

Past your bedtime? Inconsistency may increase risk to cardiovascular health

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Credit: Charles Rondeau/public domain

Despite increasing awareness of how critical sleep is to our health,

getting a good night's rest remains increasingly difficult in a world that's always "on"—responding to emails at all hours, news cycles that change with every tweet and staring endlessly into the blue light of cell phone, tablet and computers screens.

Scientists have stressed the importance of healthy sleep habits, recommending at least seven hours each night, and have linked lack of sleep to an [increased risk](#) in numerous health conditions, including diabetes, stroke and cardiovascular disease.

Now a new study shows whether or not you go to bed on time could also have an effect on your health. Researchers at the University of Notre Dame studied the correlation between bedtime regularity and resting [heart rate](#) (RHR) and found that individuals going to bed even 30 minutes later than their usual bedtime presented a significantly higher resting heart rate that lasted into the following day.

"We already know an increase in resting heart rate means an increased risk to cardiovascular health," said Nitesh Chawla, the Frank M. Freimann professor of Computer Science and Engineering at Notre Dame, director of the Center for Network and Data Science and a lead author of the study. "Through our study, we found that even if you get seven hours of sleep a night, if you're not going to bed at the same time each night, not only does your resting heart rate increase while you sleep, it carries over into the next day."

Chawla and his team analyzed data collected via Fitbit from 557 college students over the course of four years. They recorded 255,736 sleep sessions—measuring bedtimes, sleep and resting [heart](#) rate. Significant increases in RHR were observed when individuals went to bed anywhere between one and 30 minutes later than their normal bedtime. Normal bedtime was defined as the one-hour interval surrounding a person's median bedtime. The later they went to bed, the higher the increase in

RHR. Rates remained elevated into the following day.

Surprisingly, going to bed earlier than one's standard bedtime also showed signs of increasing RHR, though it depended on just how early. Going to bed 30 minutes earlier than usual appeared to have little effect, while going to bed more than a half hour earlier significantly increased RHR. In cases of earlier bedtimes, however, RHR leveled out during the sleep session. Circadian rhythms, medications and lifestyle factors all come into play when it comes to healthy sleep habits, but Chawla said it's vital to consider consistency as well.

"For some, it may be a matter of maintaining their regular 'work week' bedtime through the weekend," said Chawla. "For [shift workers](#) and those who travel frequently, getting to bed at the same time each night is a challenge. Establishing a healthy [bedtime](#) routine—as best you can—is obviously step number one. But sticking to it is just as important."

More information: Louis Faust et al, Deviations from normal bedtimes are associated with short-term increases in resting heart rate, *npj Digital Medicine* (2020). [DOI: 10.1038/s41746-020-0250-6](https://doi.org/10.1038/s41746-020-0250-6)

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