



SLEEP Clinician Handout

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“Few treatments are as inexpensive and effective as a nightly dose of restful sleep.”



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SLEEP AND PAIN

Good sleep is important for our physical and mental health. Many studies link poor sleep to an increased risk of heart disease, cancer, kidney disease, high blood pressure, diabetes, stroke, and obesity. When we get good quality sleep we have more energy, feel better emotionally, digest our food more effectively, and our bodies have a stronger immune response. Over 50% of patients with chronic pain suffer from poor quality sleep. Disturbed sleep affects the perception of pain by lowering the pain threshold. Providers are encouraged to regularly screen for sleep quality and sleep disorders such as sleep apnea or insomnia.^{1,2}

Symptoms of sleep deprivation include:

- Fatigue
- Reduced cognitive abilities, lack of attention, poor memory
- Increased centralized pain sensitivity (fibromyalgia, hyperalgesia)
- Muscle aches and pains (myalgia)
- Increased anxiety and depression
- Gastrointestinal problems
- Inflammation and impaired immune response

SLEEP AND THE BODY'S IMMUNE RESPONSE

Getting a good night's sleep can boost our immune system. Studies show that when we don't get quality sleep or enough sleep, we are more likely to get sick after being exposed to a virus, such as a common cold. Lack of sleep can also affect how fast you recover if you do get sick. During sleep, your immune system releases proteins called cytokines, some of which help promote sleep. Certain cytokines need to increase when you have an infection or inflammation, or when you're under stress. Sleep deprivation may decrease production of these protective cytokines. In addition, infection-fighting antibodies and cells are reduced during periods when you don't get enough sleep.³

WHY IS THE CIRCADIAN RHYTHM IMPORTANT?

Our circadian clock regulates a daily sleep-wake cycle, called the circadian rhythm. This internal clock is located in the brain's hypothalamus. The clock runs constantly, receiving light signals from our eye's retina, and adjusts our hormone levels. At night, the brain releases melatonin, causing sleepiness, and suppressing cortisol, an activating hormone. When our retina sees morning light, it triggers our circadian system to suppress melatonin, and increase levels of cortisol, testosterone, leptin, and ghrelin that wake us up, provide energy for activities, and stimulates our appetite.⁴

Habits that disrupt our sleep

Patients with persistent pain often have habits that disrupt their circadian clocks. They may sleep late into the morning, stay indoors with no change in lighting, or take long naps during the day. Many stay up late watching TV, playing video games, or using computers or social media apps. These blue light-emitting devices can cause our circadian clock to delay melatonin secretion, making it difficult to get to sleep. When we vary our sleep and wake times, our circadian clock cannot keep up. It's important that we work with our circadian clock, getting up in the morning and exposing ourselves to light at about the same time every morning. In the evening, we can turn off screens, darken our sleeping area, and relax to help our system convert to nighttime restorative physiological process.⁵

Shift Work

The circadian clocks of people who work evening or night shifts are often not synchronized with their environment. This desynchronization can be detrimental to their health. Studies have uncovered elevated rates of several diseases, including cancer, diabetes, cardiovascular risks, obesity, mood disorders and age-related macular degeneration for people who do shift work. If you have patients who work evening/nights shifts or who have a varying schedule, watch for sleep related disorders. Our bodies can adjust to different 24 hour schedules, but it's important to keep a regular schedule, even on days off. Good sleep habits/hygiene still apply, just on a different schedule.⁵



INSOMNIA

Insomnia is defined as difficulty falling asleep, maintaining sleep, waking up too early, or experiencing non-refreshing sleep. Approximately 60% to 80% of patients with pain have symptoms of insomnia. Chronic stress can lead to insomnia. Insomnia has been linked to poorer daytime functioning (fatigue, poorer concentration, memory and alertness) and increased mood disturbances (irritability, lethargy), making it more difficult to manage pain.

Cognitive behavioral therapy for insomnia (CBT-i)

CBT-I has been shown to be effective in treating pain related insomnia. CBT-I often includes psychoeducation, sleep hygiene, relaxation training, cognitive therapy, sleep restriction, stimulus control therapy, sleep modulation/restriction, biofeedback, and imagery training.⁶

SLEEP APNEA

Obstructive Sleep Apnea Syndrome (OSAS) is a common condition characterized by frequent episodes of upper airway collapse and repeated episodes of apnea and hypopnea during sleep, and can lead to excessive daytime sleepiness. Symptoms include snoring, breathing pauses, lack of concentration, memory impairment and psychological disturbances. OSAS has been associated with many types of pain and medical problems and is associated with increased morbidity and mortality, diminished quality of life, workplace issues and motor vehicle accidents. Data from patients with OSAS supports a correlation between sleepiness and pain sensitivity. STOP-Bang is a widely used screening tool for sleep apnea.⁷

SLEEP AND MEDICATIONS

Ensure you review medication history, including prescribed and OTC sleep aids. Sleep aids can be used for temporary relief of insomnia. Be aware that patients can become dependent on sleep medications over the long term. If this is a concern, consider tapering your patient slowly off these medications. A significant side effect of opioids related to sleep is opioid induced sleep disordered breathing. Talk with your patient about whether opioids may be interfering with their sleep.

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