

# Supplemental PFAS Exposure Investigation at Two PFAS Exposure Assessment Sites

## Transcripts from the Virtual Public Meetings:

- 12/17 in New Castle DE
- 12/18 in Westfield MA

### Questions were answered by:

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### Resources shared during the public meetings:

- PFAS: Information for Clinicians Factsheet: <https://atsdr.cdc.gov/media/pdfs/2024/07/ATSDR-PFAS-Information-for-Clinicians.pdf>
- How PFAS Impacts Your Health: <https://atsdr.cdc.gov/pfas/about/health-effects.html>
- National Academies of Science, Engineering and Medicine (NASEM) PFAS report <https://www.nationalacademies.org/our-work/guidance-on-pfas-testing-and-health-outcomes>
- PFAS Multi-Site Study: <https://atsdr.cdc.gov/pfas/health-studies/multi-site-study.html>
- Pediatric Environmental Health Specialty Units (PEHSU): <https://www.atsdr.cdc.gov/environmental-medicine/pehsu/>
- Toxicological Profile: <https://www.atsdr.cdc.gov/toxicological-profiles/about/>

<b>Public Meeting Location</b>	<b>Questions Asked by the Meeting Participants</b>	<b>Answer</b>
<b>DE (12/17/24)</b>	Will additional studies be conducted in this area in the future?	<p>Karen Scruton, ATSDR: Thank you for that question. I know there's a lot of interest in PFAS, and at this time we don't have any additional studies planned in New Castle, Delaware. We did an exposure assessment, and the exposure investigation here in Newcastle, as well as in Westfield, Massachusetts. Although we don't have anything else planned in these communities, ATSDR does have ongoing health studies throughout the country. The health studies are called the multi-site study or MSS (a link to the MSS website is provided above). ATSDR has finished gathering the information and now they're analyzing the data. The goal of the health studies is to determine whether exposure may be associated with particular health effects.</p>
	Will PFAS in blood be studied again? I'm sorry, when did you say those results will be available?	<p>Karen Scruton, ATSDR: Thank you for that question. I'm assuming that you're asking whether it will be tested again in the New Castle community. Again, we don't have any follow-up studies planned for the New Castle area, but what we learn from the multi-site health study will help other communities, even though they're not included in the study. We anticipate that the multi-site study results will be able to provide information to people throughout the country. The multi-site study was conducted throughout the country with thousands of participants.</p> <p>We anticipate that manuscripts containing results will begin to be released sometime in 2025.</p>

	Can you share information about the nationwide study you mentioned?	Dr. Michelle Zeager, ATSDR: As indicated, the data analysis is ongoing for the multi-site health study. There are a number of different biological samples that have been collected from the participants of the study across multiple age ranges; it should be noted that both children and adults were part of the study. The goal of this particular study is to see if there are associations between PFAS and a number of different health outcomes.
	Is ATSDR providing PFAS education to clinicians through formal training or at conferences? Anecdotally, many one-off interactions with clinicians reflect a lack of awareness from clinicians.	Dr. Michelle Zeager, ATSDR: I'm not sure that there are any scheduled educational events right now. We have done this type of presentation to healthcare providers in the past, and the Pediatric Environmental Health Specialty Unit (PEHSU) has done these types of presentations as well. At times, we work on presentations for healthcare professionals with the PEHSU. People may contact the regional director, Michael Byrns (contact information above), if you want to discuss setting up an educational presentation for physicians. These presentations are usually called Grand Rounds.
	Since most health insurance companies do not cover the cost of testing blood for PFAS, how can the public sign up to participate in a study in the future? is that possible and is the information on the multi-site web page?	Dr. Michelle Zeager, ATSDR: The recruitment for the multi-site study is closed at this point, and I am not aware that they'll be recruiting additional participants for that study.  Karen Scruton, ATSDR: If a blood sample is taken for PFAS, it's best done in the setting of a study, either an exposure assessment or the multi-site study, instead of just an individual blood sample. We know that individual blood testing is available, but we don't know exactly what the concentration in your blood means for your health at this point.
<b>MA (12/18/24)</b>	If the strong participation in Westfield was predicated on the promise of the potential of data sharing (that's on video from July 2019), and the ATSDR/CDC	Karen Scruton, ATSDR: ATSDR and EPA take the privacy of our participants very seriously and understand that the PFAS data collected during this exposure

	<p>refuses to share the data citing “exemption 6”, what explanation do you offer to Westfield residents who were turned from engaged participants to exploited lab rats by your decision to gatekeep our data? Why, after you found correlation between drinking water and blood serum PFAS in Westfield participants, did you not sound the alarm about our population’s higher exposure to immune system toxicants? If residents who asked ATSDR about advice concerning gestation and breastfeeding have had negative medical outcomes related to the advice received, to whom should they report these outcomes, or does no one at ATSDR/CDC care about the outcomes in the communities they have studied? If you do not allow the communities to work with the de-identified data from the exposure assessments, what was all this for???</p>	<p>investigation are of interest to the Delaware and Massachusetts communities. Summary data are available in both the PFAS exposure assessment and the PFAS exposure investigation reports. The appendices to the reports provide detailed information on how ATSDR and EPA evaluated the data and provides the results of the statistical analyses used as the basis for the conclusions.</p> <p>The consent form that was signed by participants to grant ATSDR permission to collect and analyze the samples indicated that individual data can be shared with local, state, and federal public health and environmental agencies, upon request. Even if we do share data with public health or environmental agencies, we will not share any personal information, such as participants’ names or addresses. If a member of the community has questions about information provided in the appendices, we are happy to discuss the analyses with them individually.</p> <p>Dr. Michelle Zeager, ATSDR: In terms of the concern regarding breastfeeding women, we do know from research studies that there are certain PFAS that have been found to be associated with certain health effects. We also know that PFAS can be transmitted through breast milk and to a developing baby from the mom to the baby through the placenta. What we don't know is what level of PFAS may be related to any specific type of health problem. So, even if we measured a PFAS level in an infant, we don't know what level of PFAS may be associated with a particular health problem.</p> <p>In addition, there are some people that can be exposed to PFAS and have absolutely no symptoms at all, people</p>
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		<p>who can live in communities with high levels of PFAS in the environment and do not know if they are exposed. And then there are people who can have different symptoms of different illnesses, and it may or may not be related to any type of environmental exposure. We recommend people discuss their concerns with their healthcare provider who can discuss ways to reduce their exposure to PFAS and navigate an individual care plan for that particular concerned person.</p> <p>We know that everybody has individual factors that may play into their overall health as well, including personal habits, family history, genetics, baseline health conditions, and other environmental exposures. I know this is a long answer for a very complicated question, but we are not able to determine whether one individual's health problem is caused by exposure to a PFAS. We recommend that healthcare professionals refer to the Information for Clinicians document (website link above).</p>
	<p>Is there a list of health concerns that can be caused by PFAS exposure... cancers, etc.?</p>	<p>Dr. Michelle Zeager, ATSDR: To reiterate, we do know from research studies that there are certain health effects that have been associated with exposures to PFAS. On our website, we do have a list of those health conditions that have been found to have associations with PFAS exposure (website listed above). We don't use the term "causative" because we don't know if the exposure to the PFAS definitively caused the health problem.</p> <p>We also have what is called the PFAS Toxicological Profile (website link above), that does a deeper dive into the science and looks at the studies that are used to draw some of those conclusions about associations of health outcomes and PFAS exposure.</p>

		<p>Some of the things that we do know are that there's strong evidence of an association between PFAS exposure and an increase in cholesterol, elevated liver enzymes, and a lower antibody response to certain types of vaccines. Some PFAS have been associated in some studies with small decreases in birth weight and with higher blood pressure in pregnancy. In terms of cancer, research has shown that there may be an association with kidney cancers and testicular cancers. But, again, we cannot say that PFAS exposure definitively caused a particular health outcome.</p> <p>Karen Scruton, ATSDR: I just wanted to bring up that ATSDR does have a multi-site health study that is ongoing. The health study was conducted at multiple sites throughout the U.S., in collaboration with 7 cooperative agreement partners to better understand how PFAS exposure may result in impacts to human health. Recruitment for the multi-site study has closed and data analysis is ongoing. The multi-site study will evaluate blood levels of PFAS along with indicators of health outcomes. It also conducted a neurodevelopmental evaluation for children.</p> <p>A release date for the manuscript describing the study cohort for the multi-site health study has not been finalized, but we do anticipate a journal publication in 2025. If you would like to receive a copy of the journal publication on the multi-site health study, please email the PFAS mailbox that <a href="mailto:PFAS@cdc.gov">PFAS@cdc.gov</a>.</p>
	<p>Does ATSDR do these presentations to physicians?</p>	<p>Dr. Michelle Zeager, ATSDR: ATSDR has participated in presentations with respect to PFAS and other environmental contaminants with healthcare provider groups. We've done this in conjunction with other entities as well, namely, the</p>

		<p>Pediatric Environmental Health Specialty Unit (PEHSU). This is a group of experts and that work around the country with their expertise in reproductive health and pediatric, adolescent, and young adult health with respect to exposure to environmental chemicals. We use the term “grand rounds” for these types of presentations. One of the goals of the grand rounds is to educate clinicians on a subject that they may not be familiar with in their everyday practice, and to provide them with tools to help navigate these difficult subjects with their patients. We can speak one on one with physicians after these presentations.</p> <p>We do encourage people to take the PFAS Information for Clinicians to their physicians (website provided above) and share that information with them to help navigate this difficult topic. There's a lot of information, and what these resources can do is help physicians better understand these exposures and the health effects from these exposures. Physicians can use the information to identify some of these exposures with their patients and recommend how to reduce the exposures. Physicians can then walk through the clinical management of exposure because each individual's health history is going to be a little bit different and dictate the course of action a little bit differently.</p>
	<p>Perhaps you could suggest the checkbox to the physicians who practice medicine in communities that had very high concentrations!</p>	<p>Dr. Michelle Zeager, ATSDR: That's a great question but a difficult question to answer. I think we all are trying to be cognizant of the environmental exposures that we come across, and I think that the conversation starts with the physician and their patient. If a patient is concerned about particular exposures in their environment, then the conversation between the clinician and the patient can uncover some of these</p>

		<p>exposures. Whether this should be a particular question on a medical form is a difficult question to answer. Concerns about environmental exposures is a good topic to bring up in any health maintenance visit.</p>
	<p>What is the number for level of concern... I think you said 70... per trillion... can you expand and clarify?</p>	<p>Karen Scruton, ATSDR: The 70 parts per trillion (ppt) was the EPA's health advisory when the exposure assessments were conducted in 2019, and that's now dropped down to between 4 and 10 parts per trillion for 5 of the individual PFAS, along with a method to regulate a mixture of PFAS. These PFAS are regulated with maximum contaminant levels or MCLs from EPA. Therefore, the 70 parts per trillion is obsolete but it was in place when the exposure assessments were completed.</p> <p>Dr. Elaine Cohen Hubal, EPA: I want to clarify that that 70 ppt level was in drinking water. And when ATSDR sampled the drinking water in your homes, the drinking water had been remediated, meaning it had already been cleaned up. So, it wasn't above the health advisory.</p> <p>Karen Scruton, ATSDR: To clarify, Elaine Cohen Hubal is our EPA Principal Investigator. She and I worked together on this exposure investigation.</p> <p>And yes, that's absolutely correct for the exposure assessments. At some point in the past, the drinking water at the exposure assessment locations had been above 70 parts per trillion (PFOA and PFOS combined), but by the time we sampled the blood of our participants, the water had been remediated, usually for several years before we conducted the exposure assessment. Since PFAS are persistent in the body, however, we still did find PFAS in the blood serum of our participants even though exposure had stopped.</p>

		<p>Dr. Elaine Cohen Hubal, EPA: Another point to clarify is the MCL health levels set in drinking water are based on very complicated analyses and calculations that consider how much drinking water somebody consumes over a time period and how your body processes the chemical of concern. Therefore, it's not a 1-to-1 relationship between PFAS levels in the water and in your blood.</p>
	<p>Did you look and/or find correlations of PFAS other than with settled dust? Were the correlations you observed consistent or inconsistent with previous reports?</p>	<p>Karen Scruton, ATSDR: That's a great question. We did focus on settled dust because that was our largest data set. We looked at settled dust in every household, and so we had a much larger data set for comparison to the serum samples than for other media we sampled. In Massachusetts we had 18 homes where we did the additional robust sampling. Most of the time we didn't have enough samples from the non-settled dust media to evaluate whether there may be a correlation between the media and the serum levels. Therefore, we focused on the settled dust because that was our largest data set.</p> <p>Dr. Elaine Cohen Hubal, EPA: The second part of that question was, were the results similar in other studies? There are quite a few studies now, and more and more every day, showing that PFAS are being found in dust in homes all over the country, and there are correlations between certain PFAS in house dust and levels in serum. So, that this is not unique to this study and this community.</p>
	<p>What are the numbers in blood test that caused concern?</p>	<p>Dr. Michelle Zeager, ATSDR: ATSDR has not developed health-based screening levels for blood. What that means is we have not developed reference ranges for specific PFAS that indicate that there will be a health-based outcome. There is additional information available from the</p>

		<p>National Academies of Science, Engineering and Medicine (NASEM) that did consider this question (website reference above). They did an evaluation of the human health effects based on the literature and have come up with some additional recommendations based on PFAS as a class. ATSDR, however, has not developed health-based screening levels for blood testing because we don't definitively know what level in the blood may be associated with a particular health effect.</p>