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# Managing sleep disruptions during cancer: Practical tips for patient education

by Caroline Arbour, Danny Hjeij, and Karine Bilodeau

## ABSTRACT

*Sleep disruptions are commonly reported during and after cancer. In addition to its immediate relevance for patients' immunity and response to treatment, poor sleep can also affect their psychological health and, ultimately, quality of life. Sleep disruptions can also affect caregivers who are supporting cancer patients, adding to their burden. Therefore, it is important for both patients and their families to receive personalized advice and assistance to improve sleep quality. Research has demonstrated that providing intervention for sleep difficulties early in the care trajectory of cancer patients can enhance satisfaction with care and reduce depression. In this article, we will outline basic practical tips that oncology nurses can offer to patients experiencing sleep difficulties, ranging from basic sleep hygiene practices to rearranging their bedroom environment for better rest.*

**Keywords:** cancer, sleep, sleep hygiene, patient education, nursing

## AUTHOR NOTES

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## INTRODUCTION

More than 70% of patients with cancer experience sleep disturbances at one point or another during their recovery trajectory (Al Maqbali et al., 2022). The symptoms of sleep disturbance often persist in the months and years following the cessation of primary cancer treatments (Schieber et al., 2019), placing a significant burden on both cancer survivors and the health care system. According to actigraphy studies (an actigraph looks like a wristwatch and is used as a wearable device to measure activity and detect sleep disorders), sleep disturbances before, during, and after cancer treatment often manifest as difficulties in one or more of the following areas: falling asleep, staying asleep, early awakening with an inability to fall back asleep, and non-restorative sleep with or without daytime sleepiness (Büttner-Teleagă et al., 2021). Additionally, sleep-related breathing disorders, such as obstructive sleep apnea syndrome, are common among cancer patients and are significant sources of complaint. Conversely, conditions like narcolepsy, restless legs syndrome, and REM-sleep behaviour disorder are rarely observed in this population (Büttner-Teleagă et al., 2021).

Sleep disturbances in patients with cancer are influenced by various factors, including demographics, lifestyle, disease severity, treatments received, and psychological factors. Factors such as being female, older age, advanced disease stage, undergoing chemotherapy, and having a lower socioeconomic status have been identified as contributors to the development of sleep disorders in cancer patients (Fane & Weeratna, 2020; Zhang et al., 2019; Zhao et al., 2020). Furthermore, night sweats and lymphedema resulting from breast cancer treatments can also interfere with

sleep in affected individuals (Beverly Hery et al., 2023; Bock et al., 2024).

Sleep disturbances can worsen side effects of cancer treatment and exacerbate psychological issues related to the illness (Büttner-Teleagă et al., 2021). Extensive cohort studies among cancer survivors reveal that fragmented sleep is linked to heightened symptoms of depression and reduced quality of life (Robinson et al., 2016). Difficulties falling asleep or maintaining sleep at night contributed to decreased activity tolerance, reduced daytime activity, and deconditioning (Castelli et al., 2022). In the early stages of cancer, there exists a significant connection between sleep disturbances and the fear of cancer recurrence (Perndorfer et al., 2022). It is worth noting that sleep disturbances can also impact caregivers of patients with cancer due to frequent waking at night to care for the patient's needs (Valero-Cantero et al., 2021), leaving the caregivers susceptible to fatigue, anxiety, depression, and psychological distress.

The primary treatment of non-breathing related sleep disturbances (e.g., insomnia) in oncology should involve a combination of cognitive and behavioral techniques (Grassi et al., 2023). To optimize sleep, a series of behaviors and stimulus control strategies recognized to promote circadian rhythmicity can be used. These interventions often focus on three principles: 1) sleep hygiene education, 2) stress reduction strategies, and 3) reconfiguration of sleep environment. The use of multiple strategies is often more effective in reducing sleep complaints than a single strategy used alone (Grassi et al., 2023). The following will outline basic practical tips that oncology nurses can offer to patients experiencing sleep difficulties.

## BASIC PRINCIPLES OF SLEEP HYGIENE

### Schedule

Maintaining a consistent sleep schedule, including on weekends, is crucial for preserving the body's internal clock and enhancing sleep quality.

### Lighting

Ensuring exposure to sunlight during the day and reducing exposure to bright light in the evening help to regulate melatonin levels, a hormone essential for initiating and maintaining high-quality sleep (Chen et al., 2020). Bright light therapy including blue or green light therapy, shows promise in enhancing sleep quality and alleviating fatigue, depression, and anxiety symptoms in cancer patients, particularly among women (Wu et al., 2021). Typically, these therapies involve self-administration once or twice daily – upon waking up and sometimes in the late afternoon (but not too close to bedtime) – for 30 minutes each session (Wu et al., 2021).

### Consumption of stimulants

Stimulants like caffeine and nicotine can disrupt sleep by activating cholinergic neurons in the brain. It is best to limit consumption of these substances, especially in the afternoon and evening. While occasional alcohol consumption may seem relaxing, even light amounts close to bedtime can negatively affect sleep (Britton et al., 2020).

### Physical activities

While regular exercise is beneficial for regulating sleep and fatigue, it is advisable to avoid vigorous activity immediately before bedtime. Otherwise, research indicates that engaging in moderate-intensity aerobic exercise, especially in the late afternoon, can enhance sleep quality and architecture (Wang & Boros, 2021).

### To nap or not to nap?

Sleep hygiene recommendations in the general population often advise against naps lasting longer than 30 minutes as it may interfere with endogenous sleep rhythms (Irish et al., 2015). Napping for less than 30 minutes is

most beneficial for cognitive function, alertness, and mood. The idea that naps longer than 30 minutes negatively affect nighttime sleep may primarily apply to older adults (Irish et al., 2015). Regardless of age, taking a nap after 3 p.m. can significantly hinder falling asleep at night and diminish overall sleep quality.

### Stress reduction strategies

Engaging in relaxing activities, especially before bedtime, is a fundamental aspect of maintaining good sleep hygiene. Psychological stress tends to increase arousal, which is believed to be a key mechanism underlying sleep disruption. Conversely, relaxation techniques can help regulate the hypothalamic–pituitary–adrenal axis, leading to reduced arousal and improved sleep (Nollet et al., 2020). Acupuncture, yoga therapy, meditation, foot baths, and shiatsu have been found useful to reduce insomnia and increase sleep efficiency (Ng & Parakh, 2021).

### Sleep environment

To create a sleep-friendly environment, it is advisable to follow several recommendations. These include turning off screens emitting blue light, dimming lights, engaging in gentle activities, such as reading or relaxation, and using the restroom before bedtime. Maintaining a room temperature between 17°–18°C is recommended to optimize sleep architecture (Shin et al., 2016). While bedding materials may have minimal impact on sleep, sleepwear made from thermoregulating fabrics like wool or cotton can enhance the ability to fall asleep and promote restorative rest (Chow et al., 2019; Shin et al., 2016). Given the strong association between poor sleep and house dust mite allergic rhinitis (Leger et al., 2017), it is recommended to wash sheets weekly. White noise that results from combining sounds of all frequencies, such as steam hissing from a radiator or the whir of a fan, and pink noise that is equivalent to the spectrum of natural rainfall, may be effective for some individuals in improving sleep quality, acting similarly to a lullaby (Capezuti

et al., 2022). For women experiencing hot flashes, wearing loose-fitting sleepwear, and ensuring air circulation with fans or open windows can be beneficial. Additionally, women undergoing breast cancer treatment should avoid sleeping on the operated side, refrain from wearing tight sleeve clothing, and elevate the operated arm on a pillow to heart level (Canadian Cancer Society, 2024).

## WHEN SLEEP EDUCATION IS NOT ENOUGH

While strategies like sleep hygiene education, stress reduction, and adjusting one's environment can be effective in improving sleep, certain sleep disorders, such as severe insomnia, may necessitate additional treatments. In such cases, medications like benzodiazepines (such as temazepam), tricyclic antidepressants (such as doxepin), or hypnotics (such as zolpidem) may be prescribed to help patients achieve restorative sleep. However, despite their widespread use in oncology, these medications can have adverse effects including drowsiness, dizziness, fatigue, dry mouth, nausea, and hypotension leading to falls (particularly in elderly individuals), as well as rebound insomnia. Therefore, long-term daily use is generally not recommended in oncology due to the risks of tolerance, dependence, and side effects (Grassi et al., 2023).

## ASSESSMENT OF SLEEP IN ONCOLOGY PATIENTS

Nurses have an important role in identifying and evaluating sleep disturbances in cancer patients. The Edmonton Symptom Assessment Scale (ESAS), widely utilized in oncology, includes a sleep component, with a severity score ranging from 0 to 10 (0 indicating the best sleep and 10 the worst; Hui & Bruera, 2017). By referencing the ESAS, nurses can detect sleep issues in patients and provide necessary education and support. Once sleep problems are noted, nurses can ask further questions to identify factors contributing to or alleviating the problem. Common areas of questioning include the patient's history of sleep problems, weekday versus weekend sleep patterns,

time taken to fall asleep, frequency of nighttime awakenings and return to sleep, morning feelings of restfulness or fatigue, presence of loud snoring or gasping for air during sleep, pre-sleep use of electronic devices, recent health changes, medication use, and relevant factors, such as pregnancy, menopause, and substance consumption. All patients with excessive daytime sleepiness should be screened for sleep apnea.

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## DECLARATION OF CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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