

Lead exposure found to affect fertility rates

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Over the last few years, Flint, Michigan, has been in the news due to findings related to lead in its water supply. New research that examined the impact of exposure to lead (in the air and topsoil) on fertility in the United States has found that exposure matters for both women and men. It is the first study to find causal evidence of the relationship between lead exposure and fertility rates in the 1980s and mid-2000s.

The study, by researchers at Carnegie Mellon University, is published as a working paper by the *National Bureau of Economic Research*.

"Until now, we have lacked causal evidence of the effects of [lead exposure](#)," explains Karen Clay, professor of economics and [public policy](#) at Carnegie Mellon University's Heinz College of Information Systems and Public Policy, who led the study. "While many people have been focused on lead in water because of Flint or lead in paint because of public service campaigns, lead in the air and in the soil also deserves significant attention. Lead is an underappreciated environmental toxin, and we need to address this issue through cleanup efforts and solutions that focus on improving air quality and reducing lead in soil."

The researchers looked at U.S. Vital Statistics data on fertility, Environmental Protection Agency data for 1978-88 for airborne lead (covering more than a third of the U.S. population), and U.S. Geological Survey data in the 2000s on lead in topsoil (covering more than two-thirds of the U.S. population).

The study found that increased exposure to lead lowered the general

fertility rate for women of childbearing age (15 to 44 years). In 1978-88, reductions in airborne lead, which were largely due to regulations such as the Clean Air Act, boosted [fertility rates](#), and in the 2000s, higher levels of lead in topsoil decreased fertility rates.

"Because fertility has implications for economic activity, factors that decrease fertility are of significant policy concern, as well as of concern to individuals and society," explains Edson Severnini, assistant professor of economics and public [policy](#) at Heinz College, who coauthored the paper. "Lead may continue to impair fertility today: Many Americans may not be aware that they live in counties with high lead levels because of highways, old manufacturing centers, or airborne lead that has landed on the soil. Our findings could help reduce this [exposure](#)."

More information: Summarized from a working paper by the *National Bureau of Economic Research*, Toxic Truth: Lead and Fertility by Clay, K, Portnykh, M, and Severnini, E (Carnegie Mellon University). Copyright 2018. www.nber.org/papers/w24607

Provided by Carnegie Mellon University

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