

# Night nurses and exercise

## How regular activity can increase sleep quality and quantity

By Brian Salle, RN, CCRN, CSC; Susan H. Weaver, PhD, RN, CRNI, NEA-BC; Jocelyn Martinez, BSN, RN; and Nancy Maina, RN

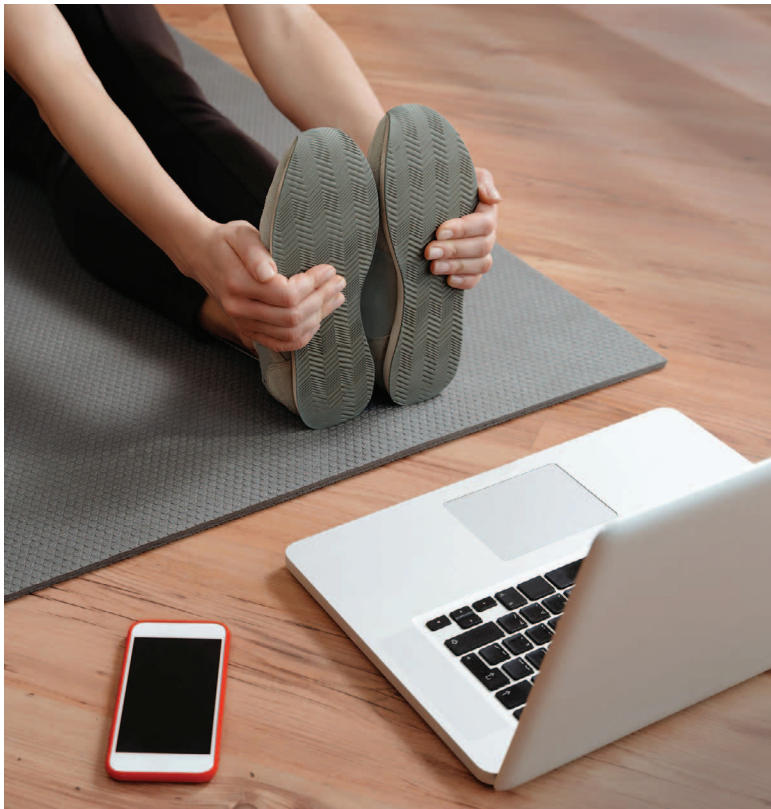
**WORK**, sleep, eat, repeat is a common routine for nurses who work at night while others sleep. Exactly how many nurses work the night shift is unknown, but we do know that working at night disrupts nurses' diurnal circadian rhythms. The result can include detrimental effects on their physical and mental health and an increased risk for many chronic conditions. Incorporating exercise into their routine can improve night shift nurses' overall health.

between 7 PM and 7 AM or 11 PM and 7 AM. Staying awake during these hours disturbs the body's circadian rhythm, resulting in poor sleep quality and an increased risk for cardiovascular disease, diabetes, and depression compared with nurses who work day shifts. Additionally, nurses who work night shifts report more work-related injuries and drowsy driving incidents than their counterparts on day shifts. The National Academy of Medicine recognizes that nurses working night shifts or rotating shifts experience performance deficits, such as medication errors, associated with sleepiness. In addition, these nurses may miss out on meetings, most of which are held during the day when they're sleeping, or think that day staff don't value or understand their work.

### Night shift and physiology

Your circadian rhythm (sleep-wake cycle) is regulated by cortisol, the fight-or-flight hormone, which jumps into action when you feel stressed. It helps reduce inflammation, increase blood sugar, regulate blood pressure, and manage how your body uses carbohydrates, proteins, and fats. It also helps regulate your body's internal clock. Normally, cortisol levels are higher in the morning, rising in the early morning to help with awakening and then slowly decreasing throughout the day. Typically, cortisol levels peak around 8 AM and are at their lowest around 3 AM. Nurses who work at night and sleep during the day frequently see the opposite effect—their cortisol levels remain elevated throughout the evening and decrease in morning.

Long-term circadian rhythm disruption results in cortisol secretion pathway hyperactivity and chronic cortisol elevation. Difficulty sleeping leads to further disruption of the body's cortisol levels, creating a pattern of sleep dep-



### Shift work effects

The U.S. Bureau of Labor Statistics defines night shift as the hours between 9:00 PM and 8:00 AM. For most nurses, that means working

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riation and cortisol disruption. Abnormal cortisol levels also can increase the body's inflammatory responses, increasing the risk for chronic conditions, such as diabetes, certain cancers, and cardiovascular diseases (specifically, atherosclerosis and hypertension).

Increased appetite associated with cortisol disruption can lead to poor dietary choices that are higher in fat and carbohydrates. Frequently, nurses rely on excessive levels of caffeine to remain awake, which can further compound sleep deprivation. Over time, this eventually leads to weight gain.

### Exercise benefits

Exercise has been shown to reduce stress and anxiety, as well as reduce weight and improve cardiovascular health. According to Gabriel and Zierath, exercising at work has a positive effect on night-shift workers' exercise behaviors, stress levels, and musculoskeletal functioning. They also report that habitual exercise, regardless of intensity, performed at approximately the same time each day can help "reset" the body's internal clock, improve sleep quality, and reduce the hormonal imbalances that lead to inflammation.

### Recommendations

*The Physical Activity Guidelines for Americans* recommends that adults exercise by walking, running, dancing, and playing. Although even 5 minutes of physical activity has real health benefits, the recommendation is that adults get at least 150 minutes of exercise throughout the week along with muscle-strengthening activities on two or more days a week.

However, many night shift nurses say they feel too mentally and physically fatigued to exercise. The good news is that exercise isn't one-size fits all—many options are available. (See *Night shift exercise in action*.)

### How to begin

When starting an exercise routine, take it slow and try to have fun. Going all out might be acceptable for some. However, for most people who haven't exercised in some time, high-intensity workouts may cause extreme muscle soreness and injury, which could reduce motivation and commitment. Enlist a workout partner to help make exercise a social activity, increase your enjoyment, and improve your motivation and adherence.

## Night shift exercise in action

The nurses working the night shift on our orthopedic unit focused on getting sleep rather than exercise, but that changed after a journal club discussion about an article on the consequences of night shift work on home, family, and social life. We decided to add exercise into our routine by starting a night shift group exercise program.

We hold group exercise sessions almost every night between 3:30 AM and 4:30 AM. We meet in the physical therapy gym in our unit after medication and patient care needs are met. We workout to a YouTube exercise video, usually about 6 minutes long, selected by a nurse or patient care technician. We stagger sessions so everyone who wants to can attend. Ancillary team members from other clinical areas sometimes join us.

These group exercise sessions have increased joy and camaraderie among our team members. Fitness leaders have emerged among the group. We already know which nurse or patient care technician will make us work hard for the full 6-minute session, resulting in good-natured groans and moans. We return to our patient assignments energized. It's better than coffee.

### Where and when

Lack of time is one of the biggest barriers to initiating an exercise program. If possible, find opportunities to incorporate activity into your work routine. For example, go outside for a walk or climb some stairs during a break. A good starting recommendation would be to exercise for 10 minutes at a time, three times per shift, for a total of 30 minutes, 3 days each week. (See *Working out at work*.)

If you're unable or uncomfortable with exercising at work, consider exercising before your shift. You may find that you feel more energized for work. According to Smith, some nurses who've tried exercising after their shift have found that they feel drained of energy and work out halfheartedly. However, a study by Torquati and colleagues found that for some Australian nurses, exercise after an especially tough night shift helped relieve stress. Nurses in this study also enjoyed cycling to work.

### Join in

Nurses who work night shifts also might consider joining Healthy Nurse, Healthy Nation® (HNHN) Grand Challenge, the American Nurses Association's national movement to improve the health and well-being of nurses. Physical activity is one of HNHN's five health domains (the others are nutrition, rest, quality of life, and safety). Discussion boards, blogs, mini-challenges, and other options are

## Working out at work

Follow these suggestions to find opportunities for physical activity at work:

- Keep moving throughout your shift.
- Make it a habit to take the stairs, not the elevator.
- Stand when you're charting.
- Find a colleague to be your walking buddy, and take a break during your shift to "walk and talk" around the unit or the hospital. When the weather's nice, and if it's safe, walk outside.
- Count your steps. If you track your steps with an app or device when working night shift, bring a calculator because at 00:01 a new day starts and your steps are divided between two days (most step-tracking apps are set from 12:00 AM to 12:00 AM).
- Try the Johnson & Johnson Official 7 Minute Workout app ([apps.apple.com/app/apple-store/id784797900](https://apps.apple.com/app/apple-store/id784797900)) to incorporate a short exercise session at work.
- Join Healthy Nurse, Healthy Nation® ([hnhn.org](http://hnhn.org)) to learn about more exercise activities and receive support from other nurses.

available for connecting with nurses and taking action to improve your overall health.

Consider making "healthy night nurses" an agenda item for your night council meetings

and including a quick exercise or stretch at each meeting. Torquati and colleagues found that talking about exercising had a positive influence on night-shift nurses' exercise habits. To make it even more fun, create competitions or challenges. Track steps with each other or create nursing unit teams.

### Reap the rewards

Investigate evidence-based strategies to increase exercise and improve your health and well-being. Find the right type of exercise for you—whether it's solo, in a group, at a gym, at work, or at home. The more you enjoy your time exercising, the more likely you'll stick with a program and reap the long-term rewards.

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Access references at [myamericannurse.com/?p=292618](http://myamericannurse.com/?p=292618).

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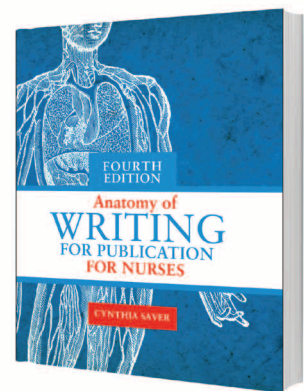
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by CYNTHIA SAVER, MS, RN

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