

Multigenerational Lead Exposure: Our Children's Grandchildren at Risk Today



The Center for Urban Responses to Environmental Stressors community engagement team is charged with getting scientific information into the hands of those who may benefit from it. When people have information, they can use that knowledge to make better choices.

Anyone who lives in a home built before 1978 is at risk for lead poisoning.



Our materials are made possible through funding from the National Institute of Environmental Health Sciences #P30 ES020957

Research Reveals Pregnant Women Exposed to Lead Impacts the DNA of Grandchildren

Dr. Doug Ruden has been studying lead for the past 20 years, most recently focused on the impact of exposure to a fetus. Studies have shown that exposure to lead can impact a person, but Doug wanted to learn what it means for developing babies in their mothers womb.



“What we found surprised us,” Doug said. “We were looking for signs that the baby was impacted by the lead exposure, not just the mother.” His team examined blood collected from 35 women as well as their babies. They found that a woman’s lead level influences the neonatal blood of her baby but also alters their DNA. Doug told us,

“This is the first study that points to the epigenetic effect of toxic exposures to things like lead. It means exposure can impact decades of family members.”

This is important especially in Detroit where many of the houses were built before 1978, when using lead based paint was still acceptable. What we now know is children and grandchildren inherit the impacts of women’s exposure to toxics. “Think



of it like a Russian Doll,” he said. “Each is nested inside the other.”

LEAD IN DETROIT

What is lead?

Lead is a naturally occurring metal that has been used because it is easy to access, abundant, and easy to work with. It has been used in products like paint, pipes, batteries, and cosmetics.



How does exposure happen?

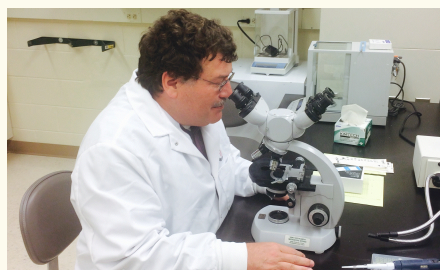
Lead is toxic and enters the body through breathing or consumption. For example, deteriorating paint that is peeling or cracking can release dust particles or may be directly consumed by children.

Why is this a problem in Detroit?

Homes built before 1978 are more likely to have lead based paint, and approximately 94% of homes in Detroit were built before 1980. Children are often exposed through lead based paint though water pipes and soil contamination are also sources of exposure particularly in Detroit.

What are the impacts of lead exposure?

Lead exposure can result in learning disorders, behavioral issues, and irreversible brain damage.



Using Blood Spots to Understand Lead Exposure

Dr. Doug Ruden examines how the environment impacts health by examining human blood and teeth. As pictured, dried blood spot samples are stored in a freezer and then examined by Doug and his team in his lab.

Doug not only works to improve health through research, but he has also visited the Michigan State Capital to advocate for reducing lead exposure.

You can get in touch with Doug Ruden by emailing him at douglasr@wayne.edu



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