Issue At A Glance:

PFAS ("Forever Chemicals")

PFAS, or "forever chemicals," are widespread environmental contaminants linked to serious health risks. This issue brief highlights common sources, potential health effects, and current policies to reduce exposure and protect communities.

Introduction

Per- and polyfluoroalkyl substances (PFAS), also known as "forever chemicals," are a class of over 12,000 synthetic chemicals first developed in the 1940s to resist heat, water, oil, and chemicals.[1] Early uses included firefighting foams for jet fuel fires; non-reactive coatings for wires; electronics and equipment; and Teflon, the world's first nonstick cookware coating.[2]

From the 1950s through the 1970s, PFAS expanded into consumer products due to their durability.[2] They were incorporated into nonstick cookware, waterproof and stain-resistant fabrics, fast food packaging, cosmetics, dental floss, and cleaning products.[2,3] Their widespread use, combined with minimal regulation, made PFAS ubiquitous in modern life.

Internal studies in the 1960s-70s showed that PFAS could accumulate in the body and cause harm, and by the 1980s, worker exposure was linked to birth defects and organ damage.[4] Public awareness grew after a 1998 lawsuit, with research in the 2000s connecting PFAS to cancer, thyroid problems, and immune impacts.[5]

Glossary

Forever chemicals	Nickname for PFAS because they do not break down over time
HFPO-DA	A newer PFAS created to replace PFOA, aka Gen X
PFAS	A large family of man-made chemicals found in many everyday products
PFHxS	A PFAS commonly found in firefighting foams and stain-resistant products
PFNA	A less common PFAS used in plastics and coatings
PFOA	One of the best-known PFAS, formerly used in nonstick cookware
PFOS	Another well-known PFAS, once used in firefighting foam and stain repellants

Why PFAS are Concerning

PFAS are persistent, widespread chemicals, earning the nickname "forever chemicals" because they do not break down in the environment or the human body. They are found in approximately 45% of U.S. tap water, particularly near military bases, airports, and manufacturing sites.[6] PFAS are also ingested through contaminated food, inhaled via household dust and absorbed through everyday consumer products such as nonstick cookware, stain-resistant fabrics, packaging, and cosmetics.[7] This ubiquity makes avoiding exposure difficult for the general population.

The health risks of PFAS exposure are significant. Because PFAS accumulate in the body over time, even low-level exposure can contribute to long-term health risks. Research has linked PFAS exposure to cancer (including kidney and testicular cancer); liver and kidney damage; endocrine disruption; immune system effects; and reproductive or developmental harms.[7,8] Children, pregnant individuals, and occupational groups such as firefighters and chemical plant workers are particularly vulnerable.[9]

The persistence of PFAS in both the environment and the human body makes them a long-term public health concern. Unlike many other pollutants, PFAS do not degrade naturally, leading to cumulative contamination of water sources, soil, and food chains.[10] As a result, millions of Americans face ongoing exposure that could compound over their lifetime.[7]Addressing PFAS contamination requires coordinated action at the policy, regulatory, and community levels, with particular attention to protecting vulnerable groups and reducing health disparities.

OCWD PFAS Pilot Program: Advancing Groundwater Treatment

The Orange County Water District (OCWD) launched the nation's largest pilot-scale study in 2021 to remove PFAS from local groundwater, testing 14 treatment methods including granular activated carbon and ion exchange resins.[11] Phase I results demonstrated that all tested media could reduce PFAS to below detectable limits, with Phase II refining options for full-scale implementation. This effort aims to protect over 800,000 residents served by 100+ impacted wells.[11]

What's Being Done About PFAS

Federal Action

Bipartisan Infrastructure Law (2021): The 2021 Infrastructure Investment and Jobs Act (also known as the Bipartisan Infrastructure Law) allocated $10 billion to support PFAS remediation efforts, with a focus on assisting disadvantaged communities and upgrading water infrastructure.[12]

EPA Drinking Water Standards (2024): In 2024, the Environmental Protection Agency (EPA) established the first enforceable drinking water standards for six PFAS compounds, including PFOA, PFOS, PFHxS, PFNA, and HFPO-DA (GenX). These standards require water systems to monitor and treat drinking water to reduce PFAS exposure to the lowest feasible levels.[13]

Regulatory Rollback (2025): In 2025, the Trump Administration partially rolled back the 2024 EPA PFAS drinking water rule, extending compliance deadlines and removing limits for some compounds. This rollback has created uncertainty for states, water systems, and communities.[14]

State Action

New Jersey (2018-2019): New Jersey became one of the first states to set enforceable drinking water standards for PFOA, PFOS, and PFNA, adopting limits stricter than federal guidelines.[15]

New York (2020): New York banned the use of PFAS in food packaging and restricted PFAS-containing firefighting foams. The state has also invested in water system testing and cleanup for affected communities.[16]

California AB 1817 (2022-effective 2025): Passed in 2022, this law prohibits the manufacture, sale, or distribution of new textile articles containing regulated PFAS starting January 1, 2025. Stricter PFAS thresholds will apply in 2027, and standardized testing requirements will be enforced beginning in 2030.[17]

California AB 2515 (2024-effective 2025): This law bans the sale of menstrual products containing intentionally added PFAS, effective January 1, 2025. By 2027, stricter PFAS thresholds will be phased in.[17]

Personal Action

While PFAS are widespread and difficult to avoid completely, individuals can take steps to reduce personal exposure.

Water safety: Use water filters certified to remove PFAS (e.g., activated carbon to reverse osmosis systems), particularly in areas with known contamination.[18]

Safer products: Choose PFAS-free cookware, food packaging, cosmetics, and textiles when possible; look for “PFAS-free” labels.[18]

Food practices: Limit consumption of microwave popcorn bags, fast-food wrappers, and other packaging known to contain PFAS. Wash produce thoroughly.[18]

Conclusion

PFAS are persistent "forever chemicals" linked to cancer, liver and kidney damage, endocrine disruption, and developmental harm. Found in drinking water, food packaging, consumer products, and the environment, these chemicals are nearly impossible to avoid. This puts the general population, especially children, pregnant individuals, and occupationally exposed workers, at ongoing risks. Their long-term cumulative effects make PFAS a critical public health challenge.[10]

Tackling PFAS requires urgent, coordinated action. Federal and state agencies must enforce strong drinking water standards and fund remediation efforts. Industries should accelerate safer, non-toxic alternatives. Individuals can reduce exposure by choosing PFAS-free products and using certified water filters. Public awareness and advocacy are key to protecting communities. Immediate action can curb exposure, protect health, and prevent the long-term harms of these pervasive chemicals.

Did you know?

PFAS have been detected in the blood of 97% of Americans, including newborns.[10]

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