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Delayed Sleep Phase Syndrome

What is delayed sleep phase syndrome?

Delayed sleep phase syndrome, often referred to as DSPS, is a disorder in which the natural wake cycle (internal clock) is delayed by 2 or more hours. Basically, it is a disorder in which the internal clock is shifted by two or more hours, in that sleep is postponed. For example, rather than sleeping and waking at 7 AM, an adolescent with delayed sleep phase syndrome will sleep and wake at 9 AM and then has great difficulty awakening at 7 AM for school or work. If the adolescent is allowed to sleep until late in the morning, he will feel rested and can function normally. Children and adolescents with delayed sleep phase syndrome describe themselves as "night owls." They usually feel and function their best in the evening and nighttime hours. The sleep on weekdays compared to weekends or holidays.

Having delayed sleep phase syndrome, especially for children and adolescents, can cause significant problems, as they are unable to get up for school, often resulting in school absences and tardiness.

What causes delayed sleep phase syndrome?

Delayed sleep phase syndrome usually develops during adolescence, but can also occur in adults. It seldom occurs after the age of 30. Although the cause of delayed sleep phase syndrome is not completely known, it is likely an exaggerated reaction to the normal shift in the internal clock that occurs during adolescence. All adolescents have a shift in their internal clock after puberty. In those with delayed sleep phase syndrome, the clock shifts even more. In children who already had a tendency to go to bed late, this normal two-hour shift in the internal clock is significantly shifted. It is important to realize that this shift in the internal clock is not a deliberate behavior. Unfortunately, many adolescents with delayed sleep phase syndrome are labeled as noncompliant and truants. Approximately 7% of adolescents have delayed sleep phase syndrome, and thus it is a common disorder.

What are the symptoms of delayed sleep phase syndrome?

A child or adolescent with delayed sleep phase syndrome often experiences the following symptoms:

- Daytime sleepiness.** Because of the late sleep onset times and the usual requirement to get up earlier than desired for school or a job, children and adolescents with delayed sleep phase syndrome often experience daytime sleepiness as the

result of not getting enough sleep. Inability to fall asleep at the desired time. On nights that children or adolescents with delayed sleep phase syndrome try to go to sleep at a "normal" time, they are unable to do so. However, if they were to go to bed at their usual fall asleep time, they would have no problem falling asleep.

- **Inability to wake up at the desired time.** As a result of the late sleep onset time; many children and adolescents with delayed sleep phase syndrome are unable to wake up in the morning for school or other activities. This can result in many missed days or being late for school.
- **No other sleep complaints.** Because the internal clock is simply shifted in children and adolescents with delayed sleep phase syndrome, once asleep they sleep well with few or no awakenings. In addition, on days that they are able to sleep long as they wish, especially on weekends or holidays, sleep is normal and daytime sleepiness is not experienced.
- **Other daytime symptoms.** Some children and adolescents with delayed sleep phase syndrome experience problems with depression and other behavior problems as a result of the daytime sleepiness and the effects of missing school and social activities. In addition, there are a percentage of children and adolescents with delayed sleep phase syndrome who have school refusal, which complicates both diagnosis and treatment.

How is delayed sleep phase syndrome diagnosed?

There is no definitive test for delayed sleep phase syndrome so diagnosis is based on a description of the problem. An overnight sleep study may be recommended if another sleep disorder is present, such as obstructive sleep apnea or restless legs syndrome.

How is delayed sleep phase syndrome treated?

Delayed sleep phase syndrome is a difficult disorder to treat and requires significant effort from the child or adolescent. Thus, for treatment to be successful, the child or adolescent must be very motivated. The goal of treatment is to re-train the internal clock to a normal schedule. Making the initial shift in the sleep-wake cycle is easier, however, maintaining the change. Treatment can involve the following:

- **Sleep hygiene.** Good sleep habits are especially important for children and adolescents with delayed sleep phase syndrome.

These habits should include a regular sleep schedule that includes going to bed and waking up at the same time every day; avoidance of caffeine, smoking, and other drugs; a bedroom environment that is cool, quiet, and comfortable; a bedtime routine that is calm and sleep-inducing; and avoidance of all stimulating activities before bed, such as computer games and television.

- **Shifting the internal clock.** Treatment for delayed sleep phase syndrome involves systematically advancing or delaying bedtime on successive nights.

- **Phase advancement.** Phase advancement involves going to bedtime earlier by 15 minutes on successive nights. For example, if an adolescent usually falls asleep at 12:30, then bedtime is advanced to 12:15 for one or two nights, 12:00 for one to two nights, and so on.

- **Phase delay (chronotherapy).** Phase delay is chosen when an adolescent's naturally occurring bedtime is 3 or more hours later than desired. Bedtime is delayed by 2 to 3 hours on successive nights. For example, if an adolescent usually falls asleep at 2 AM, bedtime is delayed until 4 AM on night one, 5 AM on night two, and so on until the desired bedtime (e.g., 10:30 PM). Given that it is much easier for the adolescent to adjust to a later bedtime than an earlier one, it is often recommended to delay bedtime rather than try to advance it.

- **Sticking with it.** Once the desired bedtime is reached, the adolescent must stick with it on a nightly basis. Even if late night studying or socializing can return the adolescent to being delayed. Usually, however, after several months of consistent adherence, the adolescent's sleep schedule can become a bit more flexible.

- **Bright light therapy.** Sometimes bright light therapy is recommended which involves exposure to bright light in the morning for approximately 20-30 minutes, and avoidance of bright light in the evening. Bright light in the morning will help reset the body's internal clock. Special light boxes need to be purchased for this treatment.