

Lead exposure dooms some Wisconsin kids to struggle in school

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Two studies funded by the Wisconsin Partnership Program paint a grim reality for Wisconsin children exposed to lead before age 3.

The more recent, published in the November *Annals of Epidemiology*, reveals that [children](#) who had moderate lead exposure as toddlers scored significantly lower than non-exposed children on the Wisconsin Knowledge and Concepts Exam, given to all Wisconsin fourth graders.

It follows another study that showed that Milwaukee children exposed to lead were nearly three times as likely to be suspended from elementary school. Taken together, the studies suggest that disparities in lead exposure account for a significant part of the [academic achievement gap](#).

Dr. Marty Kanarek, professor of population health sciences at the University of Wisconsin School of Medicine and Public Health, said the two studies show that although lead has been banned in gasoline and paint for more than three decades, lead exposure continues to harm some of Wisconsin's most vulnerable children.

"It is really an issue of environmental justice," says Kanarek, the senior author on both studies. "Poor, African-American children are exposed to lead in their homes. This has detrimental consequences on their ability to read, learn and function successfully for the rest of their lives. As a society, we must face up to cleaning up the [lead paint](#) and dust in older homes in our inner cities in order to not further harm a whole generation of children."

In the Annals of Epidemiology study, researchers looked at children from 1,133 families in Milwaukee and Racine. The children were born between 1996 and 2000. They compared the levels of lead found in the children's blood before age three with test scores from the WKCE exams the children took in fourth grade, and found that after controlling for demographic and socioeconomic differences, moderate [lead poisoning](#) was associated with significantly lower test results.

This result follows a study published in the September 2013 issue of *Environmental Research* by the same research team. It looked at Milwaukee Public Schools' data on children who had been suspended in fourth grade and matched them with blood tests for lead taken when the children were younger than three.

Of 3,796 children who could be matched via the records, 2,687 had lead exposure at a young age and 1,076 did not. About 80 percent of African-American and 64 percent of Hispanic children had lead in their blood, compared with 38 percent of white children. The lead-exposed children were nearly three times as likely to have been suspended in fourth grade.

"These studies show that some challenges facing teachers and schools begin years before children ever set foot in a classroom," says first author Michael Amato, a doctoral candidate in psychology and the Nelson Institute for Environmental Studies at UW-Madison. "We need to do more to protect kids from lead exposure, by cleaning up lead from the places they live and play."

Nationally, African-American students are three times more likely to be suspended than white students. The same discipline gap was found in the Wisconsin study, but 23 percent of the disparity was explained by differences in rates of [lead exposure](#). Many previous studies have documented disparities in school discipline, but few have specified the underlying factors.

Provided by University of Wisconsin-Madison

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