

Investigating PFAS health effects in a highly exposed population: GenX Study in North Carolina

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Evaluation of the human health effects of PFAS is challenging. People are exposed to a complex mixture of PFAS with differing toxicity. In 2017, we started working with community partners in Wilmington and Fayetteville, North Carolina, to characterize a unique set PFAS exposures resulting from discharge of chemical manufacturing byproducts, including GenX, to the Cape Fear River, the drinking water source for Wilmington, NC. Blood sampling results from Wilmington residents showed not only the presence of novel fluoroethers (Nafion byproduct 2, PFO4DoA, PFO5DoA, but not GenX) in the blood of nearly all residents, but also significantly elevated levels of legacy PFAS such as PFOA, PFOS, and PFHxS compared to the US population. Overall, ~25% of PFAS burden was related to the novel fluoroethers. Now funded through the Superfund program, we have expanded the study further up the Cape Fear River and are evaluating the potential human health effects related to these exposures. This talk will focus on how exposure levels in our population relate to the values in the NASEM report and the health outcomes that we are currently evaluating in our complex exposure setting.