



Boost learning and support healthy sleep patterns

# Biocentric lighting in education

Learning is a vital part of life, but we often learn indoors. The importance of adequate lighting in schools and educational centers is therefore important. With Biocentric lighting, we help ensure health and well-being for students and teachers.

In addition to supporting vital bodily functions, light also has a direct mood enhancing effect, which is supported by multiple studies. One study shows that adolescents who do not receive enough light are more susceptible for depressions. A growing number of students on college campuses seek help for depressive symptoms such as profound sadness and low motivation. Light treatment has shown improvement in overall depression scores for college students, as well as improved sleep with an increase in average night sleep from 5 to 7 hours.<sup>1</sup>

## How can Biocentric lighting be used in education?

- ✓ Help students reach their full potential and improve test scores
- ✓ Use light to restore disturbed sleep patterns
- ✓ Promote creativity and productivity in the classroom

Biocentric lighting is a lighting system that simulates the most important aspects of daylight indoors. The light is designed to support a stable circadian rhythm with many benefits for our health and well-being, including sleep, mood, alertness and cognitive performance.

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## Improve test scores through a healthier learning environment

Lighting plays a key role in creating an efficient and comfortable learning environment. Indoor lighting can in addition to fulfilling the visual requirements also be used as a tool to help students reach their full potential. Several studies highlight the modulating effect of light on mathematical tasks. A field study from a Biocentric lighting installation at a school in Denmark showed a 12% improvement in math test results.<sup>2</sup>

## Promote creativity and productivity

Light can also help create a structure for the day. Adolescents are particularly sensitive to light and this puts a higher requirement of the type of light needed for different times of the day. Biocentric light recipes are developed and tailored specifically for a school environment. For example, “Creative” has a warmer light with lower intensity to stimulate creative work and teamwork.



SAGA Surface Mount at Anneroskolan in Helsingborg

1. House LA, Walton B. The Effectiveness of Light Therapy for College Student Depression. *J College Stud Psychother.* 2018;32(1):42-52. doi:10.1080/87568225.2017.1321975
2. <https://www.brainlit.com/2020/01/28/students-test-results-increase-by-12-thanks-to-the-right-lighting/>
3. Healthy Sleep. Division of Sleep Medicine at Harvard Medical School and WGBH Educational Foundation. doi:10.1080/14672715.1968.10405151
4. Fargason RE, Fobian AD, Hablitz LM, et al. Correcting delayed circadian phase with bright light therapy predicts improvement in ADHD symptoms: A pilot study. *J Psychiatr Res.* 2017;91:105-110. doi:10.1016/j.jpsychires.2017.03.004



ASK Ceiling Panels at Lindesborgsskolan in Malmö

## Reduce sleep problems for children and young adults

Kids and adolescents often struggle with a delayed circadian rhythm, impacting their sleep and development. Like adults, children and young adults spend a lot of time indoors and in front of screens late at night which creates problems for sleep. Sleep deprivation leaves the brain exhausted and makes it more difficult to concentrate and learn new things. Too little or poor quality sleep affects our ability to process memories, which is essential for learning new information.<sup>3</sup>

Many children with ADHD have a delayed sleep onset, a later increase in the onset of melatonin at night and an association with evening chronotype “night owls”. Lighting can be used as a tool to promote an earlier sleep phase. Studies also show that treating sleep disorder in ADHD by improved lighting may alleviate symptoms of ADHD.<sup>4</sup> Biocentric lighting helps maintain a healthy and regular sleep cycle with many benefits.