

# EXPOSURE TO PERFLUOROCTANOIC ACID THROUGH CONSUMPTION OF OHIO RIVER WATER

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**Background and Aims:** Perfluorooctanoic acid (PFOA) is used in the production of stain and grease-resistant coatings; the human health effects of PFOA exposure are not well understood. An industrial plant in Parkersburg, WV discharged PFOA and other polyfluoroalkyl compounds (PFCs) into the Ohio River from 1980 to 2004. Residents of communities near Parkersburg and girls living in the Greater Cincinnati area have serum PFOA concentrations higher than general population levels. This study examined PFOA exposure in communities along the Ohio River between Parkersburg and Cincinnati.

**Methods:** Participants recruited from Huntington, WV, Portsmouth, OH and Fort Thomas, KY in 2009 and 2010 provided 15-mL blood samples to measure PFC concentrations and clinical parameters and answered questions about water consumption, health effects, and residential history. Drinking water sources were identified for each community through records searches and meetings with utilities. Associations between serum PFOA concentration and recruitment site, cumulative years drinking Ohio River water, self-reported daily tap water consumption, age and gender were analyzed using ANCOVA.

**Results:** Serum has been analyzed for 193 participants from Huntington, WV (N=74), Portsmouth, OH (N=90), and Fort Thomas, KY (N=29); 61 additional samples are currently being analyzed. PFOA concentrations range from 0.4ng/mL to 62.7ng/mL (median 9.7ng/mL). Median serum PFOA concentrations for each site were greater than the 2007-2008 NHANES median (4.30 ng/mL). Preliminary analysis indicated a significant correlation between serum PFOA concentration and the cumulative number of years the participant used Ohio River water; residents with two or more years consuming Ohio River water had higher serum PFOA concentrations than residents who used other water sources.

**Conclusions:** These findings suggest that communities along the Ohio River between Parkersburg and Cincinnati are exposed to PFOA and the major source is drinking water drawn from the Ohio River.

*The findings and conclusions in this poster have not been formally disseminated by the Centers for Disease Control and Prevention and should not be construed to represent any agency determination or policy.*