

# Sleep-Wake Disturbances

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The following is an excerpt from Chapter 23 of the 2010 Oncology Nursing Society book, *A Guide to Oncology Symptom Management* (pp. 473–495), edited by Carlton G. Brown, PhD, RN, AOCN®.

A sufficient amount of quality sleep is essential for the health and well-being of every person. Insufficient or disrupted sleep can lead to a number of negative health, safety, cognitive, and psychosocial outcomes. Unfortunately, sleep problems and their daytime consequences, especially those related to insufficient sleep, commonly affect many healthy adults and children in today's 24/7 culture (Berger, 2006). A diagnosis of cancer, its associated symptoms, various treatments, and side effects add further disruptions to a patient's quantity and quality of sleep. Troubling cancer-related symptoms and difficult and time-consuming therapies, as well as the emotional distress caused by cancer, frequently keep patients from getting a good night's sleep and feeling rested upon awakening. Sleep difficulties also add to the distress caused by other symptoms and compromise daily functioning and quality of life (Davidson, MacLean, Brundage, & Schulze, 2002). Although sleep problems are common in people with cancer, these symptoms have only recently become the focus for evidence-based prevention and management strategies by oncology caregivers (Roscoe et al., 2007).

## Sleep-Wake Disturbances

### Pathogenesis

Potential etiologic factors for sleep-wake disturbances in patients with cancer are numerous because cancer is not a single disease, but rather many different disease processes that cause a variety of symptoms. In addition, various cancer

treatments, including surgery, chemotherapy, and radiation therapy, may increase a person's likelihood of having risk factors for sleeping problems. These factors have been organized by experts into demographic, lifestyle, psychological, disease-related, and treatment-related categories (Vena, Parker, Cunningham, Clark, & McMillan, 2004) (see Figure 23-3).

Demographic factors that increase the risk for problems sleeping include being older, female, and Caucasian (Savard & Morin, 2001). Lifestyle factors that increase risk include daytime napping patterns and excessive environmental stimulation. Sleep patterns are influenced by psychological health threatened by ongoing concerns and worries about the disease. Anxiety and depression are common and are believed to affect sleep in patients with cancer. Disease-related factors include the presence of other symptoms, such as pain and fatigue, changes in activity and rest patterns, and alterations in hormone and cytokine production. Treatments such as chemotherapy and hormonal therapy create estrogen deficiency and often result in premature menopause or aggravated menopausal symptoms, particularly hot flashes, that interfere with sleep (Carpenter, Johnson, Wagner, & Andrykowski, 2002; Savard et al., 2004). Cancer and cancer treatment

also influence circadian rhythms (Mormont & Levi, 1997). Blunted or erratic production of cortisol, melatonin, and other substances has been identified in patients with cancer and affects sleep (Payne, Piper, Rabinowitz, & Zimmerman, 2006; Spiegel, Leproult, & Van Cauter, 2003). Cancer and medical, surgical, and radiation treatments are known to increase the production of inflammatory cytokines, including interleukin-1, that may be related to daytime sleepiness and longer sleep times (Dunlop & Campbell, 2000; Payne et al., 2006). Increased knowledge about the relationships among sleep and neuroendocrine and metabolic patterns associated with various types of cancer and treatment is needed (Payne, 2004).

### Common Disorders

Common sleep disorders in adults include insomnia, sleep-related breathing disorders, sleep-related movement disorders, and parasomnias (American Academy of Sleep Medicine [AASM], 2005). The term *insomnia* refers to complaints of difficulty initiating or maintaining sleep or nonrestorative sleep that lasts for at least one month and causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (AASM, 2005). Primary insomnia, for which no other cause

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Digital Object Identifier: 10.1188/11.CJON.123-127