

"Spring forward" time change can wreak havoc on circadian cycle

March 4 2014, by Amy Blakely

This weekend, we turn our clocks forward an hour.

It may be a shift of only sixty minutes, but it's enough to disrupt the body's [internal clock](#), which scientists call the circadian rhythm. The "spring forward" time change is often more difficult than the "fall back" change because it means an hour less shut-eye.

"If you are well-rested, even an hour change in your routine can leave you feeling temporarily sleep deprived. If you are already sleep-deprived, the one hour just compound the problem," said Theresa Lee, dean of UT's College of Arts and Sciences and a professor of psychology. Lee conducts research on sleep patterns over the lifecycle, and how sleep patterns and the need for sleep vary by age.

The body's internal clock regulates a number of critical biological processes, including hormone production, [brain wave activity](#), and cell regeneration, during the course of a day. Any time shift in the sleep schedule—whether it results from time changes, travel between time zones, shift work, or changes in routine or medications—disrupts these chronobiological rhythms that influence the quality and duration of sleep.

Provided you have good sleep habits, it won't take too long to readjust to the daylight saving time change. In general, it takes about a day to adjust for each hour of time change.

Women ages twenty-five to fifty-five typically need 6.5 to 8.5 hours of sleep. Men typically need 6.3 to 8.1 hours of sleep.

To help minimize problems with this weekend's [time change](#), Lee emphasizes these everyday tips for getting a good night's rest:

- Have a fixed bedtime and wake-up time.
- Avoid napping during the day.
- Avoid drinking alcohol or caffeine right before bed.
- Avoid eating heavy, spicy, or sugary food before bed.
- Get regular exercise—but not right before bed.
- Keep your bedroom cool, dark and quiet.
- Avoid using your bedroom as a workroom.
- Turn off electronics thirty to sixty minutes before bedtime.

Sleep is a critical part of our lives, and fatigue can be dangerous. Tiredness impacts reaction time, judgment, and vision. Sleep-deprived individuals have problems processing information. Their short-term memory is impaired. They perform tasks less well and are less vigilant and motivated. Moodiness and aggressive behavior increase.

Lee said research shows that eighteen hours of sustained wakefulness impairs performance similarly to a [blood alcohol level](#) of .05 percent. A person who has gone without sleep for twenty-four hours can behave like someone with a .10 BAC. In Tennessee, a .08 BAC qualifies as drunken driving.

A person who's gotten four hours of sleep and then drinks one beer can feel—and act—as if they've consumed an entire six-pack of beer.

Lee said fatigue is believed to play a role in about half of all motor vehicle accidents.

Though much needed, sleep doesn't always come easy. Also, [sleep patterns](#) vary across the lifetime.

Youngsters and older folks tend to go to bed early and wake up early. In between, when our bodies are telling us to stay up later and [sleep](#) later, society requires us to get up early to go to school or work.

High school and college are prime times when life's patterns don't match.

Teachers and faculty members, who tend to be older, are often alert and ready for class at 8:00 a.m.—and would like to be done and headed home by 6:00 p.m. Many students, though, would be more effective if their day began at 10:00 a.m. and classes extended into the evening, she said.

This might also help explain why the teen years can be so difficult.

"We are creating [sleep deprivation](#) that leads to moodiness and aggressiveness," Lee said.

Provided by University of Tennessee at Knoxville

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