

Childhood poverty, poor support may drive up pregnant woman's biological age

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Credit: The Ohio State University

Pregnant women who had low socioeconomic status during childhood and who have poor family social support appear to prematurely age on a cellular level, potentially raising the risk for complications, a new study has found.

Researchers at The Ohio State University examined blood from pregnant women to evaluate the length of telomeres - structures at the end of chromosomes that are used by scientists as a measure of biological (as opposed to chronological) age. Shorter telomeres mean an older cellular age.

The researchers also asked the moms-to-be about stressors, including low socioeconomic status and trauma during their childhood and current [social support](#).

They found that women who reported low socioeconomic status as kids and who struggled with family [support](#) as adults were biologically older, as indicated by [shorter telomeres](#).

This study didn't examine [birth outcomes](#), but prompted the researchers to wonder if this rapid biological aging could put a woman at greater risk of premature delivery, gestational hypertension, preeclampsia and other problems.

The research appears in the journal *Psychoneuroendocrinology*.

Previous research already has established worse birth outcomes in women with psychosocial risk factors, including low socioeconomic status. The cellular aging found in this study is one possible explanation, said Lisa Christian, the study's senior author and a researcher in Ohio State Wexner Medical Center's Institute for Behavioral Medicine Research.

"Access to support, care and resources is so important to expectant moms," she said.

The study included a racially diverse group of 81 [pregnant women](#) who were 25 years old on average. They were evaluated during each trimester

of pregnancy and again about two months after delivery. Measures of trauma and low socioeconomic status during childhood, along with the measure of current social support, came from questionnaires the [women](#) filled out.

Family social support - but not support from partners or friends - emerged as a strong predictor of [telomere](#) length, as did [low socioeconomic status](#) during childhood.

Advanced maternal age is defined by doctors as 35 or older. It is well-understood that older mothers are at higher risk of having babies with medical and developmental challenges, and it is possible that this applies to moms with advanced cellular age as well, said the study's lead author, Amanda Mitchell, who was on the research team at Ohio State and is now a faculty member at the University of Louisville.

"What we are wondering is, how does biological age factor in? We know that there are younger mothers who have poor birth outcomes, and that chronological age is not a perfect predictor of outcomes," Mitchell said.

Telomeres are caps on the ends of chromosomes that shorten as cells replicate - part of the natural aging process. Mitchell compared them to the plastic covering on the end of a shoelace.

"With age - or stress - those plastic coverings wear away and the ends of the lace unravel," she said.

The good news: Telomeres can also lengthen, lowering biological age.

For now, telomere assessment is strictly used for research purposes and not something that would translate into clinical practice, Christian said.

But it's possible that the knowledge gained by research into cellular aging

could prompt useful interventions in obstetrics practices - including greater focus on moms' psychological well-being and support systems, Christian said.

More information: Amanda M. Mitchell et al. Childhood adversity, social support, and telomere length among perinatal women, *Psychoneuroendocrinology* (2017). DOI: [10.1016/j.psyneuen.2017.10.003](https://doi.org/10.1016/j.psyneuen.2017.10.003)

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