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**Original Article**

# Assessing sleep architecture and continuity measures through the analysis of heart rate and wrist movements recordings in healthy subjects: comparison with results based on polysomnography

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## Highlights

- Recording heart rate and movements during sleep is much easier than polysomnography.
- Both methods provide comparable sleep structure and continuity descriptors.
- Heart rate and movements recording can be repeated and performed in any environment.

## ABSTRACT

*Objective*: The objective of the study was to evaluate the reliability of a new methodology for assessing sleep architecture descriptors based on heart rate and body movement recordings.

*Methods*: Twelve healthy male and female subjects between 18 and 40 years of age, without sleep disorders and not taking any drugs or medication that could affect sleep, were recorded continuously during five consecutive nights. Together with the standard polysomnography, heart rate was recorded with a Holter and wrist movements by actimetry.

Of the 60 recorded nights, 48 artifact-free nights were analyzed by two independent and well-trained visual scorers according to the rules of the American Academy of Sleep