



fact sheet

SHIFT WORK SLEEP DISORDER

Shift Work Sleep Disorder (SWSD) (ICSD category 307.45-1) ¹

- According to the American Academy of Sleep Medicine (AASM) International Classification of Sleep Disorders (ICSD), shift work sleep disorder (SWSD) is classified as a circadian rhythm sleep disorder.
- Characterized by extreme sleepiness, insomnia, headaches and difficulty concentrating, SWSD particularly affects those who frequently rotate shifts or work at night, which is contrary to the body's natural circadian rhythms.

Shift work sleep disorder

Shift workers are people who work non-traditional hours, usually between 10 p.m. and 6 a.m., and suffer from sleep problems due to disruptions in their normal sleep cycle.²

- There are more than 15 million Americans, or 20 percent of the workforce, who are shift workers, with a 3 percent increase every year.³
- Sixty to 70 percent of workers on rotating shifts complain of problems with sleep disturbance or sleepiness, and general fatigue is more frequently reported by shift workers than day workers.⁴
- Up to two thirds of shift workers fall asleep on the job at least once a week.
- Shift workers have been shown to experience reduced concentration, attention span and reaction time as well as gastrointestinal and digestive problems and an increased risk for heart attacks.³
- Night shift workers are prime candidates for developing health problems associated with lack of sleep and are at a greater risk of being injured on the job because of sleep deprivation.
- Patients with SWSD are twice as likely to have a work-related accident.
- Some estimates show sleepy workers cost U.S. businesses \$18 billion annually.
- Sick leaves are reported in 63 percent of shift workers compared with 34 percent in permanent day workers.

Shift workers

¹ American Sleep Disorders Association. *International Classification of Sleep Disorders, Revised: Diagnostic and Coding Manual*. Rochester, Minn: American Sleep Disorders Association; 1997. Kryger MH, Roth T, Dement WC, eds. *Principles and Practice of Sleep Medicine Third Edition*. Philadelphia, Pa: WB Saunders Co; 2000. Lee-Chiong TL, Sateia MJ, Carskadon MA., eds. *Sleep Medicine*. Philadelphia, Pa: Hanley & Belfus, Inc.; 2002.

² *The Bureau of Labor Statistics* (<http://www.bls.gov/>)

³ Beers TM. Flexible schedules and shift work: replacing the "9-to-5" workday? *Monthly Labor Review*. June 2000:33-40.

⁴ U.S. Congress, Office of Technology Assessment, Biological Rhythms: Implications for the Worker, OTA-BA-463. Washington, DC: US Government Printing Office; September 1991.

SWSD is a recognized disorder

- According to the American Academy of Sleep Medicine and the International Classification of Sleep Disorders, shift work sleep disorder consists of symptoms of insomnia or excessive sleepiness that occur as transient phenomena in relation to work schedules.⁵
- SWSD is also listed in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) as a circadian rhythm sleep disorder. The DSM-IV defines a circadian rhythm sleep disorder as⁶:
 - A persistent or recurrent pattern of sleep disruption leading to excessive sleepiness or insomnia that is due to a mismatch between the sleep-wake schedule required by a person's environment and his or her circadian sleep-wake pattern.
 - The sleep disturbance causes clinically significant distress or impairment in social, occupational and other important areas of functioning.
 - The disturbance does not occur exclusively during the course of another sleep disorder or other mental disorder.
 - The disturbance is not due to the direct physiological effects of a substance (e.g., a medication or abuse of a drug) or a general medical condition.
- Excessive sleepiness associated with SWSD can have severe consequences, causing 50 percent of all accidents at work.
- Excessive sleepiness can cause lapses in attention and increased reaction times, resulting in frequent performance errors.

Circadian rhythms and sleep

- Circadian rhythms are the natural measurement of the psychological and biological rhythms of the body. The body's major circadian regulator is located in the suprachiasmatic nucleus (SCN) of the hypothalamus in the brain. The SCN controls many biological rhythms including body temperature, the sleep-wake cycle and a variety of hormonal changes.
- The normal sleep-wake rhythm is a 24-hour rhythm that is synchronized to the circadian temperature and hormonal rhythms. However, the rhythm may become desynchronized when the sleep-wake cycle is forced to a new time, with the circadian regulator remaining on the original schedule. Shift work and jet lag are two of the most common disruptions to circadian rhythms.
- Working at night goes against circadian rhythms. Sleep can be disrupted and quality of sleep compromised by having a work schedule that is contrary to natural sleeping patterns. Because they are awake when circadian rhythms dictate that the body should be at rest, people who work late-night shifts often have problems falling asleep, staying asleep or waking up. Trying to maintain a healthy pattern of

⁵ *ICSD – International Classification of Sleep Disorders: Diagnostic and Coding Manual*. Diagnostic Classification Steering Committee, Thorpy MJ, Chairman. Rochester, Minn: American Sleep Disorders Association; 1990.

⁶ *Diagnostic and Statistical Manual of Mental Disorders DSM-IV*. American Psychiatric Association; 1994.

sleep during the daytime is difficult because they are trying to sleep when their bodies want them to be awake. Daytime noises can disrupt sleep, and social obligations can make it difficult to sleep during the day. Light can also disrupt sleep because our bodies tend to be most at rest when it is dark.