



The biometrics of pregnancy: What Oura Ring data shows from 10,000+ pregnancies

Summary

A [study](#) published in *JMIR mHealth and uHealth* analyzed continuous data collected by Oura Ring to map how sleep, temperature trends, heart rate, and physical activity change across pregnancy. Using data from more than 10,000 Oura Ring Members, researchers documented week-by-week physiological trajectories from before conception through the postpartum period and found that measurable deviations in these metrics appeared up to two weeks before pregnancy loss. Oura Ring can capture a broad arc of physiological change during pregnancy in real time, offering a more continuous view of maternal health than periodic clinical visits alone.

OVERVIEW OF STUDY



Objective

Investigate how Oura Ring metrics, including sleep, temperature trends, cardiorespiratory function, and activity, change across pregnancies resulting in term birth, preterm birth, and pregnancy loss, and explore how age and BMI influence those trajectories.



Participants

10,318 female Oura Ring Members (ages 18-51), comprising 5,039 term births, 324 preterm births, and 4,955 pregnancies ending in loss before 20 weeks of gestation.

RESULTS



Temperature

+0.3°C above baseline

Earliest and most sustained signal, detectable by week 4 and peaking around week 9 before gradually declining.



Sleep

+30 min in bed +15 min asleep

Both rise in the first trimester then decline. Near birth, nighttime wakefulness exceeds 3 standard deviations above baseline.



Heart Rate & Heart Rate Variability

+10 bpm by week 32

Heart rate climbs steadily throughout pregnancy. Heart rate variability declines in a mirrored pattern over the same period.



Physical activity

−2,000 steps/day from week 8

Activity drops as early as week 8 and continues to decline toward birth as the pregnancy progresses.



Signal in pregnancies ending in loss

Deviations across multiple metrics - time in bed, sleep duration, temperature, heart rate, and respiratory rate - emerged up to two weeks before pregnancy loss occurred, suggesting biometric monitoring may offer an early warning window.

KEY TAKEAWAYS



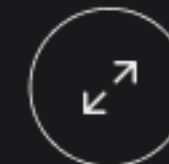
Temperature trends

Temperature trends emerged earlier and were more pronounced than any other metric, reinforcing their value as a primary physiological signal during pregnancy.



Data trends

The ability to detect deviations in the days leading up to pregnancy loss could open new avenues for personalized monitoring.



Real world data

The scale of this dataset — over 10,000 participants tracked across 64 weeks — makes it among the largest real-world studies of its kind.

Learn more about Oura for [healthcare providers](#) and [research](#).

Referenced study: Thigpen N, Clausel A, et al., 2025, Temporal Trajectories in Sleep, Temperature Trends, Cardiorespiratory, and Activity Metrics Measured via Oura Ring During Pregnancy: Large-Scale Observational Analysis, *JMIR mHealth and uHealth*