

# Sleep-Wake Disturbance

## A systematic review of evidence-based interventions for management in patients with cancer

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**BACKGROUND:** New or worsening sleep-wake disturbance (SWD) can occur throughout the cancer trajectory.

**OBJECTIVES:** The purpose of this article is to critically review available empirical evidence supporting the efficacy of interventions for SWD, highlighting new evidence since the 2006 and 2009 Putting Evidence Into Practice (PEP) SWD publications.

**METHODS:** A systematic review of studies published from 2009–2017 was conducted to identify effective interventions for cancer-related SWD. The PEP weight of evidence classification schema was used to categorize the strength of evidence.

**FINDINGS:** Cognitive behavioral intervention/approach is the only intervention that is recommended for practice. Mindfulness-based stress reduction and exercise interventions are likely to be effective but require more evidence. Pharmacologic interventions, relaxation, imagery, meditation, acupuncture, yoga, massage, and psychoeducation have insufficient evidence.

### KEYWORDS

evidence-based interventions; sleep-wake disturbance; Putting Evidence Into Practice

### DIGITAL OBJECT IDENTIFIER

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**CANCER-RELATED SLEEP DISTURBANCES, OR SLEEP-WAKE DISTURBANCE (SWD),** have a significant impact on quality of life (QOL) but receive little attention and inadequate assessment by primary care or oncology providers (Mercadante et al., 2015; Siefert, Hong, Valcarce, & Berry, 2014). Individuals may develop SWD before, during, or after cancer treatment (Palesh et al., 2010; Savard, Ivers, Villa, Caplette-Gingras, & Morin, 2011). Sleep disorders are linked to increased risk for cardiovascular disease, diabetes, and obesity (Grandner, Jackson, Pak, & Gehrman, 2012; Hargens, Kaleth, Edwards, & Butner, 2013; St-Onge et al., 2016). The literature provides strong links between sleep disorders and poor work performance (Hui & Grandner, 2015) and lower QOL in healthy and ill individuals (Mercadante et al., 2015). People with cancer require assessment and management of SWD and sleep disorders to prevent poor health outcomes.

This article builds on previously published Oncology Nursing Society (ONS) Putting Evidence Into Practice (PEP) SWD summaries (ONS PEP Project Teams, 2009; Page, Berger, & Johnson, 2006). The purpose is to critically appraise the strength and quality of evidence regarding the safety and efficacy of nonpharmacologic and pharmacologic interventions for SWD in adults with cancer. Recommendations represent the most current best evidence; however, clinical judgment is needed to determine appropriate individual interventions.

### Sleep-Wake Disturbance Overview and Definitions

Although defining sleep is challenging, experts agree that sleep is an active, biobehavioral process and state of temporary perceptual disengagement from and unresponsiveness to the environment (Carskadon & Dement, 2011). The key functions of sleep are to conserve energy, maintain homeostasis, and restore physiologic processes that degrade during wakefulness (Vassalli & Dijk, 2009). These functions are critical to physical and mental health, particularly in adults with cancer.

Sleep medicine is a specialty area focused on sleep disorders. Each diagnosis is identified by criteria in *The International Classification of Sleep Disorders: Diagnostic and Coding Manual (ICSD-3)* (3rd ed.) (American Academy of Sleep