

- Avoid stimulants: avoid caffeine after 2 P.M. (coffee, tea, colas); the stimulant effect of caffeine can last up to 10-12 hours. Alcohol might help onset of sleep, but later withdrawal effects can lead to sleep disruption.
- Avoid all-nighters: remember that memory is very dependent on adequate sleep. Studying late into the night can be detrimental to learning if sleep is reduced. The best preparation for an exam is a good night's sleep.
- Light: Bright light in the morning helps you to be "awake"; darkness at night helps you to sleep.

SOME SIGNS OF A SLEEP DISORDER

- Often fall asleep during the day or in class
- Take over 30 minutes to get to sleep
- Often go to sleep after midnight
- Often have great difficulty in getting up in time for school or work
- Snore a lot with intermittent pauses in breathing
- Complain of odd feelings or jumpiness in the legs
- Have decreased concentration or attention
- Score more than 10 on the Epworth Scale

While these symptoms can occur in everyone on occasion, persistent symptoms may indicate a sleep problem that should be investigated. If you have concerns discuss them with your physician.

References

1. Sleepiness and the Health and Performance of Adolescent Students - A report from CIHR workshop http://www.css.to/sleep/Workshop_CIHR.pdf

ASSESS YOUR LEVEL OF EXCESSIVE DAYTIME SLEEPINESS THE EPWORTH SLEEPINESS SCALE

From: Johns MW. *Sleep* 1991; 14: 540-5

How likely are you to doze off or fall asleep in the following situations, in contrast to just feeling tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently, try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation.

- 0 = no chance of dozing
- 1 = slight chance of dozing
- 2 = moderate chance of dozing
- 3 = high chance of dozing

SITUATION	CHANCE OF DOZING
Sitting & reading	
Watching TV	
Sitting inactive in a public place (a theatre or meeting)	
As a passenger in a car for an hour	
Lying down to rest in the afternoon	
Sitting & talking to someone	
Sitting quietly after lunch without alcohol	
In a car, while stopped for a few minutes in traffic	
TOTAL SCORE	

This test is not meant to be diagnostic; however, scores over 10 may indicate sleep deprivation and/or a sleep disorder. Please consult your physician.

Prepared for the Canadian Sleep Society by:

Dr. E.S. Gibson & Dr. N. Trajanovic

ADOLESCENTS AND SLEEP

A GUIDE TO THE SLEEP-DEPRIVED WORLD OF TEENAGERS



CANADIAN SLEEP SOCIETY

© 2005 Canadian Sleep Society

Sleep deprivation, resulting in sleepiness, is common in teenagers. There is growing evidence that insufficient sleep significantly and negatively affects learning, emotion, and behaviour. This sleep loss can be due to physiological changes, undiagnosed sleep disorders, poor sleep hygiene, or societal demands. Adolescents require 9 hours sleep on average, yet almost 50% get less than 8 hours. Adolescence is a vulnerable stage in development during which individuals need to attain social competence and acquire the skills and knowledge necessary to become self-sufficient members of society. For adolescents who do not get enough sleep, daytime sleepiness increases and performance decreases. For instance, grades may drop, (in an Ontario survey of 3200 adolescent students, 24% of the students reported that their grades had dropped because of "sleepiness")¹, there may be an increase in tardiness and sleepiness at school and work, and social activities may be affected. While there are many causes for disturbed sleep, the following problems are the most common for adolescents. This guide is intended to help identify those who may require help.

1. Normal Physiological Change

Delayed Sleep Phase – There is a common and normal change in circadian rhythms (sleep/wake cycle) in adolescents that may delay their sleep onset time by as much as 2 hours. This delayed sleep onset, in conjunction with early wake times required by society, such as school start times or work schedules, results in sleep times that are less than adequate. The survey of adolescent students showed that, for 60-70%, the sleepest time of day was between 8 and 10 A.M. Adolescents with a delayed sleep phase typically stay up late at night and are difficult to awaken in the morning. Individuals may attempt to make up for lost sleep by sleeping in on weekends, however, this behaviour will result in later bedtimes on the next night, which reinforces the underlying phase delay.

2. Sleep Disorders

The following medical and sleep disorders are very often unrecognized in adolescents and can result in long-term problems with achievement and quality of life.

Obstructive Sleep Apnea (OSA) - This condition is caused by intermittent collapsing of the upper airway during sleep, and is often associated with snoring. To get a breath, there is increased breathing effort to open the airway often ending with a typical "snort" or snore and fragmented sleep. These adolescents will be sleepy during the day. At school, grades tend to

drop and homework and projects tend to be less satisfactory. In the workplace, they will tend to make more mistakes and be late for shifts. They may also seem irritable and/or depressed.

Movement Disorders - Restless Legs Syndrome (RLS), and Periodic Limb Movements (PLM). RLS is usually worse in the evening and night and is described as a "creepy" or "crawly" feeling in the legs. PLM is characterized by small repetitive leg twitches during sleep. Although not recognized by the sleeper, PLMs cause fragmented, unrefreshing sleep leading to daytime sleepiness and/or restlessness. In younger children these disorders are sometimes attributed to "growing pains". The symptoms of RLS are relieved by movement and during the day may cause a degree of restlessness that is sometimes misdiagnosed as Attention Deficit and Hyperactivity Disorder (ADHD).

Narcolepsy - Although uncommon, the symptoms of narcolepsy are regularly misinterpreted. These adolescents tend to fall asleep while doing routine activities, like eating, playing or while in class or at work. With the sleep attacks, they may experience sudden muscle weakness, particularly when surprised, excited, or laughing. During these episodes, they may experience vivid, realistic dreams that may be interpreted as hallucinations. As a result, individuals with narcolepsy have occasionally been misdiagnosed as having schizophrenia. Their academic performance is usually affected and they are often labeled as inattentive, lazy, or dull. In addition, they tend to isolate themselves from their peers.

Insomnia - Insomnia is characterized by difficulty falling asleep, staying asleep, early morning awakenings, or non-restorative sleep. It can be transient (days), short-term (weeks), or chronic (months or years). Non-restorative sleep leads to daytime fatigue, impairs everyday performance and cognitive function, affects mood and motivation, and decreases attention and alertness. Recent research indicates that insomnia in adolescents can lead to depression.

Depression – Adolescents may suffer from unrecognized depression that often affects their academic performance. Depressed mood (especially in the morning), daytime sleepiness, lethargy, loss of appetite, poor concentration and irritability may also be signs of depression.

Consult the CSS website for additional information on sleep disorders: <http://www.css.to/brochures.htm>

3. Lifestyle

Lifestyle factors, such as poor sleep habits and shift work may also contribute to insufficient sleep in adolescents.

Poor Sleep Hygiene - Some examples of bad sleep habits include: insufficient sleep, irregular bed and rise times, pushing back bedtime to socialize, watching TV or playing computer games late at night, etc. Other problems include vigorous exercise just before bed, and smoking, alcohol or caffeine use at bedtime.

Shift Work - Disrupted biological rhythms can affect the quality and duration of sleep. Students who work evening shifts can be excessively sleepy during classes, develop mood changes, or experience cognitive difficulties. There is some indication that part-time work over 15 hours per week in students may affect their curricular performance.

The "Why" and "How" of a Good Night's Sleep

Why:

Sleep deprivation is responsible for more than just falling asleep in class.

- Sleepiness: leads to poor concentration.
- Microsleeps: are extremely short sleep spells that lead to lapses in attention.
- Tiredness: leads to decreased motivation.
- Behaviour: sleep deprivation increases irritability and decreases self-control.
- Impairment: sleep deprivation can impair performance of critical tasks such as driving, and it acts synergistically with alcohol to increase impairment.
- Learning: sleep after a learning exposure is critical to the consolidation of its memory.
- Brain development: sleep deprivation can slow the secondary development of the brain in adolescence that is responsible for self-control and affect regulation.

How:

- Adequate sleep: adolescents need about 9 hours sleep, on average. If you are getting enough sleep you will awaken feeling refreshed, not tired.
- Regular sleep: it is important to maintain a regular sleep routine. It is important to go to bed and to wake at the same time every day. On weekends try to keep the same schedule.
- Comfort: your bedroom should be quiet, dark and at a comfortable temperature.
- Relaxation: avoid strenuous exercise, studying, and computer games before bedtime. The flickering light from television can delay falling asleep.