

Researchers urge reduced use of PFAS chemicals in consumer products

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Human exposure to unnecessary and potentially harmful chemicals could be greatly reduced if manufacturers add chemicals only when they are truly essential in terms of health, safety and functioning of society.

That's the conclusion of a study published today in *Environmental Science: Processes & Impacts*, a peer-reviewed journal published by the Royal Society of Chemistry.

In this study, the researchers proposed a framework based on the concept of "essential use" to determine whether a [chemical](#) is really needed in a particular application. They demonstrate the concept on a class of synthetic chemicals known as PFAS (per- and polyfluoroalkyl substances).

PFAS are used in many consumer goods because of their unique properties, including water and stain repellency. However, a growing number of scientists and [health professionals](#) are expressing concern about these chemicals since they persist for a very long time, seep into the water and soil, and may adversely impact humans and wildlife. Human health problems linked to certain PFAS exposure include kidney and [testicular cancer](#), liver malfunction, hypothyroidism, high cholesterol, ulcerative colitis, lower birth weight and size, obesity, and decreased immune response to vaccines.

The study classifies many uses of PFAS as "non-essential." For example, the study points out that it may be nice to have water-repelling surfer shorts, but in this instance, water repellency is not essential. Other products analyzed with the Essential Use Framework include [personal care products](#) and cosmetics, durable water repellency and stain resistance in textiles, food contact materials, medical devices, pharmaceuticals, laboratory supplies and ski waxes. Some uses may be regarded as essential in terms of health and safety, e.g., fire-fighting foams, but functional alternatives have been developed that can be substituted for PFASs.

"Our hope is the approach can inform and encourage manufacturers, retailers and end users to consider phasing out and substituting uses of

PFASs." said Ian Cousins of Stockholm University, lead author of the study and a world-leading researcher specializing in understanding the sources and exposure pathways of highly fluorinated chemicals. "A starting point would be the phase-out of the multiple non-essential uses of PFASs, which are driven primarily by market opportunity."

The article notes that some retailers and manufacturers are already taking voluntary measures to phase out the use of PFAS in their products. It suggests that the Essential Use Framework can be applied to other chemicals of concern.

More information: Ian T. Cousins et al, The concept of essential use for determining when uses of PFASs can be phased out, *Environmental Science: Processes & Impacts* (2019). [DOI: 10.1039/c9em00163h](https://doi.org/10.1039/c9em00163h)

Provided by Stockholm University

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