

DAYLIGHT STRESS

Talking Points

PARTNERSHIP INITIATIVE
INTEGRATED DESIGN LAB
at the Center for Integrated Design

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Figure 1:

Access to daylight helps decrease stress levels, whether it comes from windows, clerestories, or skylights.

Source: <https://officesnapshots.com/2017/10/16/hanna-andersson-headquarters-portland/d>

Keywords:

daylight, stress, health, employee burnout, employee turnover, academic performance

CONTENT OVERVIEW

- I. Decreased Stress
- II. Increased Stress
- III. References

DAYLIGHT + STRESS SUMMARY

Daylight has the ability to impact the stress level of building occupants in both positive and negative ways. In general, positive benefits from decreasing stress arise from increasing access to daylight while mitigating extreme conditions; conversely, negative benefits arise from lack of daylight access as well as uncontrolled, extreme conditions of high glare

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I. Decreased Stress

- i. Access to daylight can decrease both mental and physical stress on both patients and hospital staff
- ii. Access to a minimum of 3 hours of sunlight a day resulted in less stress and higher satisfaction at work.
- iii. Daylight has been shown to reduce the stress associated with intensive care units.
 - a. Windowless ICUs had twice as many patients suffer from postoperative delirium and depression due to stress
- iv. Studies have shown that patients in bright, sunny rooms experience less stress than patients in less sunny rooms.

II. Increased Stress

- i. Stress + Health Outcomes
 - a. Increased stress due to improper access to daylight has a number of negative impacts.
 - b. Stress, in and of itself, is a negative impact and has adverse effects on many other health outcomes
 - c. Intensive Care Units are particularly stressful for patients, leading to the development of post-operative delirium
 1. Windowless ICUs had twice as many patients suffer from postoperative delirium and depression due to stress
- ii. Stress + Performance
 - a. Increased stress has negative impacts on the performance of building occupants.
 - b. In a study of nurses, stress was found to negatively impact performance, particularly for novice staff members.
 - c. "High stress workplaces contribute to employee burnout and intention to leave their job" (Ulrich 2008).
 - d. According to a Joint Commission report in 2002 registered nurses have an annual turnover rate averaging 20%
 - e. The physical environment of healthcare workplaces has been identified as one of the causes of occupational stress, including poor ambient environmental conditions like lighting quality and access to daylight.
 - f. Due to the high stress and potential turnover rates for nurse, "investments in the environment to increase staff satisfaction could potentially reduce the cost of staff turnover, which can cost more than \$62,100 per nurse replaced" (Ulrich 2008)

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//. Increased Stress cont.

iii. Stress + Schools

- a. Research has shown that insufficient lighting, either too much or too little, can reduce students' abilities to learn because of the effect of light on physiology.
- b. Lack of quality light, like that provide by daylight, can strain students' eyes
 - 1. This decreases information processing and learning ability, contributing to higher stress levels.
- c. Stress impacts growth hormones, and the increased presence of these support observed decreased mental capabilities, agitated physical behavior, and fatigue in students exposed to no daylight during the school day.

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III. KEY REFERENCES

Review Articles

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Further Research

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Popular Press

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