

Light, Energy & Work

Avery DH, Kizer D, Bolte MA, Hellekson C.

Bright light therapy of subsyndromal seasonal affective disorder in the workplace: morning vs. afternoon exposure. Acta Psychiatr Scand. 2001 Apr;103(4):267-74.

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OBJECTIVE: Bright light therapy in seasonal affective disorder (SAD) has been studied extensively. However, little attention has been given to subsyndromal seasonal affective disorder (SSAD) or the use of bright light in the workplace. Many patients using bright light boxes complain of the inconvenience of use. Much of this inconvenience involves the often-recommended early timing of the bright light therapy. Patients, who already have difficulty awakening, often have difficulty using the bright light therapy soon after awakening before going to work. If bright light could be used effectively in the workplace, the treatment would be more convenient; the improved convenience would probably improve compliance. In this study, we studied the effectiveness of bright light therapy in subjects with SSAD in the workplace, comparing morning bright light with afternoon bright light. **METHOD:** Morning and afternoon bright light treatment (2500 lux) were compared in 30 subsyndromal seasonal affective disorder patients using the bright light therapy in the workplace. Hamilton Depression Ratings and subjective measures of mood, energy, alertness and productivity were assessed before and after 2 weeks of light therapy. **RESULTS:** Both morning and evening bright light significantly decreased the depression ratings and improved the subjective mood, energy, alertness and productivity scores. However, there were no significant differences between the two times of administration of the bright light treatment. Both bright light treatments were well tolerated. **CONCLUSION:** Bright light given in the workplace improves subjective ratings of mood, energy, alertness and productivity in SSAD subjects. Morning and afternoon bright lights resulted in similar levels of improvement.

Partonen T, Lonnqvist J.

Bright light improves vitality and alleviates distress in healthy people. J Affect Disord. 2000 Jan-Mar;57(1-3):55-61.

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BACKGROUND: The relative shortage of light during the decreasing photoperiod may compromise well-being. Earlier studies suggest that bright-light exposure may be of help to alleviate winter-bound symptoms. **METHODS:** We carried out a field study with exposure to bright light on office employees during winter. **RESULTS:** Repeated bright-light exposure improved vitality and reduced depressive symptoms. The benefit was observed not only in healthy subjects with season-dependent symptoms but also in those not having the seasonal variation. **CONCLUSIONS:** Bright-light exposure during winter appears to be effective at improving the health-related quality of life and alleviating distress in healthy subjects. **CLINICAL IMPLICATIONS:** Administration of bright light is a useful option to improve vitality and mood among subjects working indoors in wintertime. **LIMITATIONS OF STUDY:** Our field setting used self-reports, not interviews, for the assessment of outcome

Phipps-Nelson J, Redman JR, Dijk DJ, Rajaratnam SM.

Daytime exposure to bright light, as compared to dim light, decreases sleepiness and improves psychomotor vigilance performance. Sleep. 2003 Sep;26(6):695-700.

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STUDY OBJECTIVES: This study examined the effects of bright light exposure, as compared to dim light, on daytime subjective sleepiness, incidences of slow eye movements (SEMs), and psychomotor vigilance task (PVT) performance following 2 nights of sleep restriction. **DESIGN:** The study had a mixed factorial design with 2 independent variables: light condition (bright light, 1,000 lux; dim light, < 5 lux) and time of day. The dependent variables were subjective sleepiness, PVT performance, incidences of SEMs, and salivary melatonin levels. **SETTING:** Sleep research laboratory at Monash University. **PARTICIPANTS:** Sixteen healthy adults (10 women and 6 men) aged 18 to 35 years (mean age 25 years, 3 months). **INTERVENTIONS:** Following 2 nights of sleep restriction (5 hours each night), participants were exposed to modified constant routine conditions. Eight participants were exposed to bright light from noon until 5:00 pm. Outside the bright light exposure period (9:00 am to noon, 5:00 pm to 9:00 pm) light levels were maintained at less than 5 lux. A second group of 8 participants served as controls for the bright light exposure and were exposed to dim light throughout the entire protocol. **MEASUREMENTS AND RESULTS:** Bright light exposure reduced subjective sleepiness, decreased SEMs, and improved PVT performance compared to dim light. Bright lights had no effect on salivary melatonin. A significant positive correlation between PVT reaction times and subjective sleepiness was observed for both groups. Changes in SEMs did not correlate significantly with either subjective sleepiness or PVT performance. **CONCLUSIONS:** Daytime bright light exposure can reduce the impact of sleep loss on sleepiness levels and performance, as compared to dim light. These effects appear to be mediated by mechanisms that are separate from melatonin suppression. The results may assist in the development of treatments for daytime sleepiness.
