

A Controlled Trial of the Litebook Light-Emitting Diode (LED) Light Therapy Device for Treatment of Seasonal Affective Disorder (SAD)

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Background

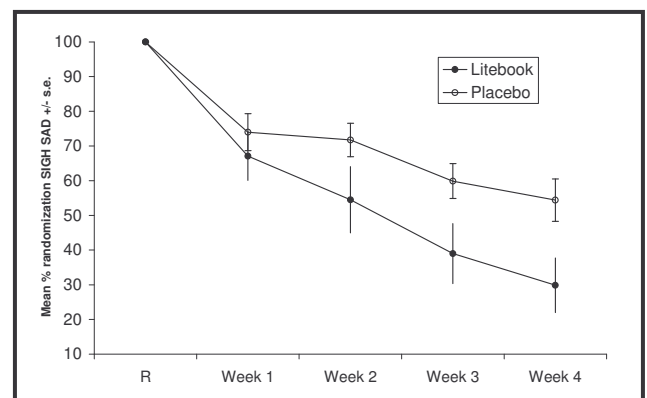
Recent research has emphasized that the human circadian rhythm system is differentially sensitive to short wavelength light. Light treatment devices using efficient light-emitting diodes (LEDs) whose output is relatively concentrated in short wavelengths may enable a more convenient effective therapy for Seasonal Affective Disorder (SAD).

Methods

The efficacy of a LED light therapy device in the treatment of SAD was tested in a randomized, double-blind, placebo-controlled, multi-center trial. Participants aged 18 to 65 with SAD (DSM-IV major depression with seasonal pattern) were seen at Baseline and Randomization visits separated by 1 week, and after 1, 2, 3 and 4 weeks of treatment. Hamilton Depression Rating Scale scores (SIGH-SAD) were obtained at each visit. Participants with SIGH-SAD ≥ 20 at Baseline and Randomization visits were randomized to active or control treatment: exposure to the Litebook LED treatment device (The Litebook Company Ltd., Alberta, Canada) which delivers 1,350 lux white light (with spectral emission peaks at 464 nm and 564 nm) at a distance of 20 inches or to an inactivated negative ion generator at a distance of 20 inches, for 30 minutes a day upon awakening and prior to 8 A.M.

Results

Of the 26 participants randomized, 23 completed the trial. Mean group SIGH-SAD scores did not differ significantly at randomization. At trial end, the proportions of participants in remission (SIGH-SAD < 9) were significantly greater (Fisher's exact test), and SIGH-SAD scores, as percent individual score at randomization, were significantly lower (t-test), with active treatment than with control, both in an intent-to-treat analysis and an observed cases analysis. A longitudinal repeated measures ANOVA analysis of SIGH-SAD scores also indicated a significant interaction of time and treatment, showing superiority of the Litebook over the placebo condition.



Conclusions

The results of this pilot study support the hypothesis that light therapy with the Litebook is an effective treatment for SAD.

Trial registration: Clinicaltrials.gov: NCT00139997

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 - University of Maryland, Baltimore, MD – (Litebook Research Grant 2005)
- **Performance enhancement in shift-work environments – Dr. Nancy Wesensten, Ph.D.**
 - Walter Reed Army Institute of Research, Bethesda, MD

Litebook Research Grant:

Established in 2005, the Litebook Research Grant of US\$25,000 is awarded on an annual basis for research on a novel or emerging application of light therapy using Litebook devices. Applications are accepted from researchers worldwide, and the recipient is chosen by an independent Selection Committee comprised of leading light therapy researchers. The grant is presented at the annual meeting of the Society for Light Treatment & Biological Rhythms (www.sltbr.org). **Effective 2008, the Research Grant has been increased to US\$50,000.**

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