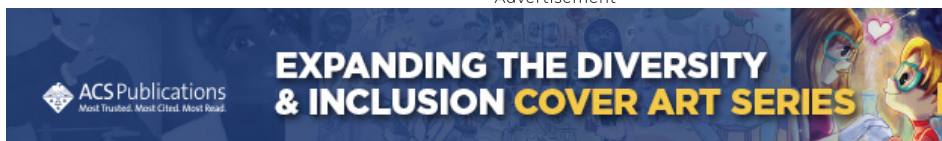


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What Are Forever Chemicals?

**Sandi Schwartz**

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Forever chemicals hang around in the environment, causing health problems like cancer and obesity. Find out where they are and how to avoid them.

Did you know that even after some harmful chemicals are phased out, they can linger in the environment and even in our bodies?

Forever chemicals, aka PFAS, are a category of more than 9,000 chemicals that do not easily break down. They end up staying around “forever,” causing a whole host of health and environmental problems.

While forever chemicals have existed for decades in numerous products, they’re now making headlines. Today nearly all Americans, including newborns, have PFAS in their blood, and a recent study shows [more than 200 million people may be drinking PFAS-tainted water](#).

Some chemical companies have been accused of withholding information about PFAS’ health hazards, but details are now coming out. The chemical and manufacturing giant 3M recently reached a \$10.3 billion [settlement](#) with U.S. cities and towns to settle lawsuits over contaminated drinking water. The money will be used to clean up public water supplies.

Understanding what forever chemicals are, where they’re found and how to avoid them can help you stay safe and keep the environment clean.

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What Are PFAS?

PFAS stands for per- and polyfluoroalkyl substances. These include a large, complex group of synthetic chemicals used in consumer, commercial and industrial products.

According to Megan Liu, a science and policy manager at [Toxic Free Future](#), “All PFAS have a carbon fluorine bond that is the strongest bond in organic chemistry. That’s why they are super persistent and can easily move through groundwater and soil. It’s also what makes them toxic.”

PFAS were developed in the 1940s and widely used because of their resistance to water, stains and grease. Probably the most well-known example of a product with PFAS is DuPont’s [nonstick cookware](#) coated with Teflon, which was manufactured by 3M.

Teflon with PFAS was banned in 2014 because of its harmful health effects. [Teflon Reimagined](#), which is supposed to be more sustainable, is now being produced by Chemours, a spinoff of DuPont.

Where Are PFAS Found?

PFAS are also sometimes called “everywhere” chemicals because they are so prevalent. “Today they are still used in [consumer products](#), firefighting foam, packaging and building products,” Liu says.

Here are some specific product categories that may contain PFAS:

- **Clothing:** PFAS have been found in athletic and yoga clothes, stain-resistant fabrics and water-repellent items like Gore-Tex jackets.

- **Home goods:** Stain-resistant carpets and fabrics in items like linens, upholstery and bedding are treated with Scotchgard, Stainmaster and similar chemicals.
- **Cookware:** Non-stick cookware may still contain PFAS, so check the box and manufacturer's website.
- **Food packaging:** Takeout containers, wrappers, pizza boxes and microwave popcorn bags may be coated with PFAS.
- **Cosmetics:** Testing of foundation, concealer, mascara, eyeliner, lip balm, blush and nail polish found high levels of organic fluorine, an indicator of PFAS. The chemicals make cosmetics last longer and spread easily.
- **Personal care:** PFAS have also been found in some types of dental floss, helping it glide more easily between teeth.

How Could You Be Exposed to PFAS?



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Besides coming directly in contact with a product containing PFAS, you can be exposed to this class of chemicals in a number of ways that are out of your control.

- Drinking contaminated municipal water or private [well water](#);
- Consuming food grown or raised near places that used or made PFAS;
- Eating fish caught in water contaminated by PFAS;
- Eating food packaged in material containing PFAS;
- Living near sites where a PFAS release occurred;
- Working around or with PFAS, such as chemical manufacturing or fire-fighting foam;
- Breathing in dust tainted with PFAS from stain- and water-repellent used on home products.

Dangers of Forever Chemicals

Some PFAS bioaccumulate, or build up, over time. This means that the chemicals can end up in fish and other food sources that we consume, causing health concerns. They are also endocrine-disrupting

chemicals (EDCs), which interfere with our hormone system.

“There is a whole suite of harmful health effects including higher cholesterol, liver disease, reproductive harm like reduced birth rate and pregnancy hypertension,” Liu says. “Cancer is another big concern.”

Other dangers, according to the [United States Environmental Protection Agency \(EPA\)](#), include:

- Lessens the ability of the body's immune system to fight infections, including reduced vaccine response.
- Increased risk of some cancers, including prostate, kidney and testicular.
- Developmental effects or delays in children, including low birth weight, accelerated puberty, bone variations or behavioral changes.
- Increased risk of obesity.

How To Avoid Forever Chemicals



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PFAS are practically impossible to avoid. They're found in our [houses](#) and public buildings, and in the air, water and soil.

Julia Goldstein, Ph.D., founder of JLFG Communications and award-winning author of [Material Value: More Sustainable, Less Wasteful Manufacturing of Everything from Cell Phones to Cleaning Products](#), says the onus is on the consumer.

“There are thousands of different chemicals used in hundreds of products,” she says. “There are no labels that tell customers whether a product is safe. Many companies that make consumer products are still trying to figure out whether their own products contain these chemicals. Until the consumer-facing companies know, they can't disclose it even if they want to.”

Fortunately, there are some ways to keep PFAS at bay. Liu recommends “cleaning your [home](#) since chemicals can get into dust, leaving shoes at the door and washing hands often.”

Here are more steps you can take:

- Avoid clothing, furniture, bedding and other household items labeled stain- or water-resistant.
 - Evaluate clothing brands on the [Natural Resources Defense Council's PFAS in the Apparel Industry Scorecard](#) and [PFAS Central](#).
 - Check manufacturer websites for ingredient information. Sustainability pages are particularly helpful.
 - Cook with stainless steel, cast iron, glass or ceramic cookware instead of non-stick options.
 - Steer clear of food packaged in grease-proof bags and containers. Instead, use your own glass containers or encourage restaurants to switch to PFAS-free [BPI-certified](#) packaging.
 - Watch out for chemical names like "perfluor-," "polyfluor-," and "PTFE" in personal care products and cosmetics.
 - Contact the [Consumer Product Safety Commission's Consumer Ombudsman](#) with questions or concerns about specific products.
 - Find out if your water source has been tested for PFAS by contacting your local water utility.
 - Keep an eye out for companies banning PFAS. Currently, 32 retail chains with more than 150,000 stores have committed to eliminating or reducing PFAS in their products. Check [Toxic Free Future](#) for an up-to-date list.
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