

Does pregnancy accelerate aging? Study suggests that it does, at first

March 25 2024, by Crista Marchesseault



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New research from the Yale School of Medicine (YSM) [published](#) in *Cell Metabolism* suggests that pregnancy accelerates aging, but with an important caveat—there appears to be significant reversal of this effect in the postpartum period.

To make this discovery, Yale Child Study Center (YCSC) Assistant Professor Kieran O'Donnell, Ph.D., and his team made use of a unique pregnancy cohort that provided epigenetic data across pregnancy, allowing them to calculate measures of biological aging using "epigenetic clocks."

From early to late pregnancy, a period of approximately 20 weeks, biological—or epigenetic—age increased by approximately two years, suggesting that pregnancy does indeed accelerate aging. However, when O'Donnell and his team examined [biological age](#) in the same women three months later, what they saw came as surprise.

"At three months postpartum, we saw a remarkably large decrease in biological age, by as much as eight years for some individuals, so while pregnancy increases biological age there is a clear (and pronounced) recovery in the postpartum," O'Donnell commented. These new findings replicate an earlier study also published in *Cell Metabolism* suggesting different sources of stress may increase biological age in a transient manner.

In the new study, the team also found that maternal pre-pregnancy body mass index negatively impacted this recovery effect, resulting in higher biological age estimates in the postpartum. In contrast, breastfeeding resulted in a steeper decline in maternal biological age from pregnancy to three months postpartum. O'Donnell believes these findings provide an interesting new direction for aging research.

"Lots to follow up on here," O'Donnell said. "First, we don't know if the postpartum [recovery](#) effect is relevant for short or long-term maternal health outcomes and if these effects accumulate over successive pregnancies. Likewise, we don't know if the postpartum decrease in biological age is simply the system recovering to pre-pregnancy biological age or, more provocatively, if [pregnancy](#) may have a rejuvenating effect."

More information: Hung Pham et al, The effects of pregnancy, its progression, and its cessation on human (maternal) biological aging, *Cell Metabolism* (2024). [DOI: 10.1016/j.cmet.2024.02.016](https://doi.org/10.1016/j.cmet.2024.02.016)

Provided by Yale University

Citation: Does pregnancy accelerate aging? Study suggests that it does, at first (2024, March 25) retrieved 9 May 2024 from <https://medicalxpress.com/news/2024-03-pregnancy-aging.html>

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