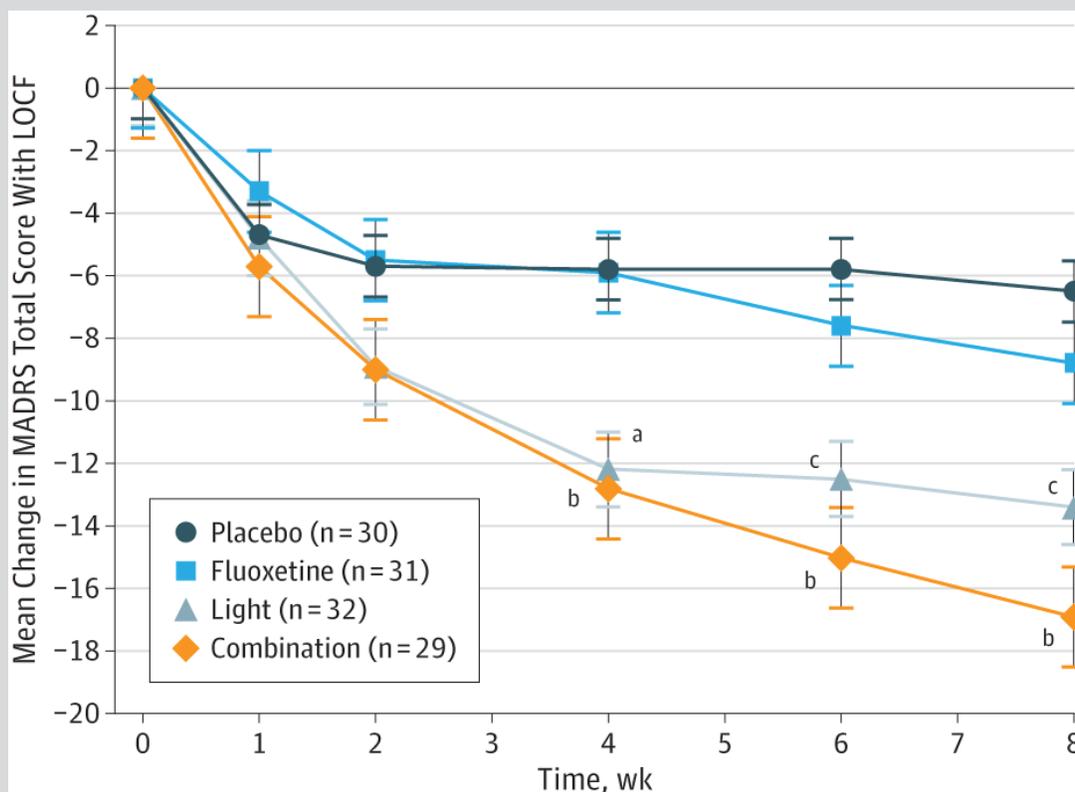


# DAYLIGHT MENTAL HEALTH Research Brief

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**Figure 1:** Bright light, like that delivered by daylight, was found to be an effective treatment of non-seasonal depression, performing better than a typical depression treatment, fluoxetine.

Source: <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2470681>

**Keywords:** daylight, mental health, depression, mood, mental illness, seasonal affective disorder

## CONTENT OVERVIEW

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## DAYLIGHT + MENTAL HEALTH SUMMARY

Access to daylight has positive impacts on the mental health of building occupants. Depression and seasonal affective disorder (SAD), in particular, are positively impacted by daylight. In general, daylight seems to improve mood, but conclusive studies remain elusive due to the myriad of factors involved in influencing mood.

## I. Improved Mood

In most cases, daylight has been anecdotally shown to improve the mood of building occupants. Boyce notes that the high illuminance associated with daylight on vertical surfaces is generally preferred by occupants and is connected to a reduced sense of gloom (Boyce 2003 17). However, he cautions that the effects on mood improvement seem to depend highly on individual preferences and expectations. Because mood is influenced by so many factors, unless daylighting is extremely uncomfortable, “[daylight’s] influence is likely to be overshadowed by many other factors” (Boyce 2003 66). For healthcare facilities, daylight post-surgical facilities have been shown to improve the mental well-being of patients, and Edwards notes that “improving the mental well-being of patients improves their recovery rates” (Edwards 2002 34). Bright light in the morning has been shown to decrease agitation among elderly dementia patients as well (Joseph 2006 6, Ulrich 2004 20).

## II. Impacts on Mental Illness

Though the connections to improved mood are a little tenuous, daylight has been shown to positively impact those with various types of mental illness, particularly depression. Direct sunlight in the morning was found to decrease the length of stay in the hospital for patients suffering from bipolar disorder. Those in eastern rooms exposed to direct sunlight in the morning had a mean 3.67-day shorter stay than patients in western-facing rooms (Edwards 2002 34, Joseph 2006 6, Ulrich 2008 90). Alzheimer’s patients also benefited from exposure to bright daylight throughout the day, having improved circadian rhythms and sleep cycles as well as being less prone to depression (Edwards 2002 33).

Daylight has the most impact on those suffering from depression. Studies have shown that “daylight is effective in reducing depression and improving mood, even for people hospitalized with severe depression” (Ulrich 2008 90). As with bipolar patients, daylight seems to help reduce the length of stay in the hospitals. Adult patients hospitalized with severe depression assigned to sunnier rooms stayed an average of 2.6 days less than patients assigned to rooms always in shade (Ulrich 2008 90). Daylight is also helpful in preventing post-operative delirium and depression; a study found that windowless ICUs had twice the number of patients develop post-operative delirium and depression as ICUs with access to daylight (Edwards 2002 34). For seasonal affective disorder (SAD), a seasonal form of depression, bright light is used to treat the disorder, and daylight offers a convenient way to provide the high level of light exposure needed (Boyce 2003 48). The light levels typically considered “bright” for SAD treatment are between 2,500 lux and 10,000 lux at the eye, with durations ranging from 30 minutes to 2 hours (Boyce 2003 49). Bright morning light appears most effective at treating SAD; it was found to be twice as effective as bright evening light, although evening light also helps alleviate the condition (Joseph 2006 5, Ulrich 2014 20).

*Depression*

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## III. KEY REFERENCES

### Review Articles

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- Boyce, P., Hunter, C. and Howlett, O. (2003) The Benefits of Daylight through Windows. Rensselaer Polytechnic Institute, Troy.
- Edwards, L., & Torcellini, P. (2002). Literature Review of the Effects of Natural Light on Building Occupants
- Joseph, A. (2006). The impact of light on outcomes in healthcare settings (No. Issue Paper #2). Concord, CA: The Center for Health Design.
- Ulrich, Roger, Craig Zimring, Xiaobo Quan, Anjali Joseph, Ruchi Choudhary. "The Role of the Physical Environment in the Hospital of the 21st Century: A Once-In-A-Lifetime Opportunity." The Center for Health Design. (2004).
- Ulrich, Roger S, Craig Zimring, Xuemei Zhu, Jennifer DuBose, Hyun-Bo Seo, Young-Seon Choi, Xiaobo Quan, and Anjali Joseph. "A Review of the Research Literature on Evidence-Based Healthcare Design." HERD: Health Environments Research & Design Journal 1, no. 3 (2008): 61-125.

### Further Research

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- Benedetti, F., Colombo, C., Barbini, B., Campori, E., & Smeraldi, E. (2001). Morning sunlight reduces length of hospitalization in bipolar depression. *Journal of Affective Disorders*, 62(3), 221–223.
- Golden, R. N., Gaynes, B. N., Ekstrom, R. D., Hamer, R. M., Jacobsen, F. M., Suppes, T., et al. (2005). The efficacy of light therapy in the treatment of mood disorders: A review and meta-analysis of the evidence. *American Journal of Psychiatry*, 162(4), 656–662
- Lewy, A. J., Bauer, V. K., Cutler, N. L., Sack, R. L., Ahmed, S., Thomas, K. H., et al. (1998). Morning vs evening light treatment of patients with winter depression. *Archives of General Psychiatry*, 55(10), 890-896.

### Popular Press

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- ["Why Sunlight is So Good For You"](#) - TIME
- ["Disruption of daily rhythms linked to mental health problems"](#) - The Guardian
- ["Yes, your sleep schedule is making you sick"](#) - New York Times
- ["The Season of the Witch? The ADA and Seasonal Affective Disorder"](#) - Workforce