Proper Identification and Treatment of Sleep Disorders Can Improve Brain Injury Outcomes

Interrupted sleep can hinder recovery following a brain injury.

Sleep is known to be an essential component of daily living, critical for optimal cognitive processing, immune system functioning, emotional balance, and general health. Sleep disturbances are commonly found in brain injury patients and can adversely affect outcome.

Disturbances in sleep have been linked to impaired attention, diminished executive functioning, and poor memory consolidation. These deficits are particularly concerning for brain injury patients, whose cognitive and affective processes are already affected as a result of their injuries. Compared to uninjured, healthy populations, brain injury patients who've endured either a traumatic brain injury or stroke exhibit disrupted sleep patterns, especially in the deeper stages of sleep and the Rapid Eye Movement (REM) stage. Specifically, REM and deep sleep have been associated with the ability to consolidate memory.

Brain injury patients displaying evidence of disturbed sleep patterns show a greater level of disability, according to the Disability Rating Scale (DRS) and the Mayo-Portland Adaptability Inventory (MPAI), indicating that interrupted sleep can hinder recovery following a brain injury.

Sleep disorders also include apnea, which is the temporary cessation of breathing during sleep. Apnea will disrupt sleep, thus increasing the likelihood of interrupting deep sleep and REM. In addition, apnea can further compromise a patient's health by limiting the amount of oxygen in the blood. These sleep challenges can have serious effects on overall health. Fortunately, apnea can be treated once it is properly diagnosed.

With the goal of improving patient outcome during rehabilitation, the Centre for Neuro Skills® obtains a polysomnography (sleep evaluation), which provides a comprehensive assessment of the patient's sleep. During the evaluation, patients are attached to sensors that are used to monitor brain waves, heart rhythm, muscle activity, breathing and oxygen levels while they sleep.

These measures aid physicians in diagnosing sleep disorders that may be treated. The treatment of these underlying sleep disorders is likely to have an impact on patient recovery during the rehabilitation process.

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