

Is your teen a night owl? Their sleep pattern could shape their brain and behavior years later

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It's 11 pm on a weeknight and your teenager still has their bedroom light on. You want them to get enough sleep for school the next day, but it's a struggle.

Our [new research](#) shows what happens to the brains and behavior of

young teenagers, years after they've become "[night owls](#)."

We found this shift in [sleep pattern](#) increased the risk of having behavioral problems and delayed [brain development](#) in later adolescence.

But it's not all bad news for night owls.

Sleep habits shift

People's sleep [patterns shift](#) during their teenage years. Teens can stay awake longer, fall asleep later, and have a lie in the next day.

Many teens also shift from being a [morning](#) lark to a night owl. They feel more productive and alert later in the evening, preferring to go to sleep later, and waking up later the next day.

This shift towards "eveningness" can clash with teens' school and work. A chronic lack of sleep, due to these mis-matched sleep schedules, can explain why teens who are night owls are at [greater risk](#) for emotional and behavioral problems than ones who are morning larks.

Emerging research also indicates morning larks and night owls have a different [brain structure](#). This includes differences in both the gray and white matter, which have been linked to differences in memory, emotional well-being, attention and empathy.

Despite these links, it's unclear how this relationship might emerge. Does being a night owl increase the risk for later emotional and behavioral problems? Or do emotional and behavioral problems lead to someone becoming more of a night owl?

In our study, we tried to answer these questions, following teenagers for many years.

We asked over 200 teens and their parents to complete a series of questionnaires about the teens' sleep preferences, and emotional and behavioral well-being. Participants repeated these questionnaires several times over the next seven years.

The teens also had two brain scans, several years apart, to examine their brain development. We focused on mapping changes in the structure of white matter—the brain's connective tissue that allows our brains to process information and function effectively.

Earlier research shows the structure of white matter of morning larks and night owls [differ](#). However, our study is the first to examine how changes in sleep preferences might affect how white matter grows over time.

Teens who shifted to becoming a night owl in [early adolescence](#) (around the age of 12-13) were more likely to have behavioral problems several years later. This included greater aggression, rule breaking, and antisocial behaviors.

But they weren't at increased risk of emotional problems, such as anxiety or low mood.

Importantly, this relationship did not occur in the reverse direction. In other words, we found that earlier emotional and behavioral problems didn't influence whether a teenager became more of a morning lark or night owl in late adolescence.

Our research also showed that teens who shifted to becoming a night owl had a different rate of brain development than teens who remained morning larks.

We found the white matter of night owls didn't increase to the same

degree as teens who were morning larks.

We know growth of [white matter is important](#) in the teenage years to support cognitive, emotional and behavioral development.

What are the implications?

These findings build on [previous research](#) showing differences in brain structure between morning larks and night owls. It also builds on earlier research that indicates these changes might emerge [in the teenage years](#).

Importantly, we show that becoming a night owl increases the risk of experiencing behavioral problems and delayed brain development in later adolescence, rather than the other way round.

These findings highlight the importance of focusing on [teens'](#) sleep-wake habits early in adolescence to support their later emotional and behavioral health. We know getting enough sleep is [extremely important](#) for both mental and [brain](#) health.

Here's some good news

It's not all bad news for night owls. As our research shows, morning lark and [night owl](#) preferences aren't set in stone. Research indicates we can modify our sleep preferences and habits.

For example, exposure to light (even artificial light) alters our circadian rhythms, which can influence our sleep preferences. So minimizing late-night exposure to [bright lights](#) and screens can be one way [to modify](#) our preferences and drive for sleep.

[Exposure to light](#) first thing in the morning can also help shift our

internal clocks to a more morning-oriented rhythm. You could encourage your teen to have their breakfast outside, or go onto a balcony or into the garden before heading to school or work.

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