



Isolated Symptoms, Normal Variants, and Other Sleep Disorders

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Not all phenomena or symptoms that occur between falling asleep and waking up can be clearly assigned to the large group of sleep disorders, even if they have been classified in the ICSD-3 according to their predominant phenomenology. Some of them appear isolated, have no or only marginal illness significance, have been only poorly investigated, or display highly variable symptoms, so that they can neither be allocated to an existing sleep disorder nor defined as a novel sleep disorder. A sleep disorder caused by environmental influences, for example, noise, heat, or the bed partner, has to be included because the objectively present disturbing factor as well as its subjective perception may lead to insomnia, hypersomnia, or nonrestorative sleep.

9.1 Isolated Symptoms, Normal Variants, and Unresolved Issues

9.1.1 Long and Short Sleepers

Individuals who sleep for longer or shorter times than the age-specific average during a 24-h day and who feel restored after this sleep duration are defined as long and short sleepers, respectively. Sleep phases other than the main sleep phase have to be included in this calculation.

- In the context of adults, long sleepers are those who need 10 h of sleep or more during the 24-h day.
- Short sleepers are those who need only 5 h of sleep or less per day.

Both normal variants, long sleepers and short sleepers, who have already manifested in childhood or adolescence, are found in about 2% of the adult population and generally persist lifelong. The affected people feel restored when they can maintain their individual sleep duration. Disorders are only observed when a long sleeper tries to, or is forced to, cope with less sleep over longer periods or if the short sleeper wants to prolong the sleep duration by means of centrally acting substances. The last-mentioned case is often based on the misconception of the affected person or his/her environment regarding the necessary sleep duration. During school or work weeks, many long sleepers consciously accept a sleep deficit that they try to compensate by particularly long sleep phases on

weekends. The short sleeper only rarely suffers and very rarely seeks medical advice. Increased morbidity could not be confirmed for either normal variant.

The diagnosis of long and short sleepers can be based on the age of manifestation and the typical *history* regarding the recovery of sleep for individually adequate sleep duration. *Sleep logs* with data on the daytime alertness during the daily routine and during a vacation may facilitate the diagnosis. Generally, device-related diagnostics are not necessary. If long sleepers complain about nonrestorative sleep or report daytime sleepiness because of too little sleep, the differentiation of previously mentioned sleep disorders may be required (see ► Chaps. 3, 4, 5, and 8).

For short sleepers, *therapy* is usually not needed. In the context of long sleepers, observation of the individually required sleep duration is the therapy of choice and eliminates possible symptoms.

9.1.2 Sleep-Talking and Sleep-Related Groaning: (Somniloquy and Catathrenia)

About half of all children and as many as 5% of adults talk during their sleep (somniloquy) in a more or less comprehensible way, whereby the content may lead to problems with the bed partner or room partners. Much more rarely, sighing or groaning during sleep is heard (catathrenia). In the context of catathrenia, the duration of expiration is greatly extended so that oxygen desaturation and apnea can occur. The differentiation from sleep apnea is possible by simultaneously monitoring the acoustic phenomenon and the breathing disorder during expiration measured by polysomnography.

The affected individuals are usually not aware of either somniloquy or catathrenia, which may develop during REM as well as non-REM sleep. A high frequency is observed in patients with REM sleep behavioral disorders and those sleepwalking or sleep-related eating disorder. If sleep-talking only manifests in adulthood, often a psychopathology is found.

Regarding differential diagnosis especially in cases of stereotypic vocalization during sleep, epileptic seizures have to be excluded. *Pavor nocturnus* (see ► Chap. 7) differs, manifesting as shouting and an anxiety reaction.

If psychological stress is supposed as the origin and if sleep-talking is perceived as stressing, further psychotherapeutic examination may be reasonable, with appropriate therapy if needed.

9.1.3 Sleep-Related Movement Anomalies

In particular during sleep onset, but also during sleep, various movements of the trunk or the extremities may occur.

About two thirds of the population report sudden twitches of single muscle groups or body parts, so-called *sleep-onset myoclonias* or *hypnic jerks* that are frequently associated with hypnagogic sensations (e.g., acoustic, optic, sensation of falling) and lead to short arousal or waking up from light sleep. Taking caffeine or other stimulants, physical activity, or emotional stress may increase the incidence and severity. In rare cases, the sleep-onset twitches are so severe that they prevent people from falling asleep. In those cases, avoiding predisposing factors is most important. Rarely, clonazepam is applied.

In the phase of relaxation before sleep onset, in rare cases movements of the trunk may occur that extend in a peripheral direction to the proximal extremities and the neck. Each mental activation, for example, when the affected person is addressed by the bed partner, reliably interrupts those movements: defined as *propriospinal myoclonias*, these may lead to severe disorders of initiating sleep. Treatment with 1 mg clonazepam before going to bed may reduce the incidence of those myoclonias.

If asymmetrical and asynchronous myoclonias of small muscles or muscle groups (e.g., fingers, toes, corner of the mouth) are observed more than five times per minute over at least 20 min, predominantly in sleep stages N2 and N3, this phenomenon is called an *excessive fragmentary myoclonus*. Myoclonias can often be verified in videometry: they are mostly associated with arousal and lead to disorders of maintaining sleep. Myoclonias are found in approximately 5% to 10% of the patients who undergo examination in sleep centers because of excessive daytime sleepiness, and more often affect males. Often, sleep-related breathing disorders coexist as well as periodic limb movements during sleep (PLMS; see ► Chap. 8), narcolepsy (see ► Chap. 5), or insomnia (see ► Chap. 3).

The treatment is primarily based on the coexisting sleep disorder. In cases of persisting complaints, therapy similar to that for restless legs syndrome/PLMD (see ► Chap. 8) is recommended.

During sleep onset, *hypnagogic foot tremor* (see ► Sect. 2.6.4) may manifest that typically persists for more than 10 s and in rare cases leads to sleep interruptions. In coincidence with arousals, *alternating activations of the leg muscles* that can be confirmed by polysomnography disappear when falling asleep. In sleep centers, those phenomena are found in about 7.5% and 1.1%, respectively, of adult patients. Their clinical relevance is still unclear.

Very rarely, otherwise completely unremarkable newborns may show intensive bilateral movements of the large trunk muscles and the extremities that occur exclusively during sleep. Those *benign sleep myoclonias in newborns* are considered as a hint to incomplete brain maturation, because on one hand they display spontaneous remission within a few weeks or months and on the other hand are not associated with an increased risk for cerebral seizure disorders.

9.2 Other Sleep Disorders

In particular, *environmental sleep disorders* have high clinical relevance. Until recently, the frequency of sleep disorders caused by environmental factors has not been investigated. However, a high prevalence is assumed. Disturbing factors may be noise, heat, cold, the bedfellow, unfamiliar environment (hospital, hotel, tent), or the attention claimed by an ill person or a newborn. Most affected people are conscious of the responsible disturbing factor and try to meet the condition with suitable measures. Thus, in most cases, the sleep disorders are only transitory, and the origin of the sleep disorder is plausible to the disturbed individual. Affected people typically seek advice only when the subjective perception of the disturbing factor is the focus and when at the same time symptoms of other sleep disorders occur that are believed responsible for their insomnia or hypersomnia complaints.

For the diagnosis of environmental sleep disorders, intensive *history taking* is essential. Sometimes, a *sleep protocol* assessed for 2 weeks may determine the sleep phases with good recovery and the stimulus that is responsible for the disturbance. In particular, insomnia and sleep-

wake rhythm disorders should be excluded in cases of unclear history.

In most cases, intensive counseling is sufficient. If the disturbing factor is psychically overestimated, psychotherapeutic intervention is probably appropriate. In the short term, a hypnotic agent may be applied if the stimulus is transitory and cannot be eliminated. Anamnestic control of the therapeutic success, however, is required.

Case Report

A 25-year-old slim woman presents because of excessive daytime sleepiness and snoring without observed breathing interruptions that is stressful for her husband.

She reliably reports falling asleep in monotonous situations. The quality of her sleep is described as good, without difficulties of initiating and maintaining sleep. The sleep duration amounts to 7 h with regular bedtimes. On holiday or on weekends, the sleepiness does not improve. She cannot think of any origin for her complaints.

In the context of examination, it is possible to exclude organic and psychological origins. The sleep protocol could not reveal any cause for the daytime sleepiness. Outpatient polygraphy does not give any hint of sleep apnea; however, occasional heart rate increases are found. In the subsequent polysomnographic examination over two

nights, a regular sleep profile is measured without heart rate changes. Interestingly, the vigilance diagnostics do not show increased daytime sleepiness.

In the context of the final discussion, the patient mentions that she only feels well rested when her husband works night shift and she sleeps alone. Only the nights when they sleep next to each other are stressful. Being asked, the husband confirms that he regularly pushes his wife because of her snoring, which stops the snoring so that he is able to fall asleep again.

After elimination of her snoring by application of a mandibular advancement device, both partners report improved sleep quality and daytime alertness.

Further Reading

1. American Academy of Sleep Medicine. International classification of sleep disorders, vol 3. Aufl. Darien: American Academy of Sleep Medicine; 2014.
2. Berry RB, Brooks R, Gamaldo CE, Harding SM, Lloyd RM, Marcus CL, Vaughn BV, for the American Academy of Sleep Medicine. The AASM manual for the scoring of sleep and associated events: rules, terminology and technical specifications, version 2.6. www.aasmnet.org. Darien: American Academy of Sleep Medicine; 2016.