

# Circadian misalignment may impact diabetes risk

June 4 2014

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(HealthDay)—Circadian misalignment decreases insulin sensitivity and increases inflammation, and is independent of sleep loss in men, according to a study published in the June issue of *Diabetes*.

Rachel Leproult, Ph.D., from the University of Chicago, and colleagues conducted a parallel group design study involving 26 adults. The authors sought to examine whether the misalignment of [circadian rhythms](#) that typically occurs in shift work involves intrinsic adverse metabolic effects, independently of [sleep loss](#). The interventions involved three inpatient days with 10-hour bedtimes, followed by eight inpatient days with [sleep restriction](#) to five hours and fixed nocturnal bedtimes (circadian alignment), or with delayed bedtimes on four of the eight days with sleep restriction (circadian misalignment).

The researchers found that daily total sleep time was nearly identical in the aligned and misaligned conditions during the intervention (four hours 48 minutes versus four hours 45 minutes, respectively). Insulin sensitivity decreased significantly in both groups after sleep restriction, with no compensatory increase in insulin secretion; inflammation increased in both groups. The reduction in [insulin sensitivity](#) and increase in inflammation both doubled in male participants exposed to circadian misalignment compared with those who maintained regular nocturnal bedtimes.

"Circadian misalignment that occurs in shift work may increase diabetes risk and inflammation, independently of sleep loss," the authors write.

**More information:** [Abstract](#)  
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Citation: Circadian misalignment may impact diabetes risk (2014, June 4) retrieved 20 April 2024 from <https://medicalxpress.com/news/2014-06-circadian-misalignment-impact-diabetes.html>

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