Does Multinight Quantification of OSA Severity Provide More Precise Estimates of Associations With Incident Hypertension?

**STUDY DESIGN**

- 3,831 participants without baseline hypertension

  Participants had

  • ≥28 days of nightly apnea-hypopnea index (AHI) recordings via an under-mattress sensor
  
  and

  • ≥3 separate BP measurements over a 3-month baseline period followed by ≥3 separate BP measurements 6 to 9 months postbaseline.

**RESULTS**

**PARTICIPANT CHARACTERISTICS**

- Mean Age: 51 +/- 12 years
- Gender: 91% men
- Mean BMI: 28 +/- 5 kg/m²

**OUTCOMES**

- 100% Rate
  - AHI ≥28 nights
  - 100% of trials detected an association with hypertension when AHI was quantified ≥28 nights.

- 42% Rate
  - Single-night
  - Single-night quantification of OSA failed to detect an association with hypertension risk in 42% of simulated trials (α = 0.05).

Night-to-night variability in OSA severity is a major source of variance that negatively impacts the ability to detect associations between OSA severity and health outcomes.