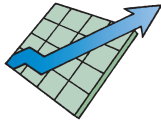


Quality Matters



Night Warriors

By Shari J. Welch, MD

Rats forced to go without sleep at night aged more quickly, had shorter life spans, and produced more tumors than rats that were not sleep-deprived, according to researchers at the State University of New York in Albany. (*Aging* [Albany, NY] 2009; 1[10]:855.)

And though the research is contradictory and inconclusive, the same has been suggested about humans working the nightshift: They may have an increased risk of breast and other cancers. But we know that the nightshift takes a toll on its workers. A recent article in *Chronobiology International* showed that nightshift workers had an increased odds ratio of being obese, having central obesity, suggesting endocrine dysfunction, and hypertension. (2010;27[2]:324.) Yet another article published in 2010 showed an



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increased risk for cardiovascular disease in nightshift workers. (*Eur J Epidemiol* 2010;25[3]:305.)

Other studies have linked the nightshift to shorter life expectancy, increased risk of diabetes, and increased risk of anxiety, depression, and eating and sleep disorders. Nightshift workers eat fewer calories but consume more fat and sugar, often resorting to fast food, caffeinated beverages, and energy drinks, and the long-term consequences of this are only beginning to be studied. Suffice it to say, that nightshift work is hazardous to your health. (<http://bit.ly/NightshiftRisks>.)

Researchers also increasingly recognize that the sleep deprivation inherent in nightshift work affects human performance. A study at Henry Ford Hospital reported in the journal *Sleep* studied attention and memory in sleep-deprived and non-sleep-deprived subjects. (2010;33[5]:703.) The findings were significant, and support other studies demonstrating that the limits of human performance are tested when subjects are forced to challenge their natural circadian rhythms. Sleep-restriction experiments also have shown that multitasking and psychomotor skills falter when subjects are deprived of sleep. A study done at Stanford University noted that those working nights get less sleep overall, are prone to sleep attacks (falling asleep suddenly, often at work), and are at increased risk for motor vehicle collisions (*Chronobiol Int* 2010;27[3]:575.) Should nightshift


workers be driven to work?

One of the largest studies of shift work and scheduling strategies was reported this year in *Ergonomics*. (2010;53[6]:727.) A number of scheduling models were tested in 4600 steel workers, and the one that rotated shift workers forward (day to evening to night) with extra time allotted after the nightshift was associated with decreased illness and absenteeism. Night workers tend to catch up on sleep on their nights off so this also helped the workers to compensate on overall sleep deficits. Of particular note, the older workers demonstrated the most benefit from the new model, suggesting implications for the aging workforce.

Other strategies that help workers manage the nightshift include trying to get some “prime” sleep. The most restful sleep is Stage 4 REM sleep, and this is the most difficult to come by when challenging normal circadian rhythms. This stage tends to be most prevalent between 9 p.m. and 3 a.m., and this has been dubbed “prime” sleep. This has led to experimentation with schedules that involve shorter shifts staggered around the prime sleep hours. Night workers should be encouraged to sleep as much as possi-

ble when off shift. Avoiding caffeine and using room-darkening shades and earplugs to limit sensory interruptions can help facilitate sleep.

If a worker will be switching back to a normal circadian sleep pattern, he should be encouraged to rise by noon the next day to reset his clock. Exercise also helps nightshift workers in weight management and blood pressure, and the endorphin release associated with vigorous exercise can counterbalance the mood disorders and dysphoria that many people experience after sleep deprivation. Simply parking in the lot farthest from the workplace can make the shift begin and end with some vigorous exercise. Though night workers have a tendency to eat fast food and sugars, a low carbohydrate diet is associated with higher energy levels, and the post-prandial lipolysis that causes drowsiness can be avoided.

Nightshift work is part and parcel of a career in health care and in emergency medicine in particular. Research in this area should attract our attention in terms of human error at work and personal well-being. Nightshift workers should be given incentive pay. The best models allow staff to work fewer hours because of incentive pay and to take more time off to close the gap on the sleep deficit that takes such a toll on individual health. Physician groups and hospitals should educate all nightshift workers on strategies that can make nightshift work healthier. 

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