

Always using the same 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...

#### *Have a 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. Even if you don't sleep, a 1 hour nap in a dark and quiet room will help you to feel more rested.

#### *Refrain from 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 may feel the need for 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. However, you will wake up 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 afterwards. Have a light but high-fibre 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.

#### *Try not to 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 the risks of 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 decide to use intermittent sleep medication.

### **2) Reset your biological clock**

Experimental strategies are currently under investigation to find ways to adapt the biological clock to a reversed sleep-wake schedule. These experimental treatments include bright light exposure, melatonin administration or even exercise programs scheduled at appropriate times. Available data suggest that the efficacy of these treatments can be very good. However, their applicability to the nightworker'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-oriented life. It might be possible to artificially adjust the biological clock to a reversed sleep-wake schedule, but most nightworkers are not ready to transfer their nightwork problems to day work or (even worse) to days off!

### **3) Adopt a healthy life-style...**

Because night shiftwork 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. An epidemiological study found that nightwork accentuates the risk of cardiovascular disease associated with other risk factors, specifically smoking, a sedentary life and obesity. What was particularly disturbing was that nightwork was 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.

#### **Suggested reading:**

Akerstedt T & Landstrom U. (1998) Work countermeasures of night shift fatigue. *International Journal of Industrial Ergonomics* 21:167-178.

Heslegrave R.J. (1998) Asleep at the switch: coping with shift work. *The Canadian Journal of Diagnosis*, February 1998, p. 78-92.

Shapiro C.M., Heslegrave R.J., Beyers J., Picard L. *Working the Shifts: A self-Health Guide.* (Practical strategies for improving the way you work, sleep, live and play.) JoliJoco Publications, Inc. 1997 (ISBN 0-88753-292-6) 112 pages.

#### **In French:**

Dumont M. (1999) Le travailleur de nuit: donnez-lui l'heure juste. *Le Clinicien*, février 1999, p. 124-137.

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# STRATEGIES FOR SHIFTWORKERS



**CANADIAN SLEEP SOCIETY**

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## Work schedules and biological clocks

Many work schedules affect sleep-wake cycles, but the most demanding ones are those which include a night shift. Since we are diurnal (day-active) animals, our biological clock sends a powerful signal to keep us awake during the day. It is therefore extremely difficult for nightworkers to sleep in the daytime. This is the reason why the most frequent complaints reported by shiftworkers are those of sleep difficulties and fatigue.

The biological clock controls 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 and metabolic functions 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 occur and blood cholesterol increases. In the long-term, nightworkers have also been shown to be at higher risk for cardiovascular disorders. Imbalance in hormonal regulation is another consequence of the reversed sleep-wake schedule and has been associated with metabolic, reproductive and mood difficulties. Finally, the fact that other family members and friends are living on a fixed day schedule can be a source of tensions and isolation, further increasing the feelings of irritability and depression.

## Jet lag syndrome compared to nightwork

Similar difficulties also happen after air travel crossing multiple time zones. The constellation of complaints including sleep problems, low alertness levels, digestive difficulties and irritability is called the "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 nightworker. First, even if the worker is awake at night and sleeps during the day, all day-night cues, and especially the light-dark cycle, remain the same and prevent the adaptation of the biological clock. Second, most nightworkers, even those 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. Each time, the small adaptation achieved by the biological clock is cancelled.

Contrary to the jet-lag situation, in shiftwork there is an accumulation of the difficulties over days, weeks and years. After the first few months, there is no further adaptation to nightwork. Problems tend to increase in 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: as you get older, it gets more difficult to sleep in the daytime. It is not uncommon to observe a sudden intolerance to nightwork around the age of 40 in workers who have been working nights for 20 years without too much difficulty.

## Who copes best with nightwork?

Working at night 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 difficulty working nights. They can do 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", with a spontaneous tendency 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 also naturally robust, healthy and very rarely sick. In some of them, the biological clock adapts to the work schedule, sending the wake signal during nightwork. However, for some reasons that are still not understood, in others the clock remains on a day schedule but seems to send a more discreet signal which does not perturb daytime sleep.

On the other extreme, about 20% of the workers attempting nightwork cannot tolerate the schedule at all. They usually have the reverse characteristics of tolerant nightworkers: they are "early birds" and are almost 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 job if they cannot change their work schedule.

## Strategies to cope with nightwork

The majority of nightworkers (about 70%) can tolerate their schedule, with varying degrees of difficulty. Here are some strategies that may help to

decrease the intensity of these difficulties and to limit their long-term impact on physical and mental health.

### 1) Sleep!

What you need most is sleep. It is absolutely crucial that you give sleep first priority over everything else, and that includes family, friends, shopping, housekeeping and even golf! The lack of sleep is the first difficulty related to night shiftwork. Sleep deprivation reduces your energy, impairs your mood, contributes to hormonal and metabolic disruptions and accumulates over time. Even if you have to sleep against the wake signal of your biological clock, there are actions you can take that can make a difference.

#### *Control the 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: it is easier to sleep in 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 nightworkers successfully use a bedroom 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 that your sleep is important and should not be disturbed. Turn off all bells and use an answering machine

#### *Keep a 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 at that time of day. When 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" and helps to stabilize the biological clock at a time favouring sleep after nightwork without causing major problems on days off. For most people, going to bed as soon as possible after the night shift will assure a deeper and longer sleep. Keep the same bedtime routine when you sleep during the night and during the day: brush your teeth, put on your pyjamas, read a page or two of your bedside book, etc.