Light Mask May Help Teens Wake for School

Many teens struggle to wake up in the morning for school, and their circadian clocks may be to blame. These teenagers may actually be suffering from delayed sleep phase syndrome, a sleep disorder that occurs when their “internal” clock is delayed relative to the schedule they keep.

The LRC is examining how light treatment, particularly short-wavelength (blue) light, can affect a person’s sleep/wake cycle, one of many biological cycles that repeat approximately every 24 hours called circadian rhythms.

Setting the internal clock

Circadian rhythms are synchronized to the solar day by the 24-hour light/dark cycle. Light stimuli travels through the retina to reach the brain’s master clock.

Research has demonstrated that manipulating the timing, duration, intensity, and spectrum of light stimuli can increase the effectiveness of light on resetting the body’s internal master clock. To maximize the impact on the internal clock, the timing of light treatment should be linked to a person’s minimum core body temperature (MCBT), which typically occurs about one and a half to two hours before a person awakens naturally.

Light applied just before MCBT while one is asleep, will result in a maximum phase delay of the internal clock. The person would go to bed later and wake up later the next morning. Conversely, light applied just after MCBT will result in a maximum phase advance where one goes to bed earlier and wakes up earlier the next morning.

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