

Screening resident physicians entering training misses many at risk for sleep impairment

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Screening resident physicians entering their first year of training to identify those with pre-existing sleep problems does not appear to provide useful data regarding risks of developing sleep impairment during subsequent months. In their study appearing in the June issue of the *Journal of General Internal Medicine*, a Massachusetts General Hospital (MGH) research team describes finding that even those with no evidence of sleep impairment at the outset of residency are liable to develop significant sleep problems during the following months.

"We had hoped that identifying trainees with greater susceptibility to effects of the long hours of medical training could help programs focus on optimizing those trainees' [sleep health](#) and develop strategies to mitigate sleep deficiency," says Lori Berkowitz, MD, of the [MGH Department of Obstetrics, Gynecology and Reproductive Biology](#), senior author of the report. "But we found that both those who were and those who were not sleep disordered on entering residency were susceptible; so focusing only on those who began residency with [disordered sleep](#) would miss others who go on to develop [sleep problems](#)."

The challenge of balancing the long hours of residency training with the risks inherent in care provided by sleep-deprived residents led to the 2003 imposition of work-hour restrictions by the Accreditation Council on Graduate Medical Education (ACGME). Those initial rules limited residents to working no more than 30 consecutive hours—24 hours of

clinical work and 6 hours for education and transfer of care to other clinicians. In 2011 the rules were adjusted to reduce consecutive clinical work hours to 16 for first-year residents and 24 for all others, with an additional 4 hours for education and transfer of care. The clinical work-hour cap for first-year residents was increased to 24 hours for the current academic year, which began July 1, 2017.

It is well known that [sleep deprivation](#) is associated both with health risks such as obesity and cardiovascular disease and with impaired concentration and attention. Sleep impairment in resident physicians has been linked to increased risk of medical errors and of burnout symptoms such as depression and anxiety. A previous study from members of the MGH research team found that some residents had impaired sleep even before they began training, raising the possibility that those individuals were more likely than others to experience worsening sleep impairment and should be targeted by efforts to alleviate the problem. The current study was designed to explore the hypotheses that both sleep quality and [daytime sleepiness](#) worsen during the first year of residency and that individuals with impaired sleep when they enter residency would continue to experience sleep impairment.

The team surveyed all first-year residents entering programs at MGH and Brigham and Women's Hospital (BWH) in June 2011, when the 16-hour cap on clinical work hours initially went into effect. As part of their orientation, all 281 new residents completed two validated survey instruments—one which measures their sleep quality during the preceding month and one that evaluates their current levels of daytime sleepiness. The surveys were repeated around nine months later, at which time they were completed by 153 residents. The only significant difference between residents who did and did not complete the follow-up surveys was that those who did not were more likely to be in surgical programs.

Among residents who completed the follow-up surveys, the average daily sleep duration dropped from 7.6 to 6.5 hours, with both surveys reflecting significantly worse [sleep quality](#) and daytime alertness. While residents with impaired sleep at the study outset were likely to show a greater level of impairment, those that did not have impaired sleep on entering residency were not protected. In fact, over half of all residents met or exceeded the cutoff for excessive daytime sleepiness at follow up, a level that previous studies have associated with an increased risk of errors leading to adverse patient events.

Lead author Jonathan Zebrowski, MD, of the MGH Department of Psychiatry, says, "It was surprising that some residents with normal sleep at the study's outset developed severely impaired sleep—sometimes worse than those with pre-existing sleep impairment. The theory that it would be helpful to identify trainees with sleep impairment before they begin residency does not seem to be a viable strategy."

Berkowitz adds, "All [residents](#) appear to be at risk for sleep impairment and its effects on performance, and since long work hours are a hallmark of residency training, strategies to reduce those effects are paramount. In an era of increased recognition of and attention to physician burnout and impaired well-being, sleep hygiene is an important part of self-care that needs to be stressed. Since for many specialties these demands will not resolve completely after training is completed, recognition of and management of fatigue is a critical life skill for our physician workforce. The ACGME work-hour restrictions are certainly important, but they are not enough."

More information: Jonathan P. Zebrowski et al, So Tired: Predictive Utility of Baseline Sleep Screening in a Longitudinal Observational Survey Cohort of First-Year Residents, *Journal of General Internal Medicine* (2018). [DOI: 10.1007/s11606-018-4348-3](https://doi.org/10.1007/s11606-018-4348-3)

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