



Chroma Zenit

Circadian Lighting Gives Neuro Unit in Frederikshavn a Unique Status

New Standards for environment and Treatment of Brain-Injured Patients

At the Neuro Unit in Northern Jutland, the implementation of Chroma Zenit circadian lighting has not only enhanced the rehabilitative environment for patients - it has also set a new standard for treating brain-injured individuals.

At the Neuro Unit in Frederikshavn, patients with brain injuries from a stroke - a brain haemorrhage or clot in the brain - or from trauma such as a cycling accident, are treated. While the reasons for admission vary from patient to patient, they all share a common issue of circadian rhythm disruptions.

“All patients here have recently experienced a brain injury, and one of the well-known symptoms of brain injury is the disruption of the circadian rhythm”

Rikke Brorholt, the head nurse of the unit

Based on this knowledge the Neuro Unit chose circadian lighting as a rehabilitation technology – and this decision has had a positive impact on the patients’ sleep and wake cycles.

Improved Rhythm Benefits Rehabilitation

In contrast to the previous lighting in the unit, the circadian lighting automatically adjusts colour and intensity in sync with the natural light outside. Previously, the lighting in the unit remained the same day and night, posing challenges to the patients’ sense of time and circadian rhythm.

“If patients get up to use the restroom at night and are met with bright light, they may mistakenly think it’s morning and time to start the day. This confusion has decreased significantly since the implementation of circadian lighting. Night staff report a calmer atmosphere, with fewer instances of agitation. Understanding that night is meant for rest helps in regulating the patients’ circadian rhythms, contributing to a more peaceful environment overall”, says Rikke Brorholt continuing:

“Helping patients achieve better sleep and a healthier rhythm is crucial for them to be fresh and ready to train during the day. Brain fatigue is a significant issue for many of our patients as well. Without adequate rest or brain relaxation, everything falls apart.”

Therefore, it is crucial for the patients’ rehabilitation process to be able to unwind multiple times throughout the day – and this has become easier with circadian lighting.

“It enhances this familiar sense of home, allowing patients to feel safe and cosy in their surroundings. We often hear from patients and their families that a calming atmosphere, reminiscent of being at home in front of the television, settles in when the light dimmers and everything slows down to a soothing pace” she explains.

However, it’s not just the patients and their families who experience the effects of circadian lighting; the staff has also reaped the benefits.

A Healthy Work Environment For All Shifts

The Neuro Unit operates around the clock with three shifts; day shift, evening shift, and night shift, each requiring specific lighting to ensure that all staff receive the appropriate illumination – a need the previous lighting setup could not fulfil.

“I used to work as a night shift nurse many years ago, and I often found it challenging to unwind when I got home because I had been immersed in artificial light. While I was physically active during my shift, being exposed to blue light all night made it difficult for me to relax” explains Rikke Brorholt.

Before the department implemented circadian lighting and delved into the significance of the physical environment for rehabilitation, it resembled a typical hospital unit with bright lighting around the clock. However, this setup was far from ideal for the staff, as different shifts necessitated varying lighting requirements.

“Many evening shifts have shared that they used to sit for 2-3 hours when they returned home after work, struggling to unwind due to the harshness of the traditional lighting. It made it challenging to relax, especially for those working night shifts, as the bright light kept them alert” she says.

This issue has been resolved with circadian lighting. Now, several evening and night shifts find it much easier to unwind and go to bed when they get home because the evening light is tailored to their biological light needs. The circadian lighting has also impacted the overall work environment, benefiting both the staff and the patients.

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The work environment is crucial for providing excellent care. To achieve positive outcomes for the patients, there must also be a supportive work environment for the staff

Rikke Brorholt, the head nurse of the unit



A Big Donation Paved the Way

The circadian lighting project became a reality for the Neuro Unit after receiving a record-breaking donation from a local foundation back in 2022.

“We were fortunate to receive a generous million DKK donation from the Melsen Foundation, opening up the opportunity for us to explore the latest rehabilitation technologies on the market. That’s when we stumbled upon some articles about the amber-coloured light, sparking our interest”, says Rikke Brorholt.

Research has shown that Chroma Zenit circadian lighting, particularly the amber-coloured night light without blue wavelengths, is effective in neurological treatment environments like the one at the Neuro Unit in Northern Jutland. “The articles and research highlighted Chromaviso as the creator of the lighting, which made us reach out to them. I believe there has been excellent communication throughout the entire process”, says Rikke Brorholt, concluding:

“All in all, the circadian lighting has elevated our department to a unique status, creating a rehabilitative environment unlike any other. It’s not just the treatment that sets us apart, but also the surroundings, which differ from typical hospital



About Chromaviso

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