

# Sitting and Television Viewing

## Novel Risk Factors for Sleep Disturbance and Apnea Risk?

### Results from the 2013 National Sleep Foundation *Sleep in America* Poll

Matthew P. Buman, PhD; Christopher E. Kline, PhD; Shawn D. Youngstedt, PhD; Barbara Phillips, MD, MSPH, FCCP; Marco Tulio de Mello, PhD; and Max Hirshkowitz, PhD

**BACKGROUND:** Excess sitting is emerging as a novel risk factor for cardiovascular disease, diabetes, mental illness, and all-cause mortality. Physical activity, distinct from sitting, is associated with better sleep and lower risk for OSA, yet relationships among sitting behaviors and sleep/OSA remain unknown. We examined whether total sitting time and sitting while viewing television were associated with sleep duration and quality, OSA risk, and sleepiness.

**METHODS:** The 2013 National Sleep Foundation *Sleep in America* Poll was a cross-sectional study of 1,000 adults aged 23 to 60 years. Total sitting time, time watching television while sitting, sleep duration and quality, OSA risk, and daytime sleepiness were assessed.

**RESULTS:** After adjusting for confounding factors (including BMI and physical activity), each additional hour per day of total sitting was associated with greater odds of poor sleep quality (OR [95% CI] = 1.06 [1.01, 1.11]) but not with other sleep metrics (including sleep duration), OSA risk, or daytime sleepiness. For television viewing while sitting, each additional hour per day was associated with greater odds of long sleep onset latency ( $\leq 30$  min) (OR = 1.15 [1.04, 1.27]), waking up too early in the morning (OR = 1.12 [1.03, 1.23]), poor sleep quality (OR = 1.12 [1.02, 1.24]), and “high risk” for OSA (OR = 1.15 [1.04, 1.28]). Based upon an interaction analysis, regular physical activity was protective against OSA risk associated with television viewing ( $P = .04$ ).

**CONCLUSIONS:** Excess sitting was associated with relatively poor sleep quality. Sitting while watching television was associated with relatively poor sleep quality and OSA risk and may be an important risk factor for sleep disturbance and apnea risk.