



Soil collection, photo taken by ATSDR of ATSDR staff

Overview

The Agency for Toxic Substances and Disease Registry (ATSDR), in coordination with the U.S. Environmental Protection Agency (EPA), conducted environmental sampling to evaluate levels of per- and polyfluoroalkyl substances (PFAS) in indoor and outdoor environmental samples that may be contributing to elevated levels of PFAS in people's blood. The environmental sampling was conducted in Westfield, Hampden County, MA and New Castle County, DE.

This fact sheet provides information on the collection of samples and results of the sampling.

Background and Current Sampling Effort



In 2019-2020, ATSDR conducted exposure assessments (EAs) evaluating exposure to PFAS in communities near current or former military bases that are known to have had PFAS in their drinking water. The

EAs measured levels of PFAS in blood and urine as well as in settled dust and tap water from a subset of homes.

In 2020, ATSDR entered into an agreement with EPA to collect additional environmental samples at two of the EA sites, one in Westfield, MA and one in New Castle, DE, to identify potential non-drinking water contributors to PFAS in the body.

The purpose of collecting the additional samples was to determine if PFAS were present and to learn more about exposures resulting from non-drinking water sources of PFAS. With this new environmental sampling, a new questionnaire, and the blood sampling previously done in 2019, we can learn more about factors potentially impacting PFAS in people's blood.

Who participated in the PFAS environmental sampling?

Households who participated in the PFAS EAs in MA and DE were eligible to participate. ATSDR tested a total of 51 households from Westfield, MA and 41 households from New Castle, DE.

What types of environmental samples were collected?

ATSDR and EPA collected settled dust samples from all households using a filter system and administered both a household and personal exposure questionnaire.

In addition, the following samples were collected from 18 homes in Westfield, MA, and 10 homes in New Castle, DE:

- Indoor air
- Dust from home vacuum cleaner
- Wet surface wipes – kitchen and closet area
- Soil
- Silicone wristbands worn for a week by one member of each household

In the community:

- Outdoor air at a central location
- Locally grown produce

All samples were analyzed in the laboratory for a list of PFAS, including seven PFAS that were found in serum during the PFAS EA: PFHxS, PFOS, PFOS, PFNA, PFDA, PFUnA, and MeFOSAA.

Federal and state regulations or guidelines are not available for PFAS in any of the media that were sampled, except for soil, for which a standard method is not available. No additional blood samples were collected.



The seven PFAS found in serum during the PFAS EA are perfluorohexanesulfonic acid (PFHxS), perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA), perfluoroundecanoic acid (PFUnA), and 2-(N-methyl-perfluorooctane sulfonamido) acetic acid (MeFOSAA).



Collection of settled dust sample, photo taken by ATSDR of ATSDR staff

Conclusions

- The seven PFAS compounds found in serum during the PFAS exposure assessments were found in household samples.
- One PFAS (MeFOSAA) in settled dust was associated with levels in serum in both MA and DE. This means that when the level of MeFOSAA increased in settled dust, higher levels were also found in serum. In DE only, PFOS in settled dust was also associated with serum PFOS.
- PFAS compounds in addition to the seven PFAS found in the serum were detected in all types of household samples tested.

Recommendations

- PFAS are found in many different consumer products in the home. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772.
- Follow the advice of your and your child's health care provider and the recommendations for checkups, vaccinations, prenatal care, and health screening tests as well as prenatal care.
- For additional information about environmental exposures and children's health, contact the Pediatric Environmental Health Specialty Units, a nationwide network of experts in reproductive and children's environmental health (<https://www.pehsu.net/>).
- Discuss any health concerns or symptoms and share results of PFAS blood testing with your health care provider.

Resources

- For additional information about PFAS from ATSDR, please visit: <http://www.atsdr.cdc.gov/pfas/index.html>.
- To learn about steps you may take to reduce your risk of exposure to PFAS, please visit: <https://www.epa.gov/pfas/meaningful-and-achievable-steps-you-can-take-reduce-your-risk>.
- For information for clinicians on potential health effects associated with PFAS, please visit: <https://www.atsdr.cdc.gov/pfas/resources/pfas-information-for-clinicians.html>.
- For additional information about PFAS from the U.S. Environmental Protection Agency, please visit: <https://www.epa.gov/PFAS>.
- For information from EPA on human health and environmental risks of PFAS, please visit: <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas>.

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