



Newsletter

December 2021 | Issue 5

A North Carolina research study assessing exposure to GenX and related chemicals in people living in the Cape Fear River Basin.

From the Principal Investigator, Dr. Jane Hoppin

Dear GenX Exposure Study Participants,

Thanks to all of you for joining the study. The pandemic made it difficult to recruit people for the study and I'm grateful to all of you. With your involvement, we will be able to learn how PFAS exposures have influenced the health of individuals in the Cape Fear River Basin. I appreciate the time you took to participate and hope to be able to answer some of your questions about PFAS and health over time.

From November 2020 until November 2021, we recruited almost 1000 participants throughout the Cape Fear River Basin including participants from Pittsboro, Fayetteville, Wilmington, and Brunswick County. We will have completed the clinical analyses of your samples by the end of the year. We hope to have your PFAS blood results to you by Spring 2022. With these results, we will start our statistical analyses to understand potential associations of PFAS and health. We will continue to keep you updated on our progress through these newsletters.

In November 2021, we shared the February 2019 blood results with the Fayetteville study participants. You can find an example of the latest report back letter, and all of our other letters, on the "[Communicating Results](#)" page of our website: genxstudy.ncsu.edu. We have also shared the overall results with your elected officials, public health departments, and state regulatory agencies.

Please check our website for recent updates from the study. If you have any questions or concerns, feel free to contact us at genx-exposure-study@ncsu.edu or 855-854-2641.

I wish you all the best for a peaceful and calm 2022,

Jane Hoppin



New information on how long GenX lasts in the body

GenX is just one of many chemicals in the PFAS family. We know that different PFAS chemicals stay in the body for different lengths of time. Legacy PFAS such as PFOA and PFOS are known to stay in the body for years. When we started the GenX Exposure Study, no information was available about how long GenX might stay in the body.

When measuring for how long chemicals stay in the body, scientists consider how long it takes for half of the total amount of a chemical to leave the body. This is referred to as the “half-life” of the chemical. Some chemicals like alcohol have very short half-lives, while other chemicals such as DDT have half-lives of decades or more.

This year, the European Chemical Agency (ECHA) published results on levels of GenX in blood from 25 industrial workers (link: bit.ly/PFASECHA). They found the half-life of GenX in humans was 81 hours.

What does that mean for the study?

This information on the half-life of GenX helps explain why we did not find GenX in the blood of people we tested so far. It also means that we will only be able to measure GenX in people who have just been exposed to GenX. It does not mean that GenX will not have health effects, only that we cannot use blood levels of GenX to assess long term exposure. We will be trying to use historic water level information and your residential history to help estimate long term exposure.

COVID-19 and PFAS

PFAS are related to a variety of human health effects, including negative impacts to the immune system. The immune system protects against diseases including viruses like COVID-19.

One example of the way that PFAS could affect the immune system is to decrease the immune system’s ability to create antibodies. Antibodies help fight against viruses like COVID-19. Both human and animal studies have shown that PFAS impact the immune system’s capacity to make antibodies (link: bit.ly/PFASimmune).

In the first study of its kind, researchers in Denmark looked at the relationship between PFAS levels in the blood and COVID-19 severity (link: bit.ly/PFASCOVID). Researchers identified 323 people who were diagnosed with COVID-19 and measured their blood for five different PFAS. One PFAS (PFBA) was related to an increased risk of more severe COVID-19. Previous work showed that PFBA accumulates in people’s lungs, one of the organs most affected by COVID-19.

Because COVID-19 is so new, we have very little information on the relationship between PFAS and COVID-19. The GenX Exposure Study is trying to answer questions about PFAS and COVID-19 in our community.

To learn more about PFAS and COVID-19:

- [Statement on Potential Intersection between PFAS Exposure and COVID-19](#). ATSDR, 2020.
- [Severity of COVID-19 at elevated exposure to perfluorinated alkylates](#). Grandjean et al., 2020.
- [Could PFAS exposure impact your response to COVID-19?](#) NC State Center for Environmental and Health Effects of PFAS, 2021.