**Background**

- The incidence of OSA continues to increase in the pediatric population.
- Although there are established screening guidelines in adults, these do not translate to pediatric patients.
- Although polysomnography (PSG) is the gold standard for the diagnosis of OSA and SDB, such tests are costly, requiring an overnight hospital stay.
- Despite guidelines set forth by the AAP, ASA, and AAOHNS, there are still questions regarding who should have a sleep study.
- Disordered sleep in children with OSA or SDB leads to decreased executive functioning and cognitive skills.
- A slower RT is an important consequence of sleep deficit.
- The current study compares RT and Fitbit® sleep data with PSG sleep data among children with OSA or SDB.
- The primary objective is to evaluate cost effective measures that can predict sleep time on PSG.
- Specifically, we will determine how well continuous measures of BMI percentile, RT on PVT, and sleep time on a Fitbit® correlate with continuous measures of sleep duration and the AHI on PSG.

**Methods**

- With IRB approval, RT was measured via a 10 minute psychomotor vigilance test (PVT, Ambulatory Monitoring Inc., NY) in children, 6-12 years in age, who snored or were referred for a sleep study. (Figure 1).
- The weight and height were measured, and the Fitbit® was placed on the wrist of the subject when PSG testing was begun.
- Pearson correlation coefficients were used to evaluate correlation between each predictor and sleep time or AHI on PSG.

**Results**

- 11 patients: 5 girls, 6 boys
- Mean age: 10 ±2 years.
- Mean BMI percentile: 82 ± 31%
- Mean RT on PVT: 432 ± 231 ms
- Mean sleep time: Fitbit® 381 ± 43 min
  PSG 356 ± 44 min
- Pearson correlation coefficients demonstrated concordance between sleep time on the Fitbit® and PSG (r=0.69; p=0.020); but not between BMI percentile (r=0.24; p=0.487) or mean RT (r=0.21; p=0.542) and sleep time on PSG.
- Sleep time on Fitbit®, BMI percentile, and mean RT were not correlated with AHI (p=0.982; p=0.332; and p=0.370, respectively).

**Conclusion**

- Sleep time on the Fitbit®, but not anthropometric and cognitive measurements such as RT, correlated with sleep time on PSG.
- Our sample size was small and more patients will need to be studied to draw firm conclusions

**References**