

Sleeping in on the weekend won't repay your sleep debt

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Think sleeping in on the weekend can repair the damage from a week of sleepless nights?

Not so, according to University of Colorado Boulder research published today in *Current Biology*.

In fact, on some [health measures](#), trying to play catch-up for a few days and then returning to poor sleep habits makes things worse.

"Our findings suggest that the common behavior of burning the candle during the week and trying to make up for it on the [weekend](#) is not an effective health strategy," said senior author Kenneth Wright, director of the Sleep and Chronobiology Lab.

Previous research has shown that insufficient sleep can boost risk of obesity and diabetes, in part by boosting the urge to snack at night and decreasing insulin sensitivity—or the ability to regulate blood sugar. Some adverse health impacts kick in after just one night of lost sleep, recent CU Boulder research has shown.

Sleeping in on the weekend can help the body recover mildly during those two days, studies suggest. But the effects don't last.

Wright and lead author Chris Depner, an assistant research professor of Integrative Physiology, wanted to determine what happens when people cycle back and forth between a sleep-deprived work week and a few days of catch-up.

They enlisted 36 [healthy adults](#) age 18 to 39 to stay for two weeks in a laboratory, where their [food intake](#), light exposure and sleep were monitored.

After baseline testing, the volunteers were divided into groups. One was allowed plenty of time to sleep—9 hours each night for 9 nights. The second was allowed 5 hours per night over that same period. The third slept no more than 5 hours nightly for 5 days followed by a weekend when they could sleep as much as they liked before returning to 2 days of restricted sleep.

Both sleep-restricted groups snacked more at night, gained weight and saw declines in insulin sensitivity during the study period. While those in the weekend recovery group saw mild improvements (including reduced nighttime snacking) during the weekend, those benefits went away when the sleep-restricted work week resumed.

"In the end, we didn't see any benefit in any metabolic outcome in the people who got to sleep in on the weekend," said Depner.

On some measures, the weekend recovery group showed worse outcomes. For instance, in the group which had their sleep restricted the whole time, whole body [insulin sensitivity](#) declined by 13 percent. In the weekend recovery group it worsened by 9 to 27 percent, with sensitivity in the muscles and liver scoring worse than the other groups.

"It could be that the yo-yoing back and forth—changing the time we eat, changing our [circadian clock](#) and then going back to insufficient sleep is uniquely disruptive," said Wright.

Even when given the chance, people found it difficult to recover lost sleep. While they gained some ground Friday and Saturday, their body clocks shifted later Sunday night making it hard to fall asleep even though they had to get up early Monday.

In the end, the recovery group got just 66 minutes more sleep on average. Men made up more lost sleep than women.

Wright says it's possible that weekend recovery sleep could be an effective health countermeasure for people who get too little sleep a [night](#) or two per week. They hope to explore this in future studies.

For now, the takeaway is this: Consistency matters.

"This study demonstrates the importance of getting sufficient sleep on a regular schedule," said Michael Twery, Ph.D., director of the National Center on Sleep Disorders Research (NCSDR) at the National Heart, Lung, and Blood Institute, part of the National Institutes of Health. "Frequently changing sleep schedules is a form of stress associated with metabolic abnormalities."

So try to get 7 hours of sleep as many nights as possible.

More information: *Current Biology* (2019). [DOI: 10.1016/j.cub.2019.01.069](#)

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