Prenatal smoke exposure may impact children's chromosomes

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Expectant mothers who smoke during pregnancy may impact the child's genetic makeup, a new study finds. Credit: Olivier Lantzendorffer, Getty Images

A new study published in the *American Journal of Public Health* finds prenatal exposure to cigarette smoke can impact parts of chromosomes in children.

Researchers at the Tulane University School of Public Health and Tropical Medicine investigated telomere length, a repetitive DNA sequence located at the ends of chromosomes that stabilizes the chromosome. Telomeres are a part of chromosomes that have been identified as a biomarker of cellular aging.

Katherine Theall, the Cecile Usdin Professor in Women's Health, and fellow researchers at Tulane reviewed results from more than 100 New Orleans children aged 4 to 14. They found that telomere length was shorter among children who were exposed to smoke during pregnancy. Short telomere length has been associated with negative health outcomes.

"Stress exposure, both environmental and psychosocial, during prenatal life may result in biological changes that alter developmental trajectories and may alter lifelong health trajectories," Theall says. "Identifying the earliest developmental time points for prevention and intervention is challenging but critical if we expect to improve health outcomes."

Provided by Tulane University