

Morning blue light treatment improves sleep in patients with PTSD

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People with post-traumatic stress disorder (PTSD) experienced better sleep, a reduction in the severity of PTSD symptoms and more effective treatments after exposure to blue light therapy, according to a new study

conducted by researchers in the University of Arizona College of Medicine—Tucson's Department of Psychiatry and recently published in *Frontiers in Behavioral Neuroscience*.

Sleep is crucial for maintaining physical and [mental health](#), and inadequate sleep over time can impact all aspects of life with serious implications for long-term health, relationships, [cognitive abilities](#) such as learning, and healing.

The influence of sleep disruption on PTSD symptom severity is well established. Those who seek treatment to allay their PTSD symptoms often face a [vicious cycle](#) where poor sleep interferes with the effectiveness of treatments, negating any lessening of symptoms, which in turn contributes to sleep disruptions. To reduce and eliminate the emotional impact of traumatic memories, the patient needs quality sleep to integrate healing mechanisms achieved through cognitive or exposure therapy treatments.

"This research is exciting and unique because it points to an easy-to-use method for helping those with PTSD to retain the benefits of therapy long after the treatment ends," said psychiatry professor William "Scott" Killgore, Ph.D., director of the Social, Cognitive and Affective Neuroscience (SCAN) Lab and senior author on the paper, "Morning blue light treatment improves sleep complaints, symptom severity, and retention of fear extinction memory in [post-traumatic stress disorder](#)."

Dr. Killgore and the SCAN Lab team conducted a comprehensive assessment of daily morning blue-wavelength light exposure on individuals with clinically significant levels of PTSD. The goal was to ascertain if blue light therapy would help improve sleep and PTSD symptoms and sustain learned fear extinction memories, an analog of therapeutic treatment for trauma.

Study participants committed to 30 minutes of morning light exposure daily for six weeks, with half of the participants using blue-wavelength light and half using amber light. Researchers examined the neurobiological, autonomic and behavioral outcome changes during the study.

The 43 participants who received blue [light therapy](#) not only demonstrated significant improvements in the severity of their PTSD symptoms, but also reported improvements in [sleep](#) and showed an increased retention of fear extinction memories. In comparison, the 39 study participants who received amber [light](#) did not show the same retention of the extinction memories, but rather showed a return of the original fear memories.

"While the limitations of the research include its modest sample size and difficulties monitoring compliance, the possibilities of utilizing a treatment that is relatively simple, drug-free and inexpensive can offer hope for the large population of people living with the intense challenges of post-traumatic stress disorder," Dr. Killgore said.

"The data are thrilling," said Jordan Karp, MD, professor and chair of the College of Medicine—Tucson's Department of Psychiatry. "This nonpharmacological intervention is a promising life-changing and life-saving possibility for people suffering from PTSD."

More information: John R. Vanuk et al, Morning blue light treatment improves sleep complaints, symptom severity, and retention of fear extinction memory in post-traumatic stress disorder, *Frontiers in Behavioral Neuroscience* (2022). [DOI: 10.3389/fnbeh.2022.886816](https://doi.org/10.3389/fnbeh.2022.886816)

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