

The Teenage Sleep Conundrum

Promoting Healthy Sleep Habits
for Your Child

Middle Senior School Knowledge Café
November 1, 2024









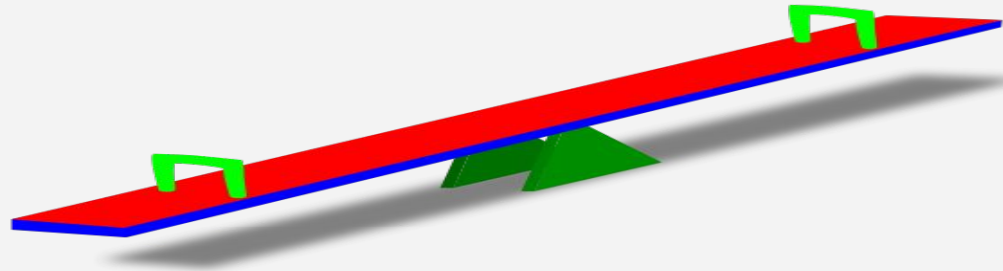
The Teenage Sleep Conundrum

Why does sleep matter and how can parents support better sleep routines?

Why Sleep is Critical for Teenagers

The Good News First:

- Sleep is the one area in our lives that we can see huge transformations with a few concrete changes.



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Importance of Sleep in Teenagers

- Teenagers need 8-10 hours of sleep per night.
- Sleep is critical for physical, mental, and emotional development.
- During sleep, the brain consolidates learning and memories, making sleep essential for academic performance.

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Sleep and Brain Development

Sleep allows for:

- the **removal of wastes and toxins** contributing to overall brain health.
- the brain to **repair and strengthen** neural connections, supporting overall cognitive function and resilience.
- **memory consolidation**
- improved **cognitive functions**

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Systems that Influence Sleep

- Circadian Rhythm
- The Sleep Cycle
- The Homeostatic System
- The Glymphatic System



Circadian Rhythm

It is a natural, internal process that responds to environmental cues, primarily light and darkness, to synchronize the body's functions with the external day-night cycle.

- Sleep-Wake Cycle:

The circadian rhythm is responsible for the timing of the sleep-wake cycle signaling when it's time to be awake and alert (during the day) and when it's time to wind down and sleep (during the night). This natural rhythm helps maintain a consistent sleep schedule.

- Melatonin Production:

The circadian rhythm influences the secretion of melatonin, a hormone that plays a key role in sleep regulation. Melatonin is typically produced in higher amounts during the evening and nighttime, promoting drowsiness and helping initiate sleep.



The Sleep Cycle

The sleep cycle consists of two main types of sleep: rapid eye movement (REM) sleep and non-rapid eye movement (NREM) sleep.

How Many Sleep Cycles in a Night?

- The number of sleep cycles a person experiences can vary, but most adults go through four to six complete cycles during a full night's sleep.

Importance of Sleep Cycles:

- Each stage of the sleep cycle serves a specific purpose in physical and mental restoration. REM sleep is associated with memory consolidation, emotional processing, and learning. NREM sleep is crucial for physical recovery, growth, and immune system functioning.



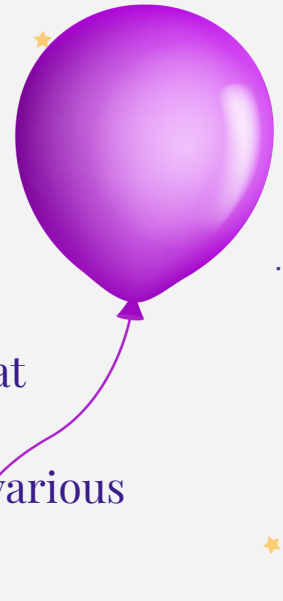
Homeostatic System

Sleep Pressure ("sleep drive" or "homeostatic sleep drive"):

- The build-up of the need for sleep over time.
- Sleep pressure is often linked to adenosine, a neurotransmitter that accumulates in the brain during wakefulness.
- During sleep, adenosine levels decrease, and the body undergoes various restorative processes

Sleep Duration:

- The length of time an individual spends asleep.
- The homeostatic sleep cycle influences the duration of sleep by adjusting the intensity and duration of sleep episodes based on the accumulated sleep pressure. After a period of wakefulness, the body tends to compensate by promoting longer and more restful sleep



Things That Reduce the Sleep Pressure

Irregular Sleep Patterns	Consistent sleep routine during the week, but sleeping in on weekend can affect this
Chronic Sleep Deprivation	Staying up too late doing school work, watching tv, on personal device etc.
Caffeine and Stimulant Use	Should not be consumed in small children, this includes chocolate!
Electronic Devices Before Bed	Should be turned off at least 1 hour before bedtime
Late-Night Meals	Can play havoc with the glycogen /insulin cycle and circadian rhythm
Napping	Consistent sleep routine during the week, but sleeping in on weekend can affect this
Lack of Physical Activity	Keeps sleep pressure low, impacts stress hormones and adenosine
Stress and Anxiety	Increases cortisol which is produced in the adrenal glands (as is melatonin)
Environmental Factors	Excessive noise, uncomfortable temperatures, an uncomfortable mattress, can negatively impact the homeostatic sleep drive. Creating a sleep-conducive environment is essential for quality sleep.

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The Importance of Sleep

Sleep plays a key role in physical health, cognitive function, and emotional well-being improving:

- Immune System Support
- Cardiovascular Health
- Diabetes
- Metabolism-therefore weight gain
- Physical performance

Lack of sleep is linked to an increased risk of Alzheimer's disease-as plaques build up in the brain and are not flushed out nightly.

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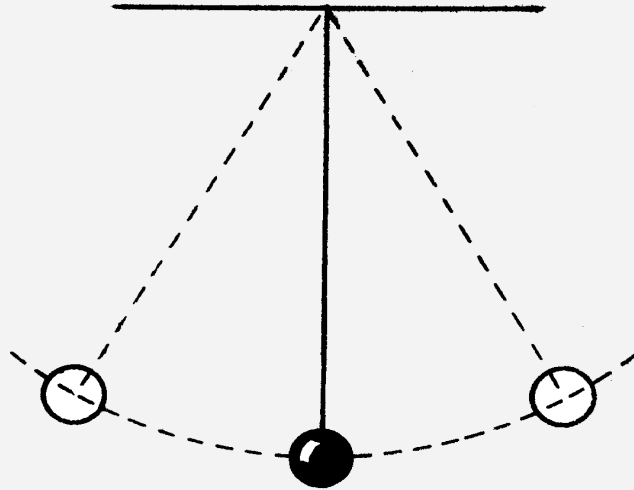
Consequences of Sleep Deprivation

- Physical Impact:
 - Weakened immune system (more colds and illnesses).
 - Increased risk of obesity and other health problems.
- Cognitive and Academic Impact:
 - Difficulty concentrating, poor memory retention.
 - Decreased problem-solving skills and creativity.
 - Lower academic performance.
- Emotional and Mental Health:
 - Increased stress, anxiety, and depression.
 - Mood swings and irritability.



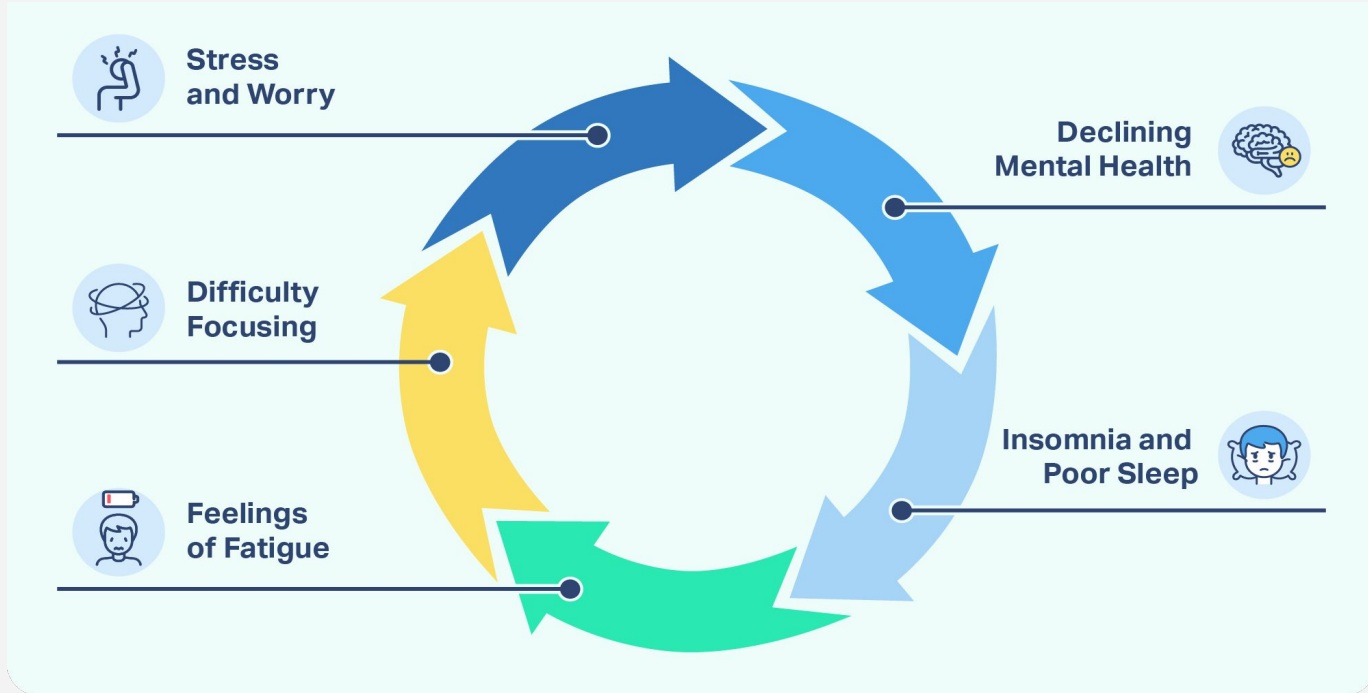
Sleep and Mental Health

These are interrelated: better sleep improves mental health and in turn reduced stress and anxiety improve sleep.



Sleep and Mental Health

A negative feedback loop can worsen sleep *and* mental health..



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Sleep Hygiene for your child



It Takes More Than Water!!





Recommended Sleep Duration

Canadian Paediatric Society (CPS) Recommendations:

School-Age Children (6-12 years):

- Recommended Sleep Duration: 9-12 hours per night.

Teens (13-18 years):

- Recommended Sleep Duration: 8-10 hours per night

The key is consistent sleep. It is important to know that there is no making up for lost sleep on the weekends.

Good sleep hygiene = consistent sleep and wake times, 7 days a week.



Why Are Teens Sleep-Deprived?

Biological shift: Teens' circadian rhythms shift, making it hard to fall asleep before 11 PM.

Early school start times: Often conflict with teens' natural sleep patterns.

Busy schedules: Homework, extracurricular activities, part-time jobs, and socializing reduce available sleep time.

Technology use: Excessive screen time, especially before bed, delays melatonin production.



Sleep Toolkit

- Digital clock
- Eye covers
- Dark blinds
- Cool room temperature
- Crisp sheets and bedding
- Uncluttered environment (no school or work triggers)
- No blue lights
- Ipod (no wifi), mp3 player
- New pj's



Hygiene starts in the morning

- Start the day with love and affection.
- Reconnect with your child in the morning with a smile, kind words, and a hug.
- Establish a good routine that doesn't feel rushed
- Prepare backpacks, uniforms, and required items the night before
- Use a paper calendar and review upcoming events for the week on Sunday
- Start building the Sleep pressure

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Common Sleep Challenges Kids Face

- Caffeine Consumption
- Stress and Anxiety
- Hormonal Changes
- Screen Time Before Bed (light and content)
- Sleep Disorders



The Role of Technology

- Blue light from screens (phones, tablets, TVs) interferes with melatonin production, delaying sleep onset.
- Social media and gaming can be stimulating and cause late-night use.
- Recommendations: Limit screen time, particularly 1-2 hours before bed, and enable "night mode" on devices.

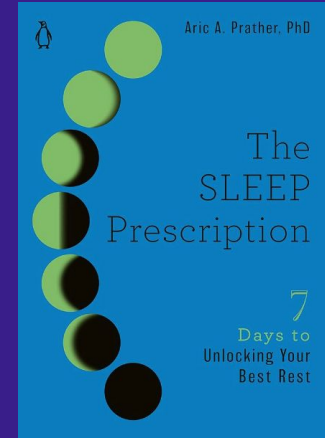


How to Improve Sleep Habits

- Establish a Consistent Routine:
 - Encourage a regular bedtime and wake-up time, even on weekends.
- Create a Sleep-Friendly Environment:
 - Cool, dark, and quiet bedroom; consider using blackout curtains and white noise if needed.
- Limit Caffeine and Stimulants:
 - Avoid caffeine in the afternoon and evening (coffee, energy drinks).
- Encourage Relaxation Before Bed:
 - Suggest reading, listening to calm music, or meditating before sleep.
- Physical Activity:
 - Promote regular exercise, but avoid intense activity right before bed.

Resources

- Books:
 - *Why We Sleep* by Matthew Walker
 - *The Sleep Revolution* by Arianna Huffington
 - *The Sleep Prescription* by Aric Prather
- Websites: SleepFoundation.org, CDC's Teen Sleep Resources, <https://www.cheo.on.ca/en/resources-and-support/p5643.aspx#>
- Apps: Meditation and relaxation apps (e.g., Calm, Headspace), screen time management apps (e.g., Moment, Freedom).





Thank you!
Sleep well tonight.