

Prenatal lead exposure linked to child cognitive developmental delay

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Prenatal lead (Pb) exposure is associated with an increased risk for cognitive developmental delay (CDD) in children, according to a study published online Oct. 23 in *JAMA Network Open*.

Zhenxian Jia, Ph.D., from the Huazhong University of Science and Technology in Wuhan, China, and colleagues examined the association

of prenatal Pb exposure and its interaction with [genetic factors](#) with CDD risk in a prospective cohort study involving women in Wuhan who had an expected delivery date between March 2014 and December 2017. Cognitive development was assessed when children were approximately 2 years of age; CDD was assessed using the Chinese revision of the Bayley Scale of Infant Development.

The analysis included 2,361 eligible mother-child pairs; 292 children (12.4 percent) had CDD. The researchers observed a significant association between higher maternal Pb levels and an increased risk for CDD (highest versus lowest tertile: odds ratio, 1.55), adjusting for demographic confounders. Among children with higher genetic risk, the association of CDD with maternal Pb level was more evident (highest versus lowest tertile: odds ratio, 2.59), adjusting for demographic confounders.

"Our findings indicate that prenatal exposure to even low levels of Pb was associated with increased CDD risk in children, especially in those with a high genetic risk," the authors write. "Prenatal Pb exposure and genetic background may jointly contribute to an increased risk of CDD for [children](#)."

Several authors disclosed ties to the biopharmaceutical industry.

More information: Zhenxian Jia et al, Prenatal Lead Exposure, Genetic Factors, and Cognitive Developmental Delay, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.39108](https://doi.org/10.1001/jamanetworkopen.2023.39108)

Howard Hu, Lasting Adverse Effects of Low-Level Lead Exposure on Cognition and Heritable Susceptibilities, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.39446](https://doi.org/10.1001/jamanetworkopen.2023.39446)

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