# How and Why to Optimize Adolescent's Sleep

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Sleep is considered the most essential pillar of health, with more immediate and dramatic effects on mental and physical wellbeing than either nutrition or exercise. Without sufficient sleep, we see significant impacts on brain function, learning ability, emotion regulation, reaction times, physical performance, and rate of accidents.

The sleep-wake cycle is closely tied to the endocrine system and is impacted by fluctuating hormone levels across the lifespan. Babies need to sleep several times per day, young children tend to be early to bed and early to rise, teens tend to be late to bed and late to rise, while the elderly again revert to earlier sleep and wake times. During puberty, as there is significant hormonal shift in the body, the majority of adolescents experience a two-hour shift in their sleep-wake cycle. The majority of teens cannot fall asleep before 11:00 p.m. and their brains stay in "sleep mode" until approximately 8:00 a.m. Therefore a developmentally-appropriate school start time for teens should be no earlier than 8:30 a.m., as has been shown by decades of scientific research.

When school districts shift to later start times, we see significant improvements in school attendance, GPA, SAT and ACT scores, and rates of graduation and college attendance. Teens also show reduced rates of depression, anxiety, behavioral problems, conflict at home, car accidents, drug use and suicide. These benefits not only improve a teen and family's quality of life, but these impacts lead to significant economic benefits for society.

Given early school start times, it is essential for parents to create a home environment that promotes optimal sleep and coach their adolescent children on how to strategically fall asleep. There are many things we can do at home to improve the sleep quality and quantity of the whole family.

Behavioral Factors:
- Have as consistent of a sleep/wake schedule as possible with only minimal variation on weekends.
- Turn off all screens at least one hour before bedtime. Opt for relaxing music, reading or quiet activities.
- Stop eating at least two hours before bedtime. Avoid caffeine after lunch.
- Aim for vigorous exercise earlier in the day, and gentle stretching before bedtime.
- For those with a busy thinking mind, use instrumental/432 Hz/delta wave music, white noise, nature sounds.
- For those with a restless body, consider a weighted blanket, stretching before bed, or progressive muscle relaxation (yoga nidra or guided relaxation recordings on YouTube are a useful guide).
- Practice mindful breathing - hand to belly to follow breath, count exhalations (up to 10, then start over), slow down the exhalation, consider a breathing rhythm (box breathing 4:4:4:4 or 4:7:8).

Environmental Factors:
- Light exposure communicates day vs. night to the endocrine system and controls melatonin production.
- Get as much bright light in the morning as possible, reduce overhead and bright lights in the evening, use blue light blockers (screen filters and/or glasses), use amber colored lamp light, sleep in a dark room.
- No night lights, TVs or cell phones in bedrooms. Get a digital alarm clock that emits minimal light.
- Temperature matters – ideal house temp for sleep is 65 degrees, memory foam can hold heat and disrupt sleep, consider cooling mattress pad or a fan.

Biochemical Supports:
- Consider a calming herbal blend tincture or tea – passionflower, lemon balm, chamomile, kava, lavender
- Magnesium – ideally a blend of glycinate, malate, and threonate; Epsom salt bath with lavender essential oil
- Popular supplement combo - RelaxMax by Xymogen – magnesium, myo-inositol, L-theanine, GABA, taurine
- Melatonin only occasionally to help reset the sleep-wake cycle – e.g. schedule changes, distance travel