



## Introduction

Good sleep influences cognitive, physical and emotional performance, and facilitates effective emotional regulation.<sup>1</sup> Good sleep also correlates with higher school attendance, academic achievement, and better mental health outcomes.<sup>2</sup> However, sleep problems are common for adolescents and have increased significantly during the pandemic<sup>3</sup>, with teens consistently reported as being one of the most impacted groups.<sup>3,4,5,6</sup>

Given that adolescence is a time of social transformation, this age group has been uniquely impacted by the pandemic, with sleep consistently being identified as a key factor.<sup>7</sup>

This poster explores sleep challenges faced by teens during the pandemic, and considers how we can make use of a growing evidence base, to educate and support the communities in which we work.

### Terminology

**Sleep onset latency:** The time it takes to fall asleep; **Sleep opportunity:** The amount of time per night you are in bed and trying to sleep; **Sleep efficiency:** The ratio of total sleep time to time in bed; **Social jetlag:** The discrepancy between biologically predisposed sleep timings and those imposed by social or environmental factors; **Sleep quality:** Includes perception of sleep quality, sleep onset latency, sleep duration and amount of time awake during the night after sleep onset; **Circadian rhythm:** Natural biological cycle that repeats ≈ every 24 hours and regulates the sleep-wake cycle; **Sleep drive:** This is at its lowest when we wake from sleep and builds throughout the time we are awake; **Zeitgebers:** External/environmental cues that impact our sleep patterns e.g. timings of meals, school start times.

### Teen sleep recommendations:<sup>8,9</sup>

Duration: 8-10 hours  
Sleep onset latency: 10-20 minutes  
Sleep efficiency: 80%

## What characterises teen sleep?

Pre-pandemic research suggests that many adolescents were not getting enough sleep,<sup>10</sup> had trouble falling asleep,<sup>11</sup> and experienced daytime sleepiness. These challenges can be understood in the context of some key shifts that take place during adolescence.

### Circadian Rhythm

This shifts by around two hours, leading to delayed sleep-wake cycle.<sup>12</sup> Biological sleep needs often become misaligned with environmental/social timings and this leads to social jetlag.<sup>14</sup>

### Sleep drive

As sleep need increases, so do social and educational responsibilities. Teens resist sleep drive, delaying bedtime and try to catch-up on sleep at weekends, which impacts sleep drive on Sundays, so that the whole process is perpetuated.<sup>14</sup>

### Zeitgebers

Social connections with peers become more important, and academic pressures start to mount. This can lead to delayed bedtimes because teens are doing homework late in the evening, or are on their phones connecting with peers late at night.<sup>15</sup>

## What changed during the pandemic?

As one of the groups whose sleep has been most impacted during the pandemic,<sup>3</sup> researchers have been investigating what has changed in terms of commonly used sleep metrics, in order to understand the complexity of these changes and potential causes. Key findings of the current research are outlined below..

### Sleep quality improved

...but only for teens who were sleep deprived pre-pandemic. Increases in sleep duration and decreases in social jetlag led to improved sleep quality for those who were sleep deprived pre-pandemic.<sup>13</sup>

### Sleep duration increased

Increased sleep opportunity (due to school closures, delayed school start times, restricted social opportunities), increased sleep duration for those who were sleep deprived pre-pandemic. However 50% of teens were still getting less than the recommended amount of sleep.<sup>5,13</sup>

### Sleep onset latency increased by up to two hours

Possibly due to compromised daylight exposure (which regulates circadian rhythms), or increased screen time,<sup>3</sup> or simply that teens were able to sleep at times that reflected their natural circadian rhythms.<sup>6,13,16,17</sup>

### Social jet lag decreased

Delayed school start times may have allowed for sleep-wake patterns that better matched the natural circadian rhythms of teens, and may subsequently have led to more consistent bedtimes across the week, and less catch-up sleep at weekends.<sup>5,13,17</sup>

### Screen time increased by 185%/two hours per night

During the pandemic increased screen time was linked to decreased loneliness and delayed sleep onset, but not to sleep quality. Increased screen time may have facilitated social connections which positively impacted sleep quality.<sup>5,18,19</sup>

## Conclusions

Current research into teen sleep during the pandemic has highlighted the specific needs of this group, reinforcing existing knowledge about sleep difficulties and their impact, but also suggesting reasons for optimism.

During the pandemic adolescents responded differently in terms of their sleep, with many having improved sleep on a range of measures. This illustrates the need for a nuanced and personalised approach to managing the sleep needs of this group.

### References



Sleep is a modifiable behaviour which has a huge potential impact on the wellbeing and development of adolescents. As the impact of the pandemic continues to be explored, we will continue to develop our understanding of how we can help teens and their families, and education providers, to improve the sleep health of this population.

## Recommendations

- Educate teens on sleep health in ways that encourage them to interpret advice for their own individual needs.
- Increase awareness in schools so that educators can better meet their students' sleep needs e.g. school start times, modified timetables, homework schedules.
- Help parents and educators adopt a more nuanced approach to understanding teens' screen use, recognising potential benefits as well as risks.
- Help families and schools to understand the unique sleep challenges of this group so that they can provide ongoing advice and support that is evidence-based.