardian.¹⁰

She told the reporter studies in older children and adults have shown the presence of these chemicals damage the immune system and create **hormonal disruptions**. This is particularly problematic for infants as their immune system is not yet mature.

Another co-author of the study and science director with Toxic Free Future in Seattle, Erika Schreder, added her saying,¹¹ “The study shows that PFAS contamination of breast milk is likely universal in the US, and that these harmful chemicals are contaminating what should be nature’s perfect food.”

The results of the study counter the industry claim that the new generation of PFAS do not bioaccumulate in humans.¹² The researchers also evaluated international breast milk data, finding in comparison to the current data that older chemical concentration is declining, while newer chemical concentration has doubled every 4.1 years.¹³

Evidence from this study also has suggested the challenge with PFAS bioaccumulating in people is getting worse. When data from the current study were compared to a study spearheaded by the EWG in 2005,¹⁴ the researchers found there was an increase in the amount of new-generation PFAS found in breast milk.

Additionally, while manufacturers have phased out some older compounds, they were still present in breast milk, and some were found at high levels. Schreder believes the best solution is banning the entire class of chemicals and went on to say:¹⁵

“The study provides more evidence that the PFAS that companies are currently using and putting into products are behaving like the ones they phased out, and they’re also getting into breast milk and exposing children at a very vulnerable phase of development.”

Polluting Infants Likely Has Lifelong Consequences

More than 15 years ago, the EWG found¹⁶ 287 chemicals in umbilical cord blood that passes between mother and baby. Of these, 180 are known to cause cancer in humans and animals, 217 are known toxins to the brain and nervous system, and 208 are known to cause abnormal development or birth defects in animal models.

There is substantial scientific evidence that demonstrates exposure in the womb may be dramatically more harmful as a baby is developing. Exposure during childhood also increases vulnerability related to the rapid development and incomplete defense systems of a child.

Many of these PFAS chemicals can potentially leach from food packaging, causing one group of 33 scientists to write a consensus statement¹⁷ pleading with lawmakers “to take swift action to reduce exposure”¹⁸ to [plastics in food packaging](#).

Pete Myers, founder of Environmental Health Services and publisher of Environmental Health News, was also a contributor to the statement. In an editorial on the consensus statement, he wrote:¹⁹

“... hazardous chemicals can transfer from food contact materials into food, and some are known endocrine disrupting chemicals, or ‘EDCs.’ EDCs are associated with chronic diseases such as diabetes, obesity, cancer and neurological disorders like ADHD.”

And concluded:

“The authors say while there is a great amount of information for some of the most well-studied food contact chemicals, such as bisphenol A (BPA) and phthalates, many of the 12,000 reported food contact chemicals lack data on their hazardous properties or level of human exposure. This suggests that the human population is exposed to unknown and untested chemicals migrating from food wrappings, with unknown health implications.”

Increasing amounts of data have demonstrated PFAS chemicals have a lethal effect on human health and the environment. After years of mounting evidence, the EPA revealed their PFAS Action Plan in February 2020,²⁰ in which they state the “agency has multiple

criminal investigations underway concerning PFAS-related pollution.” They wrote, “Since 2002, the agency has initiated 12 enforcement actions, including four since 2017.”

Better Living Through Chemistry

The definition of natural is “existing in or formed by nature.”²¹ There is no value-added implication in the definition that natural is healthier. Yet, in a commentary published in the journal *Pediatrics*, authors Jessica Martucci, Ph.D., and Anne Barnhill, Ph.D., addressed the potential that the word “natural” adds value.²²

In it, they discussed how using the word “natural” may have unintended consequences of equating “natural” to “healthier and better.” The authors used statements from the 109-page Nuffield Council report²³ as a basis for their argument and recommended the term not be used when pediatricians encourage new mothers to breastfeed.

The authors expressed the concern that praising **breastfeeding** as a natural way to feed infants may bolster the belief that any natural approach is “presumptively healthier.” In the article, Martucci said the original commentary arose from what they believe to be a:²⁴

“... pretty straightforward and interesting observation: the “nature” arguments used by vaccine skeptics to critique public health efforts seemed highly reminiscent of the “nature” arguments used by public health authorities to promote breastfeeding.”

In other words, the premise was that breastfeeding promotion programs used a language that is similar to the kinds of arguments they believe are used by people who oppose **vaccines**. Months later, Martucci described the backlash that arose from the commentary:²⁵

“However, I also think that “nature” arguments have become increasingly entangled with very conservative political ideologies that are often laced with racist, classist, and misogynistic undertones (and sometimes overtones).”

Juxtaposing breastfeeding, which has no associated risk, with vaccinations that have a long history of drug-related side effects was likely not an accident and may have been meant to draw a parallel, insinuating both are equally safe. The underlying issue may have been that using the word “natural” could negatively influence the decision to vaccinate.

Taken on the surface, it appears the authors were making an argument that breastfeeding and bottle-feeding are equally healthy for infants. If women choose not to breastfeed, the only other option is **bottle feeding** with lab-produced formulas mixed with drinking water that has tested positive for toxic chemicals across the U.S.

In 2015, 200 scientists from 38 countries signed the Madrid Statement on PFASs,^{26,27} warning about the dangers of old and new PFAS chemicals. The scientists recommended avoiding all products using PFASs. Helpful tips can also be found in the EWG’s “Guide to Avoiding PFCS.”²⁸ More suggestions are found in “**Warning: Biodegradable bowls contain toxic chemicals.**”

Breastfeeding Supports Brain and Gut Development

Just as the food you eat impacts your gut microbiome and consequently your immune system, so does the food that infants and children eat. In one study published in the Journal of Pediatrics,²⁹ researchers looked at how bacteria in an infant's digestive system affect burning and storage of fat, and how the infant body uses energy.

Information was gathered from 1,087 infants. Mothers reported how long infants were breastfed, when formula was introduced and when solid food was introduced. Stool samples were collected at 3 to 4 months of age and again at 12 months and tested for gut bacteria.³⁰

Data revealed the highest level of beneficial bacteria at three months and one year was in infants who were exclusively breastfed. Infants who were exclusively formula-fed had the least variety of bacteria and nearly double the risk of becoming overweight.

Several studies have also demonstrated that breastfeeding benefits a baby's brain. Data from Brown University³¹ used magnetic resonance imaging to watch brain growth in children under age 4. They discovered that babies who were exclusively breastfed for the first three months had “enhanced development in key parts” of the brain as compared to those who were fed formula or a combination of formula and breast milk.

One review of the literature³² concluded there was compelling evidence in both full term and preterm infants that breastfeeding benefited a child's **neurodevelopment**. They went on to recommend:³³

“Overall, available evidence regarding neurodevelopmental benefits supports existing recommendations that infants should be breastfed exclusively for 6 months and that hospitalized preterm infants should receive fortified maternal milk.”

A third study³⁴ released from Children's National Hospital in Washington, D.C., demonstrated how breast milk can increase biochemicals important for brain growth and development. The researchers studied extremely premature babies in the neonatal intensive care unit. They discovered:³⁵

“... significantly higher levels of some key biochemicals in breast-fed babies, compared to those who had been fed formula milk. Namely, there were increased amounts of inositol (a molecule similar to glucose) and creatine (a molecule which helps to recycle energy inside cells). The percentage of days that babies were fed breast milk was also linked to higher levels of a vitamin-like nutrient called choline.”

More Amazing Benefits of Breastfeeding

If you're making a decision about breastfeeding, it's helpful to know the benefits to both baby and mom. Breastfeeding may confer the following benefits to you and your baby:

Babies

- **Natural immunity** — Breastfeeding initially provides passive immunity as antibodies from the mother are passed through breast milk to the infant. Researchers have also found breast milk has a unique capacity to stimulate the infant's immune system with long-term positive effects.³⁶
- **Bonding** — The close interaction during breastfeeding is just one way mothers develop a greater bond with their infant, which may extend years beyond infancy³⁷ and impact parenting.
- **Reduction of blindness in preemies** — Retinopathy of prematurity causes blindness in 10% of severe cases occurring in premature infants. Breastfeeding reduces this risk.³⁸
- **Reduction in sudden infant death syndrome** — In one study, breastfeeding reduced the risk of sudden infant death syndrome in children by 50% at all ages through infancy.³⁹
- **Reduced allergies** — In one study⁴⁰ of 1,278 mothers and babies, exclusive breastfeeding prevented the development of **allergic diseases** and asthma.

Mothers

- **Quicker recovery from childbirth** — The release of oxytocin during breastfeeding helps the uterus return to a normal size and reduces postpartum bleeding.⁴¹
- **Faster weight loss after childbirth** — During pregnancy your body automatically stores extra fat to provide food for your baby. Producing milk burns 480 extra calories each day, which helps mobilize visceral fat stores.⁴²
- **Reduced rates of breast cancer** — Breastfeeding may cut the risk of breast cancer in women who have had children.⁴³
- **Reduced rates of cardiovascular disease** — Women who breastfeed have a 10% lower risk of **heart disease** and stroke.⁴⁴
- **Reduced risk of postpartum depression** — The release of prolactin and oxytocin while breastfeeding produces a peaceful and nurturing sensation. Women who breastfeed enjoy a reduced risk of developing postpartum depression in the first four months of their infant's life.⁴⁵

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