Definition: sleep disorder from *The Penguin Dictionary of Psychology*

An umbrella term for any significant departure from the normal sleep-waking cycle. Contemporary terminology distinguishes between the ORGANIC *SLEEP DISORDERS, which are caused by neurological or physiological factors, and the NONORGANIC *SLEEP DISORDERS, which are regarded as primarily psychogenic. The latter category is subdivided into the DYSSOMNIAS, which include disorders in the amount, quality or timing of sleep, and the PARASOMNIAS, which include disorders marked by abnormal events occurring during sleep. See each of these terms for more detail.

Summary Article: Sleep Disorders

From *Encyclopedia of Epidemiology*

An estimated 70 million people in the United States suffer from sleep problems, and more than half of those with sleep problems have a sleep disorder that is chronic. The four most prevalent sleep disorders are insomnia, obstructive sleep apnea, narcolepsy, and periodic limb movements in sleep, with sleep apnea accounting for nearly 80% of all sleep diagnoses in sleep centers in the United States. About 30 million American adults have frequent or chronic insomnia. Approximately 18 million have obstructive sleep apnea, but only 10% to 20% have been diagnosed. An estimated 250,000 people have narcolepsy, and more than 5% of adults are affected by periodic limb movements in sleep syndrome.

Sleep disorders have major societal impacts. Each year, sleep disorders, sleep deprivation, and excessive daytime sleepiness (EDS) add approximately $16 billion annually to the cost of health care in the United States and result in $50 to $100 billion annually in lost productivity (in 1995 dollars). According to the National Highway Traffic and Safety Administration, 100,000 accidents and 1,500 traffic fatalities per year are related to drowsy driving. Nearly two thirds of older Americans have sleep difficulties, and the prevalence of sleep problems will increase as the older adult population increases. The 1990s has seen a significant increase in our awareness of the importance of diagnosing and treating sleep disorders. The prevalence rates, risk factors, and treatment options will be reviewed for each of the four major sleep disorders.

**Insomnia**

Insomnia is the most commonly reported sleep complaint across all stages of adulthood. An estimated 30 million American adults suffer from chronic insomnia, and up to 57% of noninstitutionalized elderly experience chronic insomnia. In the United States, total direct costs attributable to insomnia are estimated at $12 billion for health care services and $2 billion for medications. Emerging evidence suggests that being female and old age are two of the more common risk factors for the development of insomnia; other predisposing factors include excess worry about an existing health condition, lower educational level, unemployment, and separation or divorce. Insomnia is comorbid with anxiety and depressive disorders and may lead to the development of psychiatric disorders. Insomnia is correlated with high levels of medical use and increased drug use, as well as increased psychosocial disruption including poor work performance and poor memory.

**Insomnia Treatments**

https://search.credoreference.com/content/topic/sleep_disorders
Traditional management of insomnia includes both pharmacologic and nonpharmacologic treatments. Current guidelines suggest that chronic insomnia be treated with a combination of nonpharmacologic interventions, such as sleep hygiene training, relaxation training, stimulus control training, cognitive behavioral therapy, or sleep restriction/sleep consolidation therapy, and pharmacologic interventions. Medications prescribed for insomnia range from newer agents such as zolpidem, zaleplon, and eszopiclone to older agents such as antidepressants (e.g., amitriptyline or trazodone) and benzodiazepines (e.g., clonazepam, lorazepam). Medications are not typically indicated for long-term treatment of insomnia, except for a medication recently approved by the Food and Drug Administration, eszopiclone.

**Obstructive Sleep Apnea**

Obstructive sleep apnea (OSA) is a medical condition characterized by repeated complete (apnea) or partial (hypopnea) obstructions of the upper airway during sleep. It is prevalent in 2% to 4% of working, middle-aged adults, and an increased prevalence is seen in the elderly (~24%), veterans (~16%), and African Americans. Being an obese male is the number one major risk factor for OSA. The risk of OSA increases significantly with increased weight, and more than 75% of OSA patients are reported to be more than 120% of ideal body weight. Other risk factors that can contribute to OSA include anatomical abnormalities of the upper airway (e.g., large uvula, enlarged tonsils, large neck circumference).

Estimates of health care costs for OSA patients are approximately twice that of matched, healthy controls. This cost difference is evident several years prior to the diagnosis. OSA is associated with a higher mortality rate.

**Consequences of OSA**

OSA is associated with several cardiovascular diseases, most notably hypertension, ischemic heart disease, heart failure, stroke, cardiac arrhythmias, and pulmonary hypertension. Compared with the general population, OSA patients have twice the risk for hypertension, three times the risk for ischemic heart disease, and four times the risk for cerebrovascular disease. The evidence supporting the link between OSA and hypertension is compelling, with OSA now officially recognized as an identifiable cause of hypertension. Alterations in sleep architecture cause sleep to be nonrestorative, resulting in mild to severe EDS. EDS and/or hypoxia due to OSA are associated with a number of neurocognitive, mood, and behavioral consequences, including lowered health-related quality of life, impaired cognitive performance, impaired driving ability (two to seven times increased risk of a motor vehicle accident), dysphoric mood, psychosocial disruption (e.g., more intensely impaired work performance and higher divorce rates), and disrupted sleep and impaired quality of life of spouses of OSA patients.

**OSA Treatments**

The goals of any OSA treatment are the elimination of breathing events and snoring, maintaining high blood oxygen levels, and improving symptoms. Categories of OSA treatments include medical devices (continuous positive airway pressure therapy and oral appliances), behavioral recommendations (weight loss, positional therapy), and surgical procedures. Nasal continuous positive airway pressure (CPAP) is the treatment of choice for this condition, with metaanalytic reports of numerous randomized controlled trials showing that CPAP improves both objectively and subjectively measured daytime sleepiness as well as health-related quality of life. CPAP has been shown to normalize sleep architecture and reduce blood pressure. Oral appliances (OAs) alter the oral cavity to increase airway
size and improve patency. OAs reduce the number of apneas and hypopneas and reduce sleepiness levels. Weight loss helps reduce the number of apneas and hypopneas in obese OSA patients, reduces oxygen desaturations, and improves sleep architecture. Positional therapies, primarily indicated for mild sleep apnea, are based on the observation that most disordered breathing occurs in the supine (i.e., lying on the back) position, so the therapy encourages sleep in the prone (i.e., lying face downward) or side positions. There are a wide variety of surgical treatments that are now considered secondary treatments if other treatments do not work well or are not well tolerated.

**Narcolepsy**

Narcolepsy is a chronic neurological disorder caused by the brain's inability to regulate sleep-wake cycles normally. It is estimated that approximately 250,000 adult Americans are affected by narcolepsy. Narcolepsy is the most common neurological cause of EDS. Direct medical costs for narcolepsy can cost the patient more than $15,000 per year. The impact of narcolepsy is often more severe than that of other chronic diseases, such as epilepsy. Genetics may play a large role, with first-degree relatives having a 40-fold increased risk for narcolepsy. Men and women appear to be at equal risk.

The two most common symptoms of narcolepsy are EDS and cataplexy. Cataplexy is a sudden loss of muscle tone and strength, usually caused by an extreme emotional stimulus.

Narcoleptic patients also can experience sleep paralysis, falling asleep at inappropriate times (conversations, dinner), psychosocial problems, and EDS. EDS comprises both a strong background feeling of sleepiness and sometimes an irresistible urge to sleep suddenly. These sudden naps associated with narcolepsy can last minutes to an hour and occur a few times each day. Furthermore, as a consequence of EDS, patients with narcolepsy often report problems with inattention, blurred vision, cataplexy, poor memory, and driving without awareness (automatic behaviors).

**Narcolepsy Treatments**

Because narcolepsy is a chronic condition, treatment focuses on long-term symptom management through medications and behavioral treatments. Medications for treatment of narcolepsy are aimed at managing the daytime symptoms of the disorder. EDS can be reduced by a newer, nonamphetamine “wake promoting agent” named modafinil and by amphetamine derivatives (dexamphetamine, methylphenidate). Side effects from the amphetamine-type drugs are common and include tolerance, irritability, and insomnia. Drugs suppressing rapid eye movement sleep can help in reducing cataplexy; the newest one is xyrem (gamma-hydroxybutyrate). The goals of behavioral therapies are to promote behaviors that can alleviate daytime symptoms. The primary therapy is planned research showing that scheduled daytime naps are effective in helping reduce daytime sleepiness.

**Periodic Limb Movements in Sleep**

Periodic limb movements in sleep (PLMS) is a sleep phenomenon characterized by periodic episodes of repetitive and highly stereotyped limb movements. Periodic limb movements are defined by their occurrence in a series (four or more) of similar movements with a wide range of periods and duration between 0.5 and 5.0 s. It has been estimated that 5% of those below the age of 50 years will have PLMS, while more than 30% of individuals aged above 65 years may have a significant number of PLMS. PLMS may begin at any age although prevalence increases markedly in elderly healthy people. In patients with periodic limb movement disorder, insomnia and EDS are common complaints. There is significant overlap between PLMS and restless legs syndrome (RLS), with more than 80% of RLS...
patients having PLMS as well.

**PLMS Treatments**

Treatment of PLMS consists primarily of pharmacological and secondarily of nonpharmacological interventions. Pharmacological agents recommended for use include dopaminergic agents, anticonvulsants, opioids, and sedatives/hypnotics. Nonpharmacological treatment of PLMS primarily consists of advising the patient of good sleep hygiene.

*See also*
Aging, Epidemiology of; Hypertension; Obesity; Vehicle-Related Injuries

**Further Readings**

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