

Are You Absorbing Toxins From Your Makeup?



A polished, perfectly put-together face can be a huge boost to your confidence, but a new study shows that many of the [cosmetics](#) that help achieve that look might also be harmful to your health.

In the United States and Canada, plenty of [beauty](#) products appear to contain high levels of per- and polyfluoroalkyl substances (PFAS), a potentially toxic class of chemicals linked to some serious health conditions, researchers report.

In particular, most waterproof mascaras, liquid lipsticks and foundations contained high levels of fluorine, an indicator that PFAS are in the product.

"Those three categories were more likely than others to have high fluorine," said researcher Tom Bruton, a senior scientist at the Green Science Policy Institute, an independent research and environmental advocacy organization in Berkeley, Calif.

The chemicals are used to make [cosmetics](#) more durable, and to make them spread better, Bruton explained. No company names were listed in the report, though the researchers said the problem is "widespread."

There are more than 4,700 different PFAS chemical compounds, researchers said. Since the 1950s, they have been widely used in a number of consumer products, including stain-repellent fabrics, nonstick cookware, polishes, waxes, paints and cleaning products, according to the U.S. Environmental Protection Agency.

Unfortunately, PFAS are considered "forever chemicals" because they don't naturally degrade, Bruton said. Instead, they accumulate in the bodies of humans and animals. It's believed that every single American has a detectable level of PFAS in their bodies.

Some PFAS chemicals have been shown to be toxic, potentially contributing to high [cholesterol levels](#), low infant birth weights, immune deficiencies and thyroid gland disruptions, according to the EPA.

PFAS accumulate

"The problem with these chemicals is they last a long time in the environment as well as in your body," said Dr. Maaike van Gerwen, an assistant professor in the Institute of Translational Epidemiology at Mount Sinai in New York City. "We do not know exactly what the harm is of exposure to very low levels of these chemicals over a very long period of time, because these are a relatively new kind of chemical."

For example, there are concerns that PFAS' effect on the thyroid could lead to [thyroid cancer](#), van Gerwen said.

Other possible health risks of PFAS include [kidney cancer](#), [testicular cancer](#) and [high blood pressure](#), the researchers added.







For this study, researchers purchased 231 different cosmetics products in the United States and Canada and tested them for fluorine, Bruton said.

"We found over half the products we tested contained elevated fluorine levels," Bruton said.

The cosmetic categories that had the highest percentage of 213 high fluorine products were foundations (63%), eye products (58%), mascaras (47%), and lip products (55%), the study found.

Here is a chart outlining the complete findings:

Cosmetic Categories and High Fluorine

	Product Category or Sub-Category	Number of Products Tested	Percentage of Products with High Fluorine
	All Lip Products (lipsticks, glosses, shadows, liners, shimmers, balms)	60	55%
	Liquid Lipstick	42	62%
	Foundations (liquids, creams)	43	63%
	Concealers	11	36%
	Other Face Products (powders, blush, bronzers, highlighters, primers, sprays) 	30	40%
	All Mascara	32	47%
	Waterproof Mascara	11	82%
	Other Eye Products (shadows, liners, creams, primers, pencils) 	43	58%
	All cosmetics tested	231	52%

Credit: University of Notre Dame

Even more concerning was that cosmetics containing high levels of fluorine more often than not failed to disclose any PFAS chemicals on their labels, Bruton noted.

Further analysis of 29 cosmetics with high fluorine levels revealed that they contained between four and 13 specific PFAS chemicals,

researchers found. However, only 1 of the 29 products listed PFAS as an ingredient on the product label.

"Even if a consumer is doing their due diligence and trying to avoid harmful chemicals by reading labels, our work is showing that these harmful chemicals are often not disclosed," Bruton said.

Despite this, Bruton recommends that consumers who want to limit their exposure to PFAS read the labels anyway, to at least avoid products where the chemicals are accurately listed.

High levels of fluorine were frequently found in products advertised as "long-lasting" and "wear-resistant," which could provide another clue for discerning consumers.

But in the end, there's not much consumers can do to solve the problem.

"It's important that the government step up to regulate ingredients in cosmetics with more stringency," Bruton said. "It's also time the cosmetics industry steps up and begins efforts to move away from this class of chemicals."

The U.S. laws governing cosmetics safety and labelling date back to 1938 and 1967, "which tells you something," Bruton said.

Published online June 15 in the journal *Environmental Science and Technology Letters*.