

CURRENT TOPICS

Workers With Irregular Hours During Seasonal Work Surges

Promoting Healthy Sleep

Patricia Butterfield, PhD, RN, FAAN¹

Abstract: A significant proportion of the labor force works irregular hours during harvest, summer, or holiday work surges. Unfortunately such workers are often uninformed about the importance of sleep and fatigue management. Seasonally timed worker training can improve health and safety outcomes during work surges.

Keywords: occupational health, workers, irregular hours, agriculture, sleep

Workers are typically classified as shift or non-shift workers, despite the fact that many workers have schedules that vary seasonally or in conjunction with intermittent work demands. Industries with work surges include crop production, food manufacturing, health care, transportation, protective services, and retail. Such workers often change hours abruptly in response to harvest needs, holiday demands, or time-sensitive deadlines. Those working irregular hours face similar health risks as regular shift workers; one study of electrocardiogram changes found higher levels of risk in those working irregular hours compared with regular 24-hour shifts (Meloni, Setzu, Del Rio, Campagna, & Cocco, 2013). Workers with seasonal and/or irregular work hours can benefit from education addressing sleep, fatigue management, and safe work practices (Lilley et al., 2012). Worker training can improve both worker and organizational outcomes. Tailored educational interventions have demonstrated significant positive effects on sleep quality and fatigue in workers with irregular hours (van Drongelen et al., 2014).

Evidence-based practices for shift workers are well documented and can be adapted to fit work-surge situations (Arne & Moreno, 2014; The National Institute for Occupational Safety and Health et al., 2015). Training should be delivered prior to seasonal changes so that workers can anticipate and adopt risk

reduction practices in advance of work surges. Occupational and environmental health nurses developing a training outline should include fundamental and context-relevant information addressing:

- Circadian rhythms and sleep fundamentals: 24-hour body clock regulates body temperature, digestion, heart rate, and other physiology; some but not all circadian rhythms adapt to change in 2 to 3 days; developing an intentional sleep plan will minimize fatigue resulting in fewer health and safety issues both on- and off-the-job.
- Sleep schedules: Block time for 7 to 8 hours of sleep each day. Most workers prefer to wake up just before work; however, a smaller percentage prefer sleeping upon arriving home. Workers should self-assess what works best. Prepare for sleep by relaxing, avoiding screen time, and maintaining a dark, quiet, and disruption-free bedroom.
- Health behaviors: Maintain usual meal times to prevent gastrointestinal disturbances (Canadian Centre for Occupational Health and Safety, 2010). Plan to eat the main meal midday rather than later. Prevent disrupted sleep due to caffeinated and energy drinks by understanding the duration of stimulants (e.g., caffeine's half-life is 5-6 hours). To the extent possible, maintain regular levels of exercise during extended work hours; moderate activity promotes restorative sleep.

Successful outcomes are predicated on organizational as well as worker actions. Organizations should (a) minimize the frequency of shift changes, (b) rotate shifts forward, and (c) value the restorative effects of workers' days off and time for socialization and recreation. Shift-scheduling software is widely available; such tools take into account length of the rotation period, work duration, and other sleep correlates. Workers with child care

responsibilities warrant additional attention and dialog. Consider the benefits of worksite resources known to maximize productivity and reduce work risks; options can range from simple (e.g., access to healthy snacks) to complex (e.g., showers, rest areas). Educate workers about the risk of motor vehicle accidents following extended shifts; rural worksites may consider providing transportation options for workers. Provide managers with evidence addressing the immediate and long-term benefits of worker training.

References

- Arne, L., & Moreno, C. (2014). Workplace interventions: A challenge for promoting long-term health among shift workers. *Scandinavian Journal of Work, Environment & Health*, 40, 539-541. doi:10.5271/sjweh.3458
- Canadian Centre for Occupational Health and Safety. (2010). *OHS answers fact sheets: Rotational shiftwork*. Retrieved from <http://www.ccohs.ca/oshanswers/ergonomics/shiftwrk.html>
- Lilley, R., Day, L., Koehncke, N., Dosman, J., Hagel, L., & William, P., & Saskatchewan Farm Injury Cohort Study. (2012). The relationship between fatigue-related factors and work-related injuries in the Saskatchewan Farm Injury Cohort Study. *American Journal of Industrial Medicine*, 55, 367-375. doi:10.1002/ajim.22003
- Meloni, M., Setzu, D., Del Rio, A., Campagna, M., & Cocco, P. (2013). QTc interval and electrocardiographic changes by type of shift work. *American Journal of Industrial Medicine*, 56, 1174-1179. doi:10.1002/ajim.22207
- The National Institute for Occupational Safety and Health, Caruso, C. C., Geiger-Brown, J., Takahashi, M., Trinkoff, A., & Nakata, A. (2015). *NIOSH training for nurses on shift work and long work hours* (NIOSH Publication No. 2015-115). Retrieved from www.cdc.gov/niosh/docs/2015-115/
- van Drongelen, A., Boot, C. R., Hlobil, H., Twisk, J. W., Smid, T., & van der Beek, A. J. (2014). Evaluation of an mHealth intervention aiming to improve health-related behavior and sleep and reduce fatigue among airline pilots. *Scandinavian Journal of Work, Environment & Health*, 40, 557-568. doi:10.5271/sjweh.3447

DOI: 10.1177/2165079915622458. From ¹Washington State University. Address correspondence to: Patricia Butterfield, Professor and Dean Emerita, Washington State University College of Nursing, P.O. Box 1495, Room 243, Spokane, WA 99210, USA; email: pbutter@wsu.edu.

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