

# **How Blue Light Affects Your Children's Sleep**

**By:** *Providence Health Team*

As hard as it may be to get kids to stop watching TV or turn off their electronic devices before bed, there are more reasons than ever to do so, according to science.

Not only does staying up late make children groggy during the day, but a study conducted at King's College in the U.K. also shows that the type of light emitted by phones, tablets, and computers is especially disruptive to sleep. While all artificial light (such as fluorescent bulbs, incandescent bulbs, and LEDs) can interrupt normal sleep patterns, exposure to short-wavelength blue light has emerged as an even bigger barrier to healthy sleep in children. A study in the Journal of the Endocrine Society shows that blue light suppresses the production of the sleep hormone melatonin more than any other type of light, again, which is exactly the light that comes out of smartphones, tablets, and e-readers.

The body's biological clock follows the patterns set by the amount of light and dark to which the body is exposed; this process is called the circadian rhythm. Circadian rhythms, in turn, control patterns of sleeping, eating, hormone production, and cell repair. When the hormone melatonin is suppressed in children, sleep deprivation can result – causing a reduced attention span, poor grades, and absences from school. Not to mention, moodiness and irritability, poor decision-making, and decreased memory. According to the National Sleep Foundation, about a third of children don't get enough sleep.

For teens, the effects can be even worse. Another [study](#), conducted at the University of Bergen, Norway, found that teenagers spend much more time on electronic devices than children, and, subsequently, have a harder time sleeping at night. And it wasn't just using smartphones right before bedtime, either, but the cumulative number of hours spent on electronics throughout the day that translated to poorer sleep. Teenagers experience a certain amount of natural shifting of their circadian rhythms anyway and usually need more sleep, not less.

Disruption of circadian rhythms has been linked to a variety of health risks, as shown in a study conducted by the National Institutes of Health. Obesity, diabetes, cardiovascular disease, and even cancer can follow poor sleep patterns – so for both kids and teens, too much phone time can translate to much more than poor grades long term.

To address the blue light problem, some electronics manufacturers have built a 'bedtime mode' into their handheld devices. It shifts the visible light spectrum from blues and greens to yellows and reds, while lowering the intensity and contrast of light. For a lower-tech solution, some people use orange-tinted "blue-blocking" safety glasses to change the color spectrum that reaches their eyes. But for establishing healthier sleep patterns in the household, it's a good idea to set some limits on electronics altogether.

For all family members, a healthy sleep environment means avoiding blue light for at least an hour before bed. For kids, consider imposing a “digital curfew” where all devices are turned off two hours before bedtime (including the TV.) For younger children, this can be as easy as turning off or removing devices from their bedrooms. When older children are cramming to finish homework, parents can have them dim the brightness on their computer screens. Finally, don’t use energy-efficient ‘blue’ light bulbs for night lights, but use dim red bulbs instead; the red wavelength won’t suppress the release of melatonin.

Whether you use electronic devices or not, it’s important to practice “good sleep hygiene” – adopting a regular nightly schedule that helps the mind and body wind down and relax before bed. Look for a doctor in our physician directory who can discuss strategies to help you and your family improve the quality of your sleep.

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