

Strategies For Shift Workers

Shifts and biological clocks

Shifts affect sleep-wake cycles, but the most demanding ones are those that include a night shift. Since we are diurnal (day-active) animals, our biological clock sends signals during the day. It is therefore extremely difficult for night-workers to sleep in the daytime. This is the reason why the most frequent complaints reported by shift workers are fatigue.

Circadian rhythms control not only the timing of sleep and waking, but also the timing of all physiological and psychological functions. It means, for example, that our digestive systems are ready to process food during the day and not during the night. When meal times are adapted to meet the requirements of a night shift, digestive problems increase. In the long-term, night-workers have also been shown to be at higher risk for cardiovascular disorders. Imbalance in hormonal regulation is another problem with the night-work schedule and has been associated with metabolic, reproductive and mood difficulties. Finally, the fact that other family members and friends are living on a different schedule, further increasing the feelings of irritability and depression.

Jet lag compared to night work

Jet lag also happens after air travel crossing multiple time zones. The constellation of complaints including sleep problems, low alertness levels, digestive difficulties and "jet lag syndrome". This syndrome disappears usually in a few days as the biological clock adapts to the new time zone. Such an adaptation is extremely rare for the night-workers who are used to sleeping at night and waking during the day, all day-night cues, and especially the light-dark cycle, remain the same and prevent the adaptation of the biological clock. Shift-workers who have a permanent night schedule and do not have to rotate between night and day shifts, prefer to return to a day-oriented life when they have some days off. The adaptation provided by the biological clock is cancelled.

In the long-term, in shift work there is an accumulation of the difficulties over days, weeks and years. After the first few months, there is no further adaptation to night work. The frequency and intensity with a longer exposure to night work, often after 4 or 5 years on a fixed or rotating night schedule. Age is also an important factor: a shift-worker's ability to sleep in the daytime. It is not uncommon to observe a sudden intolerance to night work around the age of 40 in workers who have been working nights for 20 years.

Shift tolerance with night work?

Shift tolerance is abnormal and it is normal to experience all kinds of difficulties with that work schedule. This being said, it is also important to know that some people have no difficulties and so for their entire working life and stay happy and healthy. They represent about 10% of the workers attempting night work. In most cases, those workers are natural "night owls" who like to go to bed and to wake up at late hours. They are often "short sleepers" which means that they feel rested and alert with as little as 6 hours of sleep per day. They are healthy and very rarely sick. In some of them, the biological clock adapts to the work schedule, sending the wake signal during night work. However, for some reasons, in others the clock remains on a day schedule but seems to send a more discreet signal that does not perturb daytime sleep.

For the rest, about 20% of the workers attempting night work cannot tolerate the schedule at all. They usually have the reverse characteristics of tolerant night-workers: they are unable to sleep in the daytime. They need lots of sleep to feel rested and they accumulate severe sleep deprivation very rapidly. These people often have to find another work schedule.

Dealing with night work

Night-workers (about 70%) can tolerate their schedule, with varying degrees of difficulty. Here are some strategies that may help to decrease the intensity of the long-term impact on physical and mental health.

Rest is sleep. It is absolutely crucial that you give sleep first priority over everything else, and that includes family, friends, shopping, housekeeping and even your job. Any difficulty related to night shiftwork. Sleep deprivation reduces your energy, impairs your mood, contributes to hormonal and metabolic disruptions and accumulates stress. Against the wake signal of your biological clock, there are actions you can take that can make a difference.

Dark environment—Dark shades in the bedroom windows will facilitate not only a better sleep but also a better adjustment of your biological clock. Get an air-conditioner for a cool environment and the white noise from the air-conditioner will help to cover traffic and other noises so frequent during the daytime. Some night-workers sleep in the basement to sleep during the daytime: it is cooler, darker and quieter compared to their usual bedroom. Minimize sleep interruptions: tell your family and friends you are sleeping and should not be disturbed. Turn off all bells and use an answering machine.

Regular sleep schedule—Try to always sleep at the same time. Not only will it be easier to sleep, but it will also help to train other family members and friends not to disturb you. If possible, it may help to have a fixed period of time (from 9 to 11 a.m. for example) when you always sleep, on both work days and days off. This is called "anchor sleep". A regular clock at a time favoring sleep after night work without causing major problems on days off. For most people, going to bed as soon as possible after the night shift will help. Keep the same bedtime routine when you sleep during the night and during the day: brush your teeth, put on your pajamas, read a page or two of your bedside book, etc. This routine will help to prepare your mind and body for sleep. The worst thing to do is to nap on the couch in front of the TV...

Nap—Get all the sleep you can. If it is possible for you, an evening nap before going to work will prevent part of the accumulation of sleep loss and improve your alertness at work. If possible, a 1 hour nap in a dark and quiet room will help you to feel more rested.

Avoid using caffeine at least 5 hours before bedtime—This is not an easy recommendation to follow because it puts your last cup of coffee in the middle of your night shift and you need a stimulant later on. The problem is that caffeine stays in the system for a long time. It will not prevent you falling asleep, because you are so tired at the end of the night shift. You may need 2-3 hours later and have a hard time going back to sleep. The same will happen with alcohol: it may help you to relax after work, but will impair the quality of your sleep after work. Eat a healthy and nourishing breakfast before going to bed. Avoid fatty and spicy food. You will sleep better and hunger will not wake you up too soon.

Do not rely on hypnotics to get your daytime sleep—Difficulty sleeping in the daytime after a night shift is not a transitory but a chronic problem. Regular use of hypnotics increases tolerance and dependence and may impair your night time sleep on days off. However, you need to get as much sleep as you can and, after discussion with your physician, you may need to use sleep medication.

Biological clock

Strategies are currently under investigation to find ways to adapt the biological clock to a reversed sleep-wake schedule. These experimental treatments include melatonin administration or even exercise programs scheduled at appropriate times. Available data suggest that the efficacy of these treatments can be very good. However, the long-term situation of a night worker's situation is not demonstrated. Because they all take a few days to operate, they are not appropriate for repeated rotations between day- and night shifts. It is not possible to artificially adjust the biological clock to a reversed sleep-wake schedule, but most night-workers are not ready to transfer their night work problems to day work.

Life-style...

Shift work has so many potential negative effects on your health, it is important that you reduce, as much as possible, all other risk factors in your life-style. Night work accentuates the risk of cardiovascular disease associated with other risk factors, specifically smoking, a sedentary life and obesity. What was perceived as not simply a risk that added to others, but rather a factor which multiplied the detrimental effects of the other risk factors. Prevention is therefore very important.