

# Chronic sleep restriction negatively affects athletic performance

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A new study found that chronic sleep restriction negatively affects athletic performance.

Results show that following [sleep restriction](#), energy expenditure during submaximal exercise decreased 3.9 percent; maximal aerobic power decreased 2.9 percent and time to exhaustion decreased by 10.7 percent (37 seconds). Submaximal heart rate decreased after [sleep](#) restriction, as well as [peak heart rate](#) and Psychomotor Vigilance Test response speed.

"Our study is unique since we examined the relationship between sleep, physical performance, cognitive functioning, and physiology simultaneously," said lead investigator, Cheri Mah, MS, Clinical and Translational Research Fellow with the University of California, San Francisco Human Performance Center. "Future studies are needed to better understand the physiologic responses to sleep restriction, and conversely sleep extension, to understand the dose response of sleep interventions on performance and health."

The late-breaking research abstract will be presented Monday, June 13, in Denver at SLEEP 2016, the 30th Anniversary Meeting of the Associated Professional Sleep Societies LLC (APSS).

The randomized crossover study involved 12 healthy elite male cyclists who restricted sleep to 4 hours for three days or extended sleep to 10 hours for two weeks. Cyclists completed a baseline week of habitual sleep and a 2-week washout period in between interventions. Outcome

measures pre and post intervention included: a 20-minute submaximal test, a 1-minute incremental maximal exercise test, and a maximal time to exhaustion [test](#) on a bicycle ergometer and metabolic collection system as well as the Psychomotor Vigilance Test.

**More information:** Abstract Title: Sleep Restriction Slows Metabolism and Impairs Performance in Elite Cyclists, Abstract ID: LBA 3

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