

# DELAYED SLEEP PHASE SYNDROME

## WHAT IS DELAYED SLEEP PHASE SYNDROME?

Everyone differs in their need for sleep, but once we adapt to a particular sleep schedule, most of us are able to maintain our routine. People who suffer from Delayed Sleep Phase Syndrome are unable to change their sleep pattern in line with what is considered normal, or even if they do, they are not able to keep it up.

Delayed Sleep Phase Syndrome (DSPS) is believed to be a disorder of the body's timing system - the biological clock. The biological clock of people with DSPS is set to have them naturally falling asleep and waking up later than what is considered normal. This means they are unable to fall asleep until very late at night. Sometimes, they may not fall asleep until the early hours of the morning and may not wake up until late morning or the afternoon. This inability to fall asleep at typical bedtimes can be mistaken for insomnia. However, people with DSPS usually have no problem falling asleep or waking up naturally if they are allowed to follow their internal biological clock.

## WHAT IS THE CIRCADIAN RHYTHM? WHAT IS NORMAL?

Each person has a central biological clock located in the brain. Each cell in your body also has its own mini-biological clock (peripheral clocks). Every day, your body's biological clock undergoes cycles in which various chemicals or hormones are produced that control and synchronise bodily functions. These



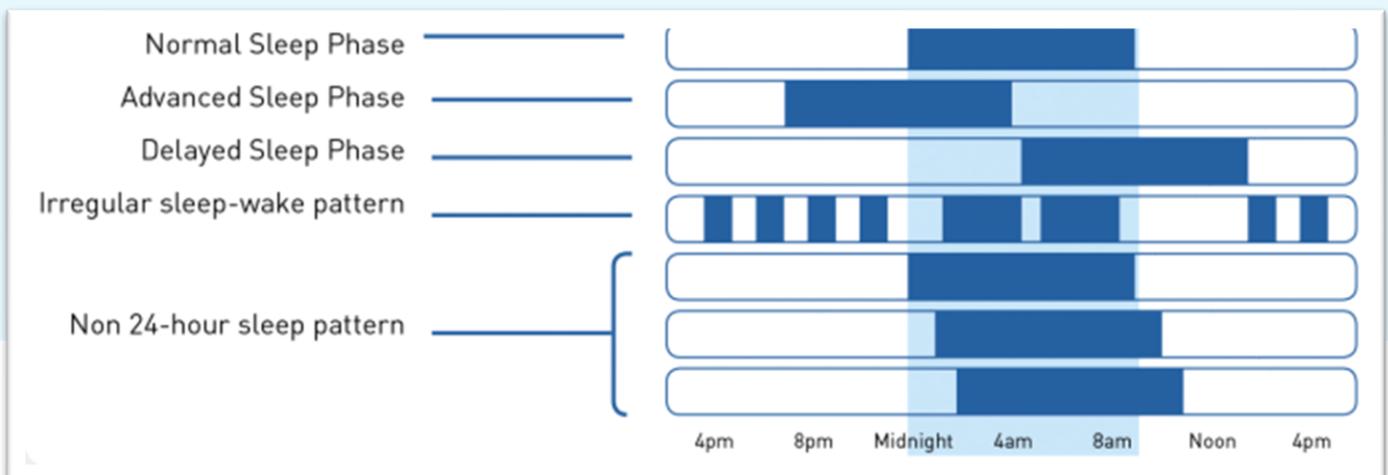
cycles are called circadian rhythms. Amongst people with normal circadian rhythms, some are "morning people" who prefer to rise early and go to bed early. Some are "evening people" who prefer to wake later and stay up at night. These differences may be biologically driven, however, people with normal circadian rhythms can still sleep at usual times. People with DSPS cannot do that because they have altered circadian rhythms preventing sleep onset at the usual time.

## WHAT ARE THE SYMPTOMS OF DSPS?

**Inability to fall asleep at a typical bedtime:** People with DSPS naturally fall asleep much later than is considered normal.

**Inability to wake up at a typical morning time:** Due to the delay in falling asleep people with DSPS find it extremely difficult to wake up in the morning.

**Excessive daytime sleepiness:** Due to the late sleep onset and yet needing to get up at the required time for work or school, people with DSPS often experience excessive daytime sleepiness as a result of not getting enough sleep. Despite feeling tired for most of the day people with DSPS will find it difficult to fall asleep until late at night. This cycle of forced awakenings, excessive daytime sleepiness and delayed sleep onset can continue indefinitely, causing sufferers to experience extreme sleep deprivation if forced to adhere to a schedule in line with social norms.



## WHO SUFFERS FROM DSPS?

Adolescents who have biologically different sleep and wake patterns compared to pre-adolescents or adults are particularly susceptible to experiencing DSPS-like symptoms. It is estimated to affect about 7% of adolescents, however, it can occur at any age. While some teenagers grow out of it, others experience lifelong symptoms.

## WHAT CAUSES DSPS?

The exact cause of DSPS is not entirely known. It is thought to be caused by an inability to reset the sleep/wake cycle and respond to environmental time cues - perhaps the biological clocks of DSPS sufferers have an unusually long cycle or perhaps they are not sensitive enough to time cues. There may also be an imbalance in the hormones that help maintain this sleep/wake cycle (e.g. melatonin) that may be used to treat the disorder.

## HOW IS DSPS DIAGNOSED?

Because DSPS is a sleeping pattern, there is no simple diagnostic test that will reveal whether you have DSPS. However, you may need to be referred to a sleep specialist. The sleep specialist may ask detailed questions about your sleeping habits and ask you to keep a sleep diary for a couple of weeks. This involves recording the following each day:

- The time you tried to fall asleep
- The time you think they fell asleep
- Any night-time awakenings
- The time you woke up
- The time you got out of bed
- The time you had to be up by
- Whether you woke up naturally or with assistance
- Any daytime naps - how long and when

## HOW IS DSPS TREATED?

Sleep specialists generally treat DSPS by recommending bright light in the morning, restricting exposure to light in the evening, and/or prescribing immediate release melatonin for the evening, in an attempt to regulate the body's circadian rhythm and establish an acceptable sleeping pattern. This may be effective for some people but not all. For some people, DSPS may eventually resolve itself.

## WHAT IS CHRONOTHERAPY?

This involves going to bed later and later each day (and waking up later and later each morning) until you reach your desired sleep time. While this may work for some people, others may struggle with the new

schedule and eventually revert to their body's preferred schedule. Chronotherapy is best

done when supervised in a clinical setting.

## WHAT CAN BE DONE TO LESSEN THE IMPACT OF DSPS?

For many people with DSPS, sleeping on a normal schedule may be difficult or even impossible. Attempting to do so can lead to sleep deprivation and stress. Lifestyle adjustments that enable your routines to cater to your natural sleep schedule may be the most practical solution. This could include working in the evening (e.g. night shifts) or working flexible hours from home.

## ABOUT US

*Sleep Disorders Australia (SDA)* is a voluntary not-for-profit organisation that provides information and support to people affected by sleep disorders throughout Australia. SDA advocates the needs of people with sleep disorders by raising awareness of sleep disorders and their impact on our lives. We also offer support and education with regards to preventing and treating sleep disorders.

We would be delighted if you joined us. Membership is open to sufferers, family members, medical professionals, and the general public. You can join via our website or email our membership officer for more information.

If you would like to support us financially, you can donate via our website or send a cheque to our address.

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