

Effects of Night Shift Work on Police Officers

*Are Officers Underestimating Health Risks and What Can Departments Do to
Combat Them?*

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Introduction

I remember being a “night owl” as far back as Junior High School. When my parents told me it was time to go to bed, I always fought them. That carried over to my years in college. I always felt I studied better and was able to concentrate more during the evening hours. That coincided with my part-time work schedule. So, life was good as long as I was in bed by three o’clock a.m. When I started in police work, I was told repeatedly that rookies start on the night shift. “Sounds great,” I thought. I mean, I was already used to being up all hours of the night.

After a few years and children coming along, I began to realize the toll night shift was having on my body and brain. Luckily, I was able to transfer to Investigations and work a semi-normal schedule for almost seven years. I had the opportunity to promote to a supervisory position, and am now working nights again. Being there before, I knew to take precautions this time around. However, even though I am older and wiser, I am seeing different effects. Thus, I began to study what exactly was occurring. Once I began to educate myself, I started seeing effects in my subordinates, peers, and supervisors.

Several studies pertaining to law enforcement health issues have been conducted. Many of those are specific to night shift. This document will provide an overview of health risks to police officers working the night shift and whether or not officers are underestimating those risks. Finally, we will take a look at how police departments and their leaders should take measures to improve health and prepare officers for the rigors of night shift police work.

Shift Hours and Sleep Patterns

Depending on the department one works for, the night shift consists of an eight, ten, or twelve hour shift beginning between six o'clock in the evening and midnight and ending anywhere from four o'clock to eight o'clock in the morning. Thus, an officer must find time to sleep during the day.

From personal experience, I have found it beneficial to sleep from approximately nine o'clock a.m. to three or four o'clock p.m. the days I work. Officers with whom I have worked or supervised have varied ideas: Some officers go home and straight to sleep, waking mid-afternoon and staying awake until the next morning. Others wait until later in the morning to sleep and do not get up until just before work. Both have their finer points. Of course, this is only used to define sleep patterns of workers on a twelve-hour shift. Upon speaking with officers from other departments who work eight-hour shifts, I found similar answers, but some incorporated naps. One thing is certain, the majority agrees there are factors affecting their sleep and it is rarely "perfect" sleep.

Marcy Brinkley, in an article on Livestrong.com, said, "The AARP reports that 60 to 70 percent of shift workers experience sleep disturbances." (para. 2) Sleep disturbances can be from any number of factors including, but not limited to: Activity in the home by family members, phone calls, social life away from work, court appearances, or sleep disorders. While family members' activities, phone calls, and social life can be monitored and potentially changed by the police officer working overnight, court appearances are something over which they have little control. We will look at what departments are doing or can do about that later. For now, let us take a closer look at sleep disorders.

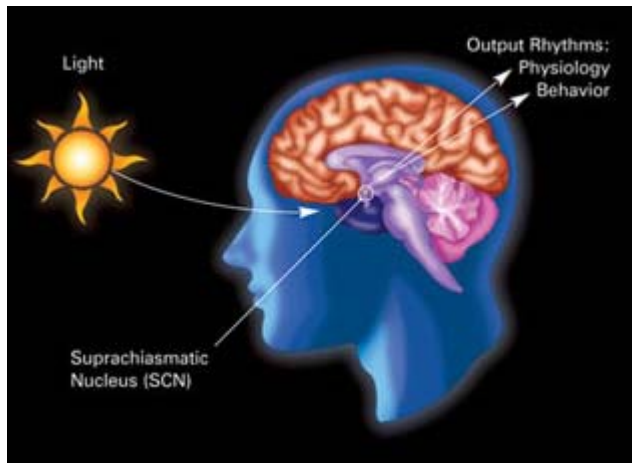
Sleep Disorders

Research in 2007 of over four thousand police officers indicated “sleep disorders appear to be highly prevalent.” (American Academy of Sleep Medicine, 2007) Among the sleep disorders studied were:

- Obstructive Sleep Apnea
- Restless Leg Syndrome
- Insomnia
- Shift Work Sleep Disorder

Of those screened, 6.8 percent were positive for insomnia, and two percent were positive for shift work sleep disorder. RLS (Restless Leg Syndrome) and Obstructive Sleep Apnea have complicated chemical and psychological factors which will not be discussed or defined in this document. Instead, the focus will be on insomnia and shift work sleep disorder, which are both easier to define and symptoms are readily apparent.

Shift work sleep disorder encompasses mental and physical ailments associated with disturbing the Circadian Rhythm. “Circadian rhythms are physical, mental and behavioral changes that follow a roughly 24-hour cycle, responding primarily to light and darkness in an organism’s environment.” (National Institute of General Medical Sciences, July 2008) Circadian rhythm is further related to sleep and the production of hormones. Light directly affects this as shown in the illustration below:



(National Institute of General Medical Sciences, July 2008)

The Suprachiasmatic Nucleus, or SCN, “controls the production of melatonin, a hormone that makes you sleepy.” (National Institute of General Medical Sciences, July 2008) According to the illustration, the SCN is located above the optic nerve. Light is sensed by the optic nerve. So, naturally, one becomes sleepy during the night hours when not exposed to constant light. Not all persons are the same and will have different peak performance hours, but basically, the human body is developed to sleep when it is dark. Although many claim to sleep ‘fine’ during the day, sleep is often lighter and more easily interrupted when attempted during daylight hours. Insomnia is one of the results of disrupting the circadian rhythm.

Insomnia is defined as “the inability to obtain an adequate amount or quality of sleep. The difficulty can be in falling asleep, remaining asleep, or both. People with insomnia do not feel refreshed when they wake up.” (Gale Encyclopedia of Medicine, 2008) An officer suffering from insomnia can display a reduction in “physical health, emotional well-being, mental abilities, productivity and performance.” (American Academy of Sleep Medicine, 2007)

Physical Health Risks

The FBI reported, "Thirty-four of the 47 officers who were accidentally killed in the line of duty in 2009 died as a result of automobile accidents." (LEOKA, 2009) Those reports do not directly indicate if the accidents were the officers' fault, but recently I sat through an informational course that revealed the majority are. Many accidents are results of poor decision making. Since insomnia results in reduced mental abilities, there is a direct correlation. Also, various studies have shown felonious assaults on officers occur more often during the night time hours. "The largest percentage of assaults on officers (16.0 percent) happened from 12:01 a.m. to 2 a.m...of all officers who were assaulted in 2009, the largest percentage (32.6 percent) were responding to disturbance calls (family quarrels, bar fights, etc.)." (LEOKA, 2009) The majority of police responses to bar fights and family disturbances occur during the night shift hours (defined earlier). If an officer has been suffering from insomnia, and his physical and mental abilities are diminished, the likelihood of survival in such an assault is reduced.

Not only can insomnia lead to physical health risks associated with actions of officers and others, but also to physical health risks from the inside. Disruption in circadian rhythm seems to have a sneaky effect on physical health. Many officers working night shift complain of gaining weight around their midsection and having trouble keeping it in check. Although some of the weight gain can be attributed to poor diets and eating too fast, one particular study has shown a direct correlation to disruption of circadian rhythm. Research Associate Professor John Violanti at the University at Buffalo has embarked on a journey of studying the effects of night

shift since 2003. In an article in Futurity.org, Violanti said, "Sleep debt has been shown to have a harmful impact on carbohydrate metabolism and endocrine function, which could contribute to metabolic disorders." (Baker, 2009) Violanti's studies revealed officers working the night shift had a higher percentage of elevated waist circumferences: "55 percent had elevated waist circumference, compared to 50 percent and 30 percent for women and men." (Baker, 2009) The comparison is to officers working non-midnight shifts.

Because the human body is developed to work on a semi-certain schedule, it becomes used to metabolizing foods (specifically carbohydrates) during daylight hours. During the night, the system slows down. Therefore, it is not equipped or trained to metabolize foods at the same rate while awake at night. As mentioned previously, officers on the night shift are at a disadvantage when it comes to eating. They tend to eat too fast (based on call volume) and will likely rely on snacks instead of healthy meals. The snacks often consist of sugars and caffeine. The latest trend for police is drinking energy drinks. A large portion of the available energy drinks are loaded with caffeine and sugars. Elevated waist circumferences are a direct result. An article in Canada's National Occupational Health and Safety Resource also touched on this *and* other gastrointestinal problems. "Gastrointestinal and digestive problems such as indigestion, heartburn, stomachache and loss of appetite are more common among rotating shiftworkers and night workers than among day workers." (para. 14)

Weight gain can, and usually does, lead to other issues such as joint problems and lower back pain. The most significant risk associated with weight gain is cardiovascular disease. Increased fatty cells and fatty acids in the body begin to clog arteries and restrict blood flow.

From this, increased blood pressure results; producing higher risks for stroke and heart attack. When Violanti conducted his studies, he found officers, regardless of age, were at an increased risk for all of the aforementioned health effects when working night shift hours and seeking sleep during the daylight hours.

His study, along with many other doctors, in an article found in the Archives of Environmental & Occupational Health, revealed shift workers are at a risk for metabolic syndrome, “defined as elevated waist circumference and triglycerides, low HDL cholesterol, hypertension, and glucose intolerance.” (p 194) Remarkably, younger officers showed increased risks. Because many departments force younger officers to work the night shift, those officers become subject to the health risks early in their careers. A significantly higher number of young officers showed symptoms of metabolic syndrome. These officers are at risk for strokes, heart disease, and diabetes later in life. If they are not educated as to the causes, symptoms, and ways to combat the effects, their life expectancy and quality of life are shortened and reduced.

Underestimation of Risks

The Fayetteville Police Department, in Fayetteville, AR, currently has thirty-four police officers and supervisors working night shift (as defined earlier). Thirty-two of those work from either six o’clock p.m. to six o’clock a.m. or from seven o’clock p.m. to seven o’clock a.m. The remaining two work 7pm to 5am. A brief questionnaire was sent to those officers along with officers on the day shift asking:

- Age and gender
- Duration with police department
- Shifts
- Whether they exercise and consider themselves healthy
- If they kept consistent sleep schedules
- Whether they suffer from health issues related to police work
- Whether they believe the health issues are directly related to the shift
- If they believed changing shifts would help
- If they believed a rotation of shifts would benefit them (slow rotation, 6 months or a year at a time)
- And if they had other suggestions to increase health

Twenty officers responded. The age range of the officers was twenty-four (24) to fifty-one (51), with a mean age of thirty (30). Duration with the police department ranged from nine months to twenty-five years. Shifts worked were predominantly night shift. The interesting answers were the ones pertaining to exercise and sleep patterns.

While fourteen officers (70%) claimed to exercise routinely, eighteen (90%) considered themselves healthy. It was an even split between those who try to maintain a consistent sleep schedule on their days off and those who alter their sleep patterns to accommodate lifestyles. Violanti, in an article published in *The Jimston Journal*, says it takes time for the circadian rhythm to adjust. If the “clock” is adjusted for just one day, it will take:

- Five days for urinary electrolytes to adjust
- Eight days for the heart rate to adjust

- Six days for body temperature to adjust

(Violanti, 2011)

Do those officers know their bodies need time to adjust?

When asked if they suffer health problems directly associated with police work, eight (40%) said yes and twelve (60%) said no. Of the eight who positively linked police work, one reported knee injuries related to chasing suspects and another reported lower back pain. The remaining six reported various ailments. One said he is more easily agitated and has less patience. Others reported sleep issues including clinical insomnia, disturbed sleep patterns, and depression. Only five of the eight believed the ailments were related to working night shift hours. So, of the twenty respondents, six (30%) believed physical and mental health issues were directly related to working night shift hours.

Interestingly, many of the officers believed changing shifts would increase physical and mental health, knowing sleeping at night is important. However, most did not wish to work rotating shifts, whether it is a slow rotation (six months or a year) or not. They preferred set shifts. After seeing these results, I questioned five officers personally. These five officers all wished to remain anonymous, but said their physical and mental health could be increased without changing shifts. They all said they preferred to work the night shift because of call volume and type. Two of the five had worked limited time during the day and did not enjoy it. Those two believed their mental health was related to their happiness. When confronted with the results of my research, they did not change their minds about working the night shift, but encouraged education about healthy diet and exercise, and wished for court appearances to be

scheduled at a more opportune time. Thus they would be able to combat the physical and mental health risks.

It is important to keep in mind that of the respondents to my questionnaire, 70% did not relate night shift hours to any medical issues. I know many of the officers and have seen signs of being over-tired. Some of these officers struggle during the early-morning hours to even complete a report in a timely manner. They have trouble concentrating. It concerns me because the world does not fall asleep at four o'clock in the morning. At any time, these officers (and I) could be responding to an armed robbery, hostage situation, homicide, or any other "hot" call. With sleep disorders, sleep disturbances, and disruption of the circadian rhythm, are their actions and decisions what they should be? Are their bodies and minds prepared to handle the outside stressors applied by police work in general? If not, what are we (supervisors and administrators) doing to combat the risks?

Combating the Risks

Police officers are never on a routine schedule. Their work hours might be set hours, but the call volume and type are not the same. Those who work night shift have hours of reactive police work mixed in with times to conduct proactive tactics followed by slow hours where little is occurring. Departments should utilize the following measures to increase officers' alertness:

- Take moderate exercise before starting work which may increase your alertness during the shift.
- Keep the light bright;

- Take regular short breaks during the shift if possible;
- Get up and walk around during breaks;
- Plan to do more stimulating work at the times you feel most drowsy;
- Keep in contact co-workers as this may help both you and them stay alert.

(Violanti, 2011)

Many departmental leaders encourage exercise either before or after shift. Fortunately, exercise routines are a constant in articles online, in the media, and on television. Thus, if leaders are not encouraging exercise, there are other avenues from which officers can learn the importance. Keeping the light bright is impossible when working at night. Officers are required to work under the cover of darkness in an effort to catch criminals. However, if leaders encourage regular breaks, they should also encourage the officers to go somewhere bright. Walking around is routine in some larger departments. Some rural districts require driving long distances between calls and should find a way for the officers or deputies to walk during shift. Stimulating work during drowsy times is not easy. As mentioned earlier, officers might begin to feel drowsy around four o'clock in the morning. Since there is not much in the way of reactive calls, and in some towns there is limited proactive work available, it becomes up to the supervisors to assign duties that stimulate the officers. All officers can keep in contact with someone with digital media today. Smart phones, computers in cars, and the police radio are options to be considered, as well as face to face encounters. Supervisors should be cognizant of long spells of quiet on radios and check on their officers frequently.

Other ways to combat the risks of health effects on night shift officers include health education. Officers should be informed about how healthy diets and reduction of caffeine,

nicotine, and other stimulants can increase healthy sleep patterns and the body's ability to metabolize foods. In my thirteen years as an officer, only self-education has kept me somewhat healthy. I have never attended any seminars or classroom training pertaining to mental health by way of diet, exercise, and sleep patterns. There are many courses about how exercise prepares one for combat against an assailant, but few prepare for combat against the unseen health issues. I had never heard of the circadian rhythm and the complications of disrupting it. I always knew when I felt "off", but simply attributed it to being sleepy. Police education is lacking in this specific category.

Conclusion

Throughout my research, numbers and percentages were consistent pertaining to officers suffering from sleep disorders and disturbances. Various other sources were looked at, but not cited in this work. An alarming number of younger police officers are showing ill effects related to night shift work. Uninformed and uneducated, these young officers will have complications in the near future that could possibly lead to a shorter life-span or reduced quality of life. From the twenty officers who responded to the questionnaire at the Fayetteville Police Department, one can see the effects are there, and some are not aware (based on my direct observations).

While many departments are beginning to realize the health effects, not many have begun to combat them. Departments, and their leaders, need to take a role in educating the officers about the risks, establish programs to promote healthy diet and exercise, and work with courts and judges to assign more opportune court times to those on night shift. Education

can be sought through various outlets. One thought is to require annual physical screenings. Most insurance companies provide a “free” physical. Departments should require them and encourage officers to look reflectively at the results. Once that is established, promote healthy lifestyles through periodic training. If the departments work with the insurance company to educate and reduce health risks, lower insurance rates might result.

Education of new recruits should begin at the academy. While academies vary in length and substance, a block of instruction should be included educating young officers about the health risks associated with police work and ways to combat the risks. A base set of instructions and suggestions should be instituted and then should adapt to the changes in science. A constantly evolving health education block would be the result. Instructors should be encouraged to constantly research health articles and attend health seminars to stay up-to-date.

Finally, departments should institute some type of fitness policy, allowing officers to exercise while “on the clock.” The policies can include incentives (paid time off or bonus checks) if departments wish, but just allowing officers to exercise while getting paid will help encourage health. The ways to quantify and qualify the exercise policies are a topic for another paper, but many currently exist.

Physically and mentally healthy officers will not only increase life expectancy and quality of life, but could reduce the number of accidents and deaths that can be linked to sleep issues.

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