Dr. Smith Live

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Topic

"Forever Chemicals"

- **What are "Forever Chemicals?"**
- **Are we all contaminated with them?**
- **What are the health risks of PFAS?**
- **How can I detox PFAS chemicals from my body?**

The following information is quoted from the Environmental Working Group's website:

The 'forever chemicals' are in 99% of Americans

Hundreds of everyday products are made with highly toxic fluorinated chemicals called PFAS. They build up in our bodies and never break down in the environment. Very small doses of PFAS have been linked to cancer, reproductive and immune system harm, and other diseases.

For decades, chemical companies covered up evidence of PFAS' health hazards. Today nearly all Americans, including newborn babies, have PFAS in their blood, and more than 200 million people may be drinking PFAS-tainted water. What began as a "miracle of modern chemistry" is now a worldwide crisis.

What Are PFAS?

In 1946, DuPont introduced nonstick cookware coated with Teflon. Today the family of fluorinated chemicals that sprang from Teflon includes thousands of nonstick, stain-repellent and waterproof compounds called PFAS, short for per- and poly-fluoroalkyl substances.

PFAS are used in a staggering array of consumer products and commercial applications. Decades of heavy use have resulted in contamination of water, soil and the blood of people and animals in the farthest corners of the world. PFAS are incredibly persistent, ***never breaking down*** in the environment and remaining in our bodies for years.

DuPont invented the PFAS chemical patented as Teflon, but 3M became its main manufacturer. In 2001, a scandal erupted in Parkersburg, W.Va., after discovery of the Teflon chemical in the drinking water of tens of thousands of people near a DuPont plant. (The story is documented in the film “The Devil We Know.”)

A class-action lawsuit uncovered evidence DuPont knew PFAS was hazardous and had contaminated tap water but didn’t tell its workers, local communities or environmental officials. The lawsuit also triggered studies linking the Teflon chemical to cancer and other diseases.

What are the health risks of PFAS?

The most notorious PFAS chemicals – PFOA, the Teflon chemical, and PFOS, an ingredient in 3M's Scotchgard – were phased out in the U.S. under pressure from the Environmental Protection Agency after revelations of their hidden hazards. (They are still permitted in items imported to this country.) Numerous studies link these and closely related PFAS chemicals to:

- Testicular, kidney, liver and pancreatic cancer.
- Reproductive problems
- Weakened childhood immunity
- Low birth weight
- Endocrine disruption
- Increased cholesterol
- Weight gain in children and dieting adults

PFOA, PFOS and the related phased-out compounds are called "long chain" chemicals because they contain eight carbon atoms. Since these chemicals have been phased out, the EPA and the Food and Drug Administration have recklessly allowed the introduction of scores of "short chain" replacements, with six carbon atoms.

Chemical companies claim this structure makes them safer. But DuPont admits that the short-chain chemical GenX causes cancerous tumors in lab animals. A 2019 Auburn University study found that short-chains may pose even worse risks than long-chains, which supports scientists' growing agreement that the entire class of PFAS are hazardous.

How are we exposed to PFAS chemicals?

EWG and the Social Science Health and Environmental Health Research Institute track PFAS contamination reported by federal and state authorities. As of July 2019, our tracking map shows that PFAS contaminates public drinking water systems serving 19 million people in 49 states. Michigan has the most PFAS sites, but that's largely because most other states have not tested for the chemicals as extensively. Unreleased federal data suggest that up to 110 million Americans could have PFAS-contaminated drinking water.

But drinking water is not the main route of PFAS exposure for most Americans:

- Although the original PFAS chemical used to make Teflon has been taken off the market, Teflon and other brands of nonstick cookware are still produced with new PFAS that may be no safer.
- PFAS chemicals are widely used to coat paper and cardboard wrappers for fast food and bakery goods.
- PFAS chemicals lurk in stain-resistant furniture and carpets treated with Scotchgard, Stainmaster and other fabric treatments.
- Clothes labeled stain- or water-repellent, such as Gore-Tex jackets, usually contain PFAS chemicals.
- PFAS are even in personal care products and cosmetics.

Who is responsible for PFAS pollution?

Manufacturers

As far back as 1950, 3M studies showed PFAS could pollute people's blood. By the 1960s, 3M and DuPont animal studies showed that PFAS were health hazards. In the 1980s, both companies linked PFAS to cancer and found elevated cancer rates among their own workers. But they kept these and other studies secret. Here is a timeline of internal memos, studies and other documents detailing the decades-long deception.

Six other companies that made PFOA were subject to the PFOA phaseout. They included Arkema, Asahi, BASF, Clariant, Daikin and Solvay Solexis. In 2015, DuPont spun off its PFAS business to a new company named Chemours. Chemours' PFAS plants have also polluted drinking water, and the two companies are locked in a legal battle over who will pay to clean up contamination.

Industrial discharges

At least 475 industrial facilities may be discharging PFAS into the environment. Yet there are currently no restrictions on industrial PFAS discharges under the federal Clean Water Act or the Clean Air Act.

How do we detox PFAS chemicals?

Slide presentation