

Per- and Polyfluoroalkyl Substances (PFAS) and Your Health

PFAS and Their Health Effects



Statement on Potential Intersection between PFAS Exposure and COVID-19:

CDC/ATSDR understands that many of the communities we are engaged with are concerned about how PFAS exposure may affect their risk of COVID-19 infection. We agree that this is an important question.

CDC/ATSDR recognizes that exposure to high levels of PFAS may impact the immune system. There is evidence from human and animal studies that PFAS exposure may reduce antibody responses to vaccines (Grandjean et al., 2017, Looker et al., 2014), and may reduce infectious disease resistance (NTP, 2016). Because COVID-19 is a new public health concern, there is still much we don't know. More research is needed to understand how PFAS exposure may affect illness from COVID-19.

References:

1. Grandjean P, Heilmann C, Weihe P, et al. Estimated exposures to perfluorinated compounds in infancy predict attenuated vaccine antibody concentrations at age 5-years. *J Immunotoxicol.* 2017;14(1):188-195. doi:10.1080/1547691X.2017.1360968
2. Looker C, Luster MI, Calafat AM, et al. Influenza vaccine response in adults exposed to perfluorooctanoate and perfluorooctanesulfonate. *Toxicol Sci.* 2014;138(1):76-88. doi:10.1093/toxsci/kft269
3. NTP (National Toxicology Program). 2016. Monograph on Immunotoxicity Associated with Exposure to Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Research Triangle Park, NC: National Toxicology Program. https://ntp.niehs.nih.gov/ntp/ohat/pfoa_pfos/pfoa_pfosmonograph_508.pdf  

The potential for health effects from PFAS in humans is not well understood. PFOS, PFOA, PFHxS and PFNA have generally been studied more extensively than other PFAS. In general, animal studies have found that animals exposed to PFAS at high levels resulted in changes in the function of the liver, thyroid, pancreas and hormone levels.

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- [Understanding health effects](#)
- [How can I be exposed to PFAS?](#)
- [What are the health effects?](#)
- [Fact sheet](#)
- [Frequently asked questions \(Tox FAQs\)](#)
- [What are the chemicals in the PFAS group?](#)
[PFAS Family Tree](#)  [\[PDF – 249 KB\]](#) | [PFAS Family Tree \[PDF – 406 KB\]](#) (Spanish version)

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