

# Exploring light exposure of hospital nurses working rapidly rotating shifts in relation to sleepiness and sleep

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## Abstract

Nightshift work can negatively impact sleep, performance, and health. Careful manipulation of light exposure patterns can help reduce these negative effects but is challenging in conditions of rapidly rotating shiftwork and due to individual differences. As chronotype is related to shiftwork tolerance, we explored patterns of sleep, sleepiness, and light exposure during the first day of nightshift work between earlier and later chronotypes, based on data from an observational field study among rapidly rotating hospital nurses. Due to the limited sample size, only descriptive analyses and visual inspection were conducted. In line with findings of lower shiftwork tolerance, earlier chronotypes (N=6) seemed to be sleepier during work and sleep less than later types (N=7). Differences were also observed in light exposure patterns, revealing potential for light exposure interventions, and suggesting a contribution to shiftwork tolerance. For future intervention studies in aiming to identify a light exposure strategy, our findings highlight the importance of investigating light exposure relative to the individual circadian phase.