

Petriello, M. C., Mottaleb, M. A., Serio, T. C., Balyan, B., Cave, M. C., Pavuk, M., Birnbaum, L. S., & Morris, A. J. (2022). Serum concentrations of legacy and emerging per- and polyfluoroalkyl substances in the Anniston Community Health Surveys (ACHS I and ACHS II). *Environment International*, 158, 106907. <https://doi.org/10.1016/j.envint.2021.106907>

Definitions

- **PFAS:** Per- and polyfluoroalkyl substances, a group of man-made chemicals found in many consumer products.
- **Legacy PFAS:** Older types of PFAS that have been in use for many years.
- **Emerging PFAS:** Newer types of PFAS that have been developed as alternatives to legacy PFAS.
- **Biomonitoring:** Measuring chemicals in people's bodies to assess exposure levels.

Key Findings

- Levels of PFAS in the blood of Anniston residents decreased by about 50% from 2005-2007 to 2014.
- Despite the decrease, levels of certain PFAS, like PFOS and PFNA, were still higher in Anniston residents compared to the general US population.
- The study showed changes in how PFAS levels related to other pollutants over time.

Introduction

This study investigates the levels of PFAS in residents of Anniston, Alabama, over time. PFAS are chemicals found in many products and are known to cause health problems. The research aims to compare levels of these chemicals in the community over a period and see how they relate to other pollutants.

Main Content

Background

Residents of Anniston, Alabama, were exposed to high levels of harmful chemicals, including PFAS, due to industrial activities. PFAS are used in many everyday products and can stay in the environment and human body for a long time.

Methods

- **Study Population:** Blood samples were collected from residents in two phases: ACHS I (2005-2007) and ACHS II (2014).

- **PFAS Measurement:** Eight different PFAS were measured in the blood using advanced laboratory techniques.
- **Data Analysis:** Statistical methods were used to compare PFAS levels over time and to compare these levels with national averages.

Results

- **PFAS Levels Over Time:**
 - PFOS levels decreased from 71.1 ng/mL in ACHS I to 34.7 ng/mL in ACHS II.
 - PFOA levels decreased from 2.16 ng/mL to 1.16 ng/mL.
 - PFNA levels decreased from 1.69 ng/mL to 1.04 ng/mL.
- **Comparison with National Data:** PFOS levels in Anniston were more than three times higher than national averages in both time periods.
- **Correlation with Other Pollutants:** In ACHS II, PFAS were more closely related to polybrominated diphenyl ethers (PBDEs), while in ACHS I, they were more related to industrial chemicals like PCBs.

Conclusion

The study shows that while PFAS levels in Anniston residents have decreased over time, they remain higher than the national average. The findings highlight the ongoing impact of industrial pollution and the importance of monitoring these chemicals to protect public health. Future research should focus on identifying sources of exposure and finding ways to reduce it.

Word Count: 406

This summary was generated July 2024 by ChatGPT4.o and has not been reviewed for accuracy. This summary should not be relied on to guide health-related behavior and should not be reported in news media as established information. Please refer to the original journal publication listed in the hyperlink on the first page to validate representations made here. This summary will be updated once an expert review is complete.