

## **PFAS-REACH (Research, Education, and Action for Community Health) Frequently Asked Questions**

### ***What is PFAS-REACH?***

PFAS-REACH (Research, Education, and Action for Community Health) is a five-year project funded by a grant from the National Institute of Environmental Health Sciences (NIEHS), which is part of the National Institutes of Health. It was launched in September 2018 and is being funded through NIEHS's "Research to Action" program, which brings together scientists and community partners to collaborate on research studies that address community concerns. One of the major goals of PFAS-REACH is to evaluate immune system effects in children (ages 4 to 6) in communities with prior PFAS water contamination.

### ***What are PFASs?***

PFASs (also known as per- and polyfluoroalkyl substances) are used by manufacturers to make products non-stick, waterproof, and stain-resistant. These chemicals can be found in a wide range of consumer products including food packaging, non-stick cookware, waterproof clothing, and stain-resistant carpets.

### ***How do PFASs get into the environment?***

High levels of PFASs have been found in areas near manufacturing plants where PFAS chemicals have been produced and near industrial sites where these chemicals have been incorporated into the manufacturing of other products. High levels have also been found in groundwater and surface waters close to military bases and airports where certain firefighting foams have been used for fighting and training for fuel fires. PFASs can also get released into the environment from wastewater treatment plants, landfills, and the land application of treated sewage sludge (biosolids).

### ***Who is conducting the study?***

The project is being led by Silent Spring Institute in collaboration with Northeastern University and Michigan State University. The main community partner organizations are Testing for Pease, Massachusetts Breast Cancer Coalition, and Toxics Action Center. Over the course of study, we'll also be working with other academic partners, advocacy groups in New Hampshire and on Cape Cod, and affected communities across the US.

### ***What will your study involve?***

Our study is focused on two communities where public drinking water wells have been contaminated with PFASs from firefighting foams related to fire training activities. One of these communities is based at the Pease International Tradeport, formerly Pease Air Force Base, in Portsmouth, NH. The other community is in Hyannis, on Cape Cod, Massachusetts. Both water systems have taken steps to bring the tap water below EPA guideline levels, but many people were exposed to the water when PFAS levels were high, and there are concerns about long-term health effects. In addition, certain PFAS chemicals can remain in the body for years.

Starting in the spring of 2019, we will conduct blood testing in 120 children, ages 4 to 6, who have not yet had their final DTaP booster shot and who may have been exposed to PFAS-contaminated drinking water, either directly or through their mother. Since PFASs can be passed along during pregnancy and through breastmilk, children can be exposed through their mothers as well.

We will collect a single blood sample from children one month after they receive their final DTaP booster. We will measure the children's blood levels of PFASs, as well as their diphtheria and tetanus antibody levels. Antibody levels indicate how well a child's immune system responds to immunization. Since antibody levels change over time, we are collecting our measurements one month after the DTaP vaccination in order to get the best measure of the boost in antibody levels from the vaccine. We'll also ask parents to fill out a questionnaire about the time they've spent at Pease and other possible sources of exposures to PFASs.

***Why are you studying immune system effects in young children?***

Studies in laboratory animals and exposed human populations have found links between PFAS exposures and immunotoxicity. Studies of children in the Faroe Islands, by Dr. Philippe Grandjean at Harvard University, suggest the immune systems of children may be especially sensitive to harmful effects of PFAS exposure. His research has found that children with higher PFAS levels in their blood, from their diet, may have less of an antibody boost in response to DTaP vaccinations. This is worrisome because this means that vaccines may be less effective in children with high exposures, and it may also indicate other effects on the immune system. Ours will be the first study to look for these same kinds of effects in children exposed to PFASs through drinking water contaminated by firefighting foams.

***What if my child has already received their final DTaP booster?***

Older children may be eligible for the Agency for Toxic Substances and Disease Registry (ATSDR) health study, which is also starting next year.

***How is your study different from the national health study by ATSDR on PFASs, which begins at Pease in 2019?***

Our study will complement the national health study on PFASs led by ATSDR, which will include mainly older children and adults exposed to PFAS-contaminated drinking water at the Tradeport. The ATSDR study will examine a broader range of health effects, and recruitment will be focused, at least initially, on participants in the PFAS blood testing program conducted by the New Hampshire Department of Health and Human Services that began in 2015.

Our community partner Testing for Pease played a critical role in engaging with ATSDR and helping to establish the Community Assistance Panel that supported establishing Pease as the location for the first phase of the multi-site study. We aim to collaborate with ATSDR to share information and coordinate collection of data and blood samples to the extent possible in order to make the process as simple as possible for our participants.

***What are some of the other goals of the PFAS-REACH?***

The PFAS-REACH project has two other components. One is to develop an innovative online resource center, called the "PFAS Exchange," with data interpretation tools, tap water testing, and educational materials for affected communities and other stakeholders. The other is to conduct a social science

analysis of affected communities to assess individual, family, and community-level experiences of residents in areas impacted by PFAS-contaminated drinking water.

***What other health effects have been linked to PFAS exposures?***

Most of the information that we have about PFAS health effects comes from studies of two specific PFAS chemicals: PFOS and PFOA. These include studies of laboratory animals and exposed human populations. These studies show clear links between PFAS exposure and cancer, thyroid disease, liver toxicity, and elevated cholesterol. For most other PFASs, including many of the PFASs in firefighting foams, we have little toxicity information.

***How can I learn more about the study?***

A press release announcing the launch of PFAS-REACH is available [online](#). You can also contact the study team by emailing [PFAS-REACH@silentspring.org](mailto:PFAS-REACH@silentspring.org) to receive updates about the study. Early next year, we'll be launching a project website. So stay tuned!

*\* This document was created for community information only and should not be construed as recruitment material. Formal recruitment materials will be forthcoming.*