



FATIGUE

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NIGHT FLOATS, FATIGUE, HANDOFFS

Cavallo A, Ris MD, Succop P. The night float paradigm to decrease sleep deprivation: good solution or a new problem? *Ergonomics* 2003;46(7):653–663.

In the late 1980s, physician residency training programs developed the night float rotation, characterized by a sequence of 5–15 days of night work without any daytime duties, thereby involving an abrupt reversal of the wake–sleep schedule.

We examined the effect of the night float rotation on sleep, mood, and performance of pediatric residents. Residents completed sleep diaries daily, and tests of mood (Profile of Mood States) and attention (Conner's Continuous Performance Test) three times a week during the 2-week night float rotation and during equivalent blocks of daytime rotations.

Results show that, despite having ample opportunity to sleep during the day, while on night float rotations residents slept less than during the nights of their normal daytime rotations, 6.3 h +/- 2.5 h and 7.2 h +/- 1.7 h, respectively, $p < 0.0001$. Also, during night float compared with daytime rotations, residents had increased fatigue-inertia scores, 8.7 +/- 4.1 and 4.8 +/- 2.4, respectively, $p < 0.0001$, and decreased vigor-activity scores 10.7 +/- 5.4 and 14.8 +/- 5.3, respectively, $p = 0.02$. The scores for attention were not significantly different between night float and daytime rotations. The correlation coefficients of fatigue with measures of attention were not statistically significant for daytime rotations. However, night float fatigue correlated with omission errors, $r = 0.51$, $p = 0.001$ and with attentiveness $r = -0.36$, $p = 0.03$.

Training programs that adopt the night float rotation strategy must be aware of potential deleterious effects that may have serious consequences in resident performance and patient safety.

Handoffs

As Whitcomb indicates, one of the biggest challenges is "handoffs." He suggests that we need to study this according to specialty. We need to integrate industrial engineering techniques to isolate the components of the task, and then use the information to design a system of care to minimize risks. This has been done successfully in other high-performance, high-stake professions such as commercial aviation. Restrictions on pilot duty hours were only part of the solution. Tremendous attention was paid to the entire airline system.

Whitcomb ME. More on resident duty-hours limits. *Acad Med* 2004;79:377–378. http://www.academicmedicine.org/cgi/content/full/79/5/377?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&author1=Whitcomb&fulltext=hand+offs&searchid=1090952541399_873&stored_search=&FIRSTINDEX=0&journalcode=acadmed