

Worn-out warriors? ONR looks at importance of sleep to warfighters

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Lt. Cmdr. Chris Steele, program manager at the Office of Naval Research (ONR), talks about sleep for performance, safety and health during a Restorative Effects of Sleep Workshop organized by ONR. Credit: John F. Williams/Released

Americans are famously hard chargers who usually don't get enough shut-eye. That's particularly true in military ranks, where operational tempo is

fast paced and mission completion paramount. Sleep can become a casualty, and fatigue too often a reality.

To discuss the impact of [sleep deprivation](#) on warfighters—and share ideas on how to make sleep more revitalizing—the Office of Naval Research (ONR) and the Department of Defense's Human Performance Optimization Advisory Committee last week held a workshop titled the "Restorative Effects of Sleep."

"In the military, the mission comes first," said Lt. Cmdr. Chris Steele, ONR's Circadian, Sleep and Fatigue program manager. Steele's team supports research on the effects of [sleep loss](#) on warfighters—and ways to increase physical and mental resiliency. "You aren't always able to get as much sleep as you should. Our goal is to find ways to improve warfighter endurance and make the sleep they get as restful as possible. After all, sleep has a direct impact on performance and mission readiness."

Speakers included Dr. Charles Czeisler, professor of [sleep medicine](#) at Harvard Medical School, and Dr. David Dinges, chief of the Division of Sleep and Chronobiology at the University of Pennsylvania. Both are responsible for groundbreaking research in human circadian (24 hour) rhythms and the physiological and behavioral effects of sleep deprivation.

"You have military people who are working 18-hour shifts or participating in night operations and training exercises lasting for hours," said Czeisler. "Such a lack of sleep is harmful. We must emphasize how crucial sleep is to health and performance."

Workshop discussions covered topics such as the value of power naps, whether to split up warfighters' [sleep time](#) over the course of a day, and if daytime sleep is as beneficial as [nighttime sleep](#).

Presenters also highlighted current sleep research endeavors, many of which are sponsored by ONR. These included the value of establishing fixed work-rest schedules, monitoring alertness with and without proper rest and the effects of caffeine during sleep loss.

"There's also research sponsored by ONR targeting the newly discovered glymphatic system of the brain," said Steele, who holds a doctorate in zoology. "That's an internal plumbing system that may open during sleep, letting fluid flow through the brain, enabling it to flush out toxins that build up during waking hours. Essentially, sufficient sleep could literally clear your head."

Besides its military focus, Steele said he believes the conversations emerging from the workshop will benefit the greater public: "People are more aware of the importance of sleep than ever before. We're all busier, more stressed and have a hard time disconnecting from our smart devices at night. All of that impacts the quantity and quality of our [sleep](#)."

Steele's work aligns with the Naval S&T Strategy, which emphasizes health and resilience as key components of warfighter performance. Last year, ONR hosted a Focus Area Forum to discuss how science and technology can improve warfighter performance and resilience.

Provided by Office of Naval Research

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