

Tobacco use in pregnancy linked to neurocognitive deficits in offspring

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Maternal tobacco use during pregnancy (MTDP) is associated with child neurocognitive deficits at ages nine to 12 years, according to a [study](#) published online Feb. 13 in *JAMA Network Open*.

Troy B. Puga, from the University of Nebraska Medical Center in Omaha, and colleagues examined whether MTDP is associated with

child neurocognitive development in a cohort study involving children aged nine to 10 years at wave 1 (October 2016 to October 2018) and 11 to 12 years at wave 2 (August 2018 to January 2021) in the Adolescent Brain Cognitive Development Study from 21 U.S. sites.

The researchers found that 1,607 children of the 11,448 in wave 1 had MTDP. Those with versus without MTDP had lower scores on the oral reading recognition, picture sequence memory, and picture vocabulary tests and on the crystallized cognition composite score at wave 1.

At wave 2, these differential patterns persisted. Children with versus without MTDP had smaller cortical areas in the precentral, inferior parietal, and entorhinal regions at wave 1, shown on structural magnetic resonance imaging; they also had lower cortical volumes in the precentral, inferior parietal, entorhinal, and parahippocampal regions.

At wave 2, distinct cortical volume patterns continued to be significant. Differential regions of interest were exhibited in the frontal, parietal, and [temporal lobes](#); no significant distinctions were seen in the occipital lobe and insula cortex.

"These results suggest that children have poorer language processing skills and [episodic memory](#) associated with MTDP," the authors write.

"Intervention strategies involving expanded prenatal and perinatal health availability and tobacco control policies are needed."

More information: Troy B. Puga, BS et al, Maternal Tobacco Use During Pregnancy and Child Neurocognitive Development *JAMA Network Open* (2024) [DOI: 10.1001/jamanetworkopen.2023.55952](https://doi.org/10.1001/jamanetworkopen.2023.55952)

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