

# The impact of lead exposure on education: Evidence from Mexico\*

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## Abstract

Despite all we know about the health consequences of lead global pollution levels remain high. It's estimated that 1 in 3 children globally have been poisoned by lead, more than two-thirds of which live in low- and middle-income countries. In Mexico, the focus of this study, it's estimated that 13 million children have elevated blood lead levels. Here we will estimate the impact lead pollution from used lead acid battery (ULAB) recycling on test scores. For our analysis we rely on three data sources: 1. the location of all 26 ULAB recycling plants, the location of all schools, and a student-level panel of test score data from an annual math and Spanish language standardized test. To identify the impact of lead pollution from ULAB recycling on test scores, we implement a difference-in-difference strategy, relying on a 2009 U.S. policy change that shifted ULAB recycling activities from the U.S. to Mexico. To make up for the lack of pollution monitoring that is common in LMICs, we proxy for lead exposure using the distance between a school and the nearest ULAB recycling facility. We compare test scores of students before and after 2009, when the U.S. policy change happened, and in schools within 0 to 2 miles of a ULAB recycling facility (high lead pollution exposure) with those attending schools between 2 to 4 miles from a facility (low to no lead pollution exposure). The panel structure of our data allows us to include student fixed effects in our preferred specifications. Initial results show a negative but small effect of the 2009 increase on test scores. Event study results suggest that the effects are cumulative, becoming increasingly negative over time.

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