



# Research Week 2023

## Sleep in Orthopedic Surgery: A Literature Review

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### Keywords

Sleep, Orthopedic Surgery

### Abstract

**Introduction:** Sleep is vital to human mood, cognition, and dexterity. There is plentiful literature studying sleep deprivation in general surgeons, especially relating to cognitive performance and surgical simulation. Orthopedic surgeons represent a population with unique challenges in their training, such as a high physical demand. We aim to understand current literature studying sleep deprivation in the orthopedic surgery population.

**Methods:** MEDLINE, Psycinfo, and EMBASE were searched. Articles were reviewed by two independent reviewers. Inclusion criteria were 1) non-review articles discussing sleep in orthopedic surgery, 2) orthopedic-specific data measured and reported, 3) enrollment of attending/consultant or resident/house officer or fellow orthopedic surgeons, 4) reporting of sleep-related variables and 5) published in a peer-reviewed journal. Expert opinion articles, commentary articles, and those with data not directly relevant to orthopedic surgery were excluded.

**Results:** 10 studies met inclusion criteria. The population was 232 residents, 10 fellows, and 560 attendings. Nightly mean sleep hours was reported in seven articles, all of which measured sleep via self-report questionnaires. Two of the articles reported overall sleepiness but differed in how they measured this variable: Stanford sleepiness scale versus Epworth Sleepiness scale. Two studies utilized wearable technology to report quantity and quality of sleep but differed in devices used: Actigraphy versus Whoop Band. One study generated their own definition of 'sleep-deprived' and measured the total number of sleep-deprived surgeons operating on patients. One study reported the number of dozed-off sleep events as their primary outcome, which was a self-report measure.

**Conclusions:** Despite the critical influence sleep has on cognition, mood, and performance, there is scarce literature describing sleep in orthopedic surgeons. Even so, the existing articles largely utilize subjective measures of sleep, allowing for significant levels of bias and enigmatic outcomes. There is a glaring need for literature studying objective measures of sleep in orthopedic surgeons.