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Delayed Sleep Phase Disorder (DSPD)

Delayed sleep phase disorder is characterised by habitual sleep-wake timing that is delayed, usually more than two hours, relative to conventional or socially acceptable timing. Affected individuals complain of difficulty falling asleep at a socially acceptable time, as required to obtain sufficient sleep duration on a school or work night. Once sleep onset occurs, it is reportedly of normal duration. These individuals also experience difficulty arising at a socially acceptable wake time, as required to prepare for school or work. When allowed to follow his or her preferred schedule, the patient's timing of sleep is delayed.

The exact mechanisms responsible for DSPD are unknown. An abnormal interaction between the endogenous circadian rhythm and the sleep homeostatic process that regulates sleep and wakefulness may play an essential role in the pathophysiology of DSPD. In children and adults, voluntary behaviours such as staying awake late at night and waking up late in the morning or afternoon may result in an abnormal relationship between the endogenous circadian rhythm and the sleep homeostatic process that regulates sleep and wakefulness.

A delayed sleep pattern typically begins during adolescence. Onset in early childhood is also described, especially in familial cases; the onset may follow psychological, medical, or environmental stressors. Without treatment, DSPD is a chronic condition that may last into late life. However, with increasing age across adulthood, the timing of the sleep-wake cycle may advance, thereby decreasing the propensity to delayed sleep phase. Phototherapy, as well as behavioural and pharmacological treatments, can advance the timing of sleep hours, but there is usually a continual tendency and preference for delayed sleep hours, and recurrence is high. Use of alcohol, sedatives, hypnotics, or stimulants to treat symptoms of insomnia and sleepiness during normal waking hours may lead to substance abuse.

Symptoms

Individuals with delayed sleep phase disorder may demonstrate excessive sleep inertia (extreme difficulty awakening and confusion) in the morning as a result of curtailed sleep time and awakening during a circadian phase of high sleep propensity. Individuals with this disorder may have increased rates of mental disturbances, such as mood disorders or depressive symptoms.

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Factors which may contribute to developing DSPD

Attempts to cope with the inability to fall asleep earlier may result in the development of insomnia disorder. Individuals may use alcohol, sedatives, hypnotics, or stimulant substances to alleviate symptoms of insomnia and excessive sleepiness, thereby perpetuating their underlying sleep disorder.

Social and behavioural factors play an important role in the development and maintenance of the delayed sleep patterns for many affected individuals. Personal, social, and occupational activities that continue into the late evening may perpetuate and exacerbate the sleep phase delay. In adolescents, the role of school avoidance, social maladjustment, and family dysfunction should be considered as contributing factors. Individuals with a psychiatric disorder, such as a mood disorder (major depression or bipolar disorder), severe obsessive-compulsive disorder, attention deficit hyperactivity disorder, or other neurodevelopmental disorders may have a delayed sleep phase.

A positive family history has been reported in approximately 40% of individuals with delayed sleep phase disorder.

How to distinguish Delayed Sleep Phase Disorder from other sleep disorders

Delayed sleep-wake phase disorder must be distinguished from “normal” sleep patterns, particularly in adolescents and young adults who maintain delayed schedules regularly or intermittently, without distress or impaired functioning. DSPD must be distinguished from other causes of difficulty initiating sleep, including chronic insomnia disorder. In DSPD, sleep initiation and maintenance are improved when the patient is allowed to sleep on the preferred schedule. When individuals with DSPD must arise before the desired wake time, excessive sleep inertia and excessive daytime sleepiness may be evident. Other forms of excessive daytime sleepiness, from which this must be distinguished, do not generally exhibit the pronounced circadian pattern and do not abate with alterations in the sleepwake schedule. The development of delayed sleep phase disorder may be influenced by alterations in circadian physiology as well as behavioural factors.

Source: American Academy of Sleep Medicine – ICSD3