

# SHIFT WORK SLEEP DISORDER

## *What is shift work sleep disorder?*

Shift Work Sleep Disorder is a condition that sometimes results from working a shift other than the traditional daytime (9 a.m. to 5 p.m.) shift. There is a disruption in the normal human sleep-wake pattern, or circadian rhythm, resulting in undesirable consequences.

## *What causes shift work sleep disorder?*

Shift work sleep disorder involves a problem with your body's 24-hour internal clock, or circadian rhythm. Light and darkness help your body know when to be active and when to rest. Light cues the brain to make less melatonin and to be awake, while darkness signals your body to increase production of melatonin thereby promoting sleep. When you work at night and sleep during the day, your body's internal clock needs to reset to let you sleep during the day. Sometimes that is difficult to accomplish.

This sleep disorder usually is a problem for people who work all night. But people who work an early morning shift (e.g. starting at 4 a.m.) also may have sleep problems. Rotating shift work also can be a challenge. In these shifts, people work the day shift on some days and the night shift on others.

## *What are common signs and symptoms of shift work sleep disorder?*

The most common short-term consequences and symptoms of shift work sleep disorder are:

- Excessive sleepiness during the work shift
- Poor daytime performance
- Irritability
- Inability to obtain a good quality of sleep during the sleep period due to insomnia
- Absenteeism and increased use of sick leave
- Sleepiness-related accidents at work, while commuting home from work or even on days off
- Impaired social interactions and disrupted family life

Potential long-term consequences of shift work sleep disorder are:

- Chronic sleep disturbance, even after leaving the job.
- Increased risk of gastrointestinal problems including peptic ulcers
- Cardiovascular disease risk is increased by 40% (researchers assume the connection between heart disease and shift work is based on a combination of behavioral, psychosocial and physiological factors)
- Increased occurrence of type II diabetes mellitus
- Metabolic problems (e.g. high cholesterol and triglyceride levels)

- High blood pressure may correlate; however, research is limited
- Depression and impaired quality of life
- Increased risk of alcohol and drug abuse

### ***How do healthcare providers make the diagnosis of shift work disorder?***

Healthcare providers follow the clinical diagnostic criteria established by the American Academy of Sleep Medicine to make this diagnosis. These criteria include the following:

- Patients must have significant insomnia or excessive sleepiness that interferes with functioning and is associated with a work schedule that overlaps the usual sleep period.
- Symptoms must be associated with a shift work schedule over the course of at least one month.
- Misalignment between the body clock and environmental clock manifested by loss of a normal sleep-wake pattern has been documented by a sleep log or diary, and laboratory or sleep recordings.
- Sleep disturbance is not explained by another sleep disorder; a medical, neurological or psychiatric disorder; medication use; or substance abuse disorder.

### ***How can shift work sleep disorder be treated non-pharmacologically?***

Sometimes, issues related to shift work sleep disorder cannot be corrected unless a patient is able to switch to a more traditional work schedule, working the daytime shift and sleeping at night. This is often not feasible and therefore, some behavioral modifications may aid in resetting the body's internal clock, or circadian rhythm. Some suggestions that will ensure optimal sleep in those with this condition include:

- The room where one sleeps should be dark. Blackout drapes can be used or an eye mask can be worn. It sometimes helps to place a towel over bright digital devices, such as a clock or a DVD player.
- Sunglasses can be worn on the drive home in the daylight hours after working nights. This can counter some of the effect of light so that the body will be more ready to sleep when you get home.
- Earplugs can also be beneficial while sleeping to block sounds.
- A "white noise" machine is an alternative to ear plugs if there is distracting sound in the house or neighborhood that cannot be avoided.
- One should avoid sleeping in a room that is too hot or too cold.
- Alcohol and caffeine should be avoided in the hours leading up to bedtime.
- Family members should be asked not to wake you during your sleep time, except for an emergency.
- If possible, one should attempt to maintain a consistent sleep schedule seven days a week, even on their days off.

- Taking late afternoon or early evening naps scheduled daily for 1 to 1.5 hours are suggested. This helps to avoid multiple brief daytime naps and to consolidate sleep to the desired time.
- Exercising for at least 20 minutes may be of benefit but should be avoided close to bedtime.

***What are some pharmacological means of treating the symptoms of shift work sleep disorder?***

The dietary supplement melatonin taken three hours (i.e. 3 mg dose) prior to sleep time may help improve sleep in those with shift work sleep disorder. A man-made form of melatonin is available without a prescription.

Nonbenzodiazepine hypnotic medications, like zolpidem (Ambien), eszopiclone (Lunesta) and zaleplon (Sonata) may be necessary to alleviate insomnia resulting from shift work sleep disorder. These do not significantly affect sleep architecture and, unlike benzodiazepines, are not associated with a rebound phenomenon.

The wakefulness promoting agents, modafinil (Provigil) or armodafanil (Nuvigil) can be used to increase alertness in shift workers who suffer from excessive sleepiness during their work shift. Phototherapy can also be used prior to a work shift to help induce wakefulness in shift works as well.

Patient education adapted from:

<http://www.webmd.com/sleep-disorders/guide/shift-work-sleep-disorder-topic-overview>

<http://emedicine.medscape.com/article/1188944-overview>

<http://www.aasmnet.org/practiceparameters.aspx?cid=116>