



Managing Preoperative Sleep Disruption to Reduce Acute Postoperative Pain

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DESCRIPTION

Sleep disturbances before surgery are common and can have a significant impact on the recovery process after a surgical procedure. These disturbances may be caused by a variety of factors such as anxiety, stress, pain, or medical conditions that affect the quality of sleep. As individuals approach their surgery date, the mental and physical strain can disrupt their sleep patterns, potentially increasing the risk of experiencing acute postoperative pain. Understanding the connection between preoperative sleep disturbance and acute postoperative pain is essential for improving patient outcomes and enhancing recovery protocols.

Preoperative sleep disturbances affect a large proportion of patients undergoing surgery. It is well documented that sleep plays a vital role in maintaining immune function, promoting tissue healing and managing pain. When sleep is disrupted before surgery, patients may be more susceptible to postoperative complications including prolonged pain and delayed recovery.

Anxiety about the upcoming surgery is a common cause of sleep disturbances. Patients often worry about the surgery itself, the potential outcomes and the risks involved. This anxiety leads to difficulty falling asleep, frequent awakenings during the night, or poor sleep quality. Sleep deprivation can, in turn, worsen the patient's psychological state, leading to a vicious cycle that exacerbates the problem.

Studies have shown that individuals with poor sleep before surgery tend to experience heightened sensitivity to pain. This is due to the fact that sleep deprivation affects the brain's pain processing mechanisms, making individuals more sensitive to both chronic and acute pain. As a result, patients with preoperative sleep disturbances may have an increased perception of postoperative pain, which can complicate recovery. Sleep is also essential for the proper functioning of the immune system. During deep sleep, the body undergoes processes that help repair tissues and regulate inflammation. Chronic sleep disruption can weaken immune responses and increase inflammation, leading to a slower recovery after surgery. This

could result in an increased risk of postoperative infections and extended recovery time. Sleep deprivation before surgery can disrupt hormonal regulation, particularly the release of stress hormones like cortisol. Elevated cortisol levels may contribute to increased pain perception, heightened stress responses and reduced pain tolerance, making it more difficult for patients to manage postoperative discomfort. Acute postoperative pain is a natural response to surgery, but the intensity and duration of pain can vary significantly from one individual to another. Several factors influence the severity of acute postoperative pain, including the type of surgery, the patient's pain threshold and their psychological and emotional state.

Surgical interventions cause tissue injury, which leads to the release of chemical signals that trigger inflammation and pain. The extent of tissue disruption and the area of the body affected also play a role in the intensity of postoperative pain. For example, abdominal or chest surgeries typically result in more significant pain compared to minor procedures like arthroscopy or skin biopsies.

Pain management strategies immediately following surgery are critical for helping patients manage acute pain. These strategies may include medications like opioids, Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) and local anesthetics. While these medications can help control pain, they are not always fully effective for all patients. For those with sleep disturbances leading up to surgery, managing pain becomes even more difficult. When individuals experience preoperative sleep disturbances, their sensitivity to pain increases, as mentioned earlier. This increased sensitivity can amplify the perception of postoperative pain, making it more challenging to achieve effective pain management. Patients who have not had restorative sleep before surgery may require higher doses of pain medications to achieve the same level of comfort as those with adequate sleep. Pain can also lead to further sleep disturbances. The discomfort following surgery may prevent patients from finding a comfortable sleeping position, leading to fragmented or poor-quality sleep during the recovery phase. This lack of rest

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further impairs the healing process, creating a cycle of pain and sleep disruption that can slow down recovery.

Since preoperative sleep disturbances can contribute to more intense acute postoperative pain, addressing these issues before surgery is an important aspect of improving overall recovery. Several strategies can be employed to manage sleep disturbances and reduce postoperative pain. The concept of sleep hygiene involves adopting habits and practices that promote better sleep. Educating patients about the importance of sleep and encouraging them to follow a consistent sleep schedule can help them achieve better rest before surgery. This includes avoiding stimulants like caffeine and alcohol, minimizing screen time before bed and creating a calm and comfortable sleeping

environment. Relaxation methods such as deep breathing exercises, meditation, or progressive muscle relaxation can be effective in reducing preoperative anxiety and promoting better sleep. These techniques can help manage stress and calm the mind, leading to a more restful sleep and better pain management during recovery.

For patients with persistent sleep disturbances, Cognitive Behavioral Therapy for Insomnia (CBT-I) can be an effective treatment. CBT-I focuses on changing thoughts and behaviors that contribute to poor sleep and teaching patients effective sleep strategies. This type of therapy has been shown to improve sleep quality and duration, which can positively affect postoperative pain outcomes.