



Oura Ring demonstrates high agreement with polysomnography for sleep measurement

Summary

A peer-reviewed [study](#) published in *Sensors* by Robbins, et. al evaluated the accuracy of Oura Ring Gen3 and two other consumer wearable devices for sleep tracking against the gold standard of polysomnography (PSG) in healthy adults. Oura Ring Gen3 demonstrated high agreement with PSG for both sleep/wake detection and sleep stage classification, performing as well as or better than the other devices tested.

OVERVIEW OF STUDY



Objective

The purpose of the study was to evaluate how accurately Oura Ring Gen3 and other consumer wearable devices detect overall sleep versus wake periods and classify sleep into stages (wake, light, deep, REM), compared to PSG.



Participants

Thirty-five healthy adults, aged 20–50 years, with no diagnosed sleep disorders participated in the study.



Design

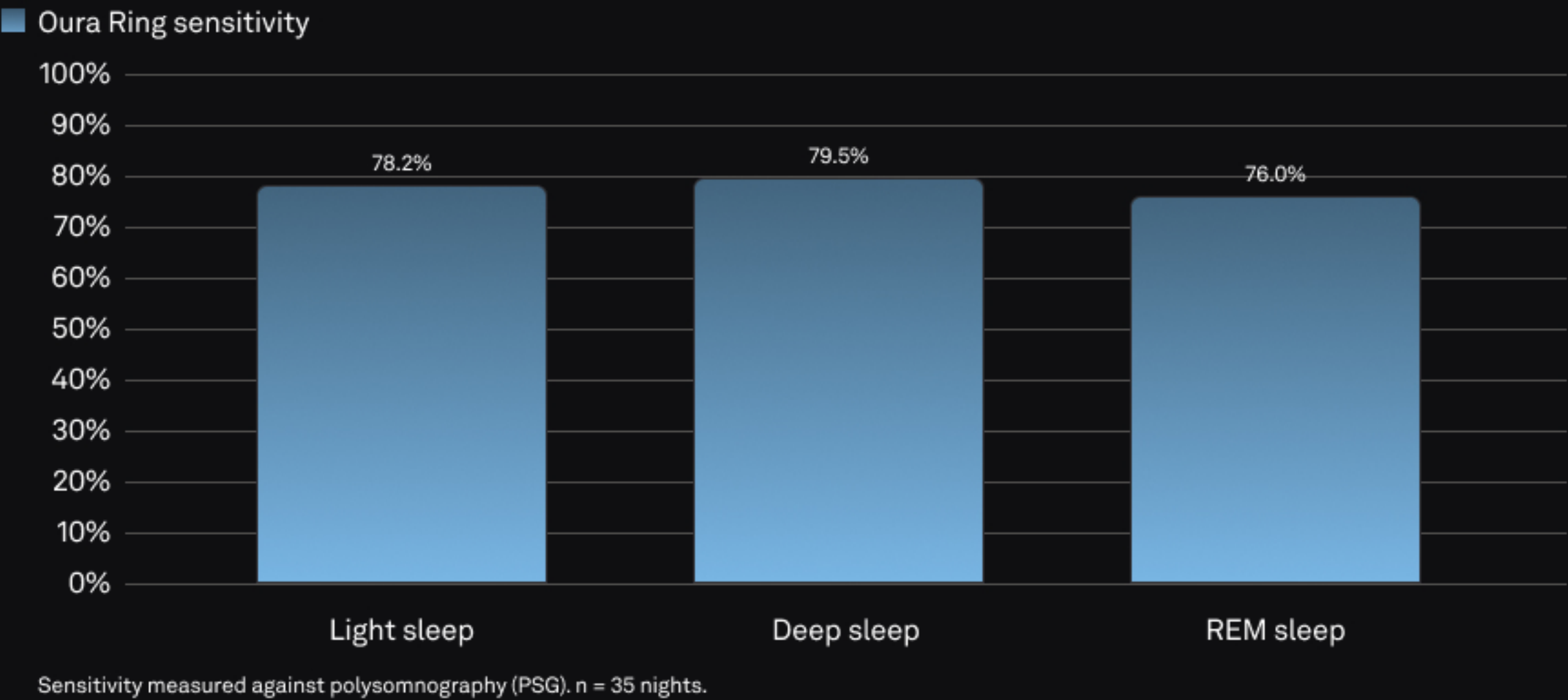
Each participant wore Oura Ring Gen3 (on the non-dominant index finger), Fitbit Sense 2, and Apple Watch Series 8 while undergoing overnight polysomnography

RESULTS

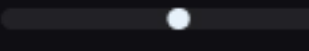
- Oura Ring Gen3 achieved 95% sensitivity for detecting sleep versus wake status.
- Oura Ring was not significantly different from PSG in estimating total sleep time, wake, light sleep, deep sleep, REM, or sleep efficiency, outperforming Fitbit and Apple Watch.

RESULTS

Oura Ring sensitivity by sleep stage vs. PSG
Three-stage classification: light, deep, and REM sleep



Sensitivity range between PSG and tested devices for all sleep stages combined

Device	Sensitivity Range	Min	Max	Visual Range
Oura Ring	76.0-79.5%	76.0%	79.5%	50%  100%
Fitbit	61.7-78.0%	61.7%	78.0%	50%  100%
Apple Watch	50.5-86.1%	50.5%	86.1%	50%  100%

Sensitivity measured against polysomnography (PSG) across all sleep stages. Bar ranges are plotted on a 50-100% scale.
Total nights of sleep: Oura Ring n = 35; Fitbit n = 33; Apple Watch n = 29.

KEY TAKEAWAYS



Sleep validated

For healthy adults, Oura Ring Gen3 is a valid tool to estimate total sleep duration and distinguish between sleep vs. wake.



Research ready

Given the convenience, battery life, and non-invasiveness, Oura Ring may be appropriate for longitudinal or epidemiologic sleep research in healthy populations where gold-standard PSG is impractical.

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

Referenced study: Robbins, et al., 2024, Accuracy of three commercial wearable devices for sleep tracking in healthy adults, *Sensors*.
This research was funded by Ouraring Inc.