



**Ontario Health**  
Cancer Care Ontario

# Symptom Management Algorithm

# **SLEEP PROBLEMS**

## **In Adults with Cancer**

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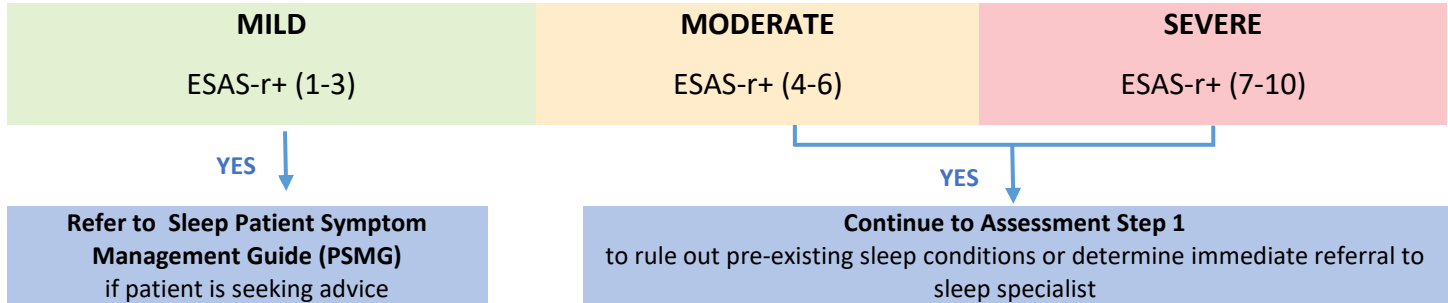
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## Screening

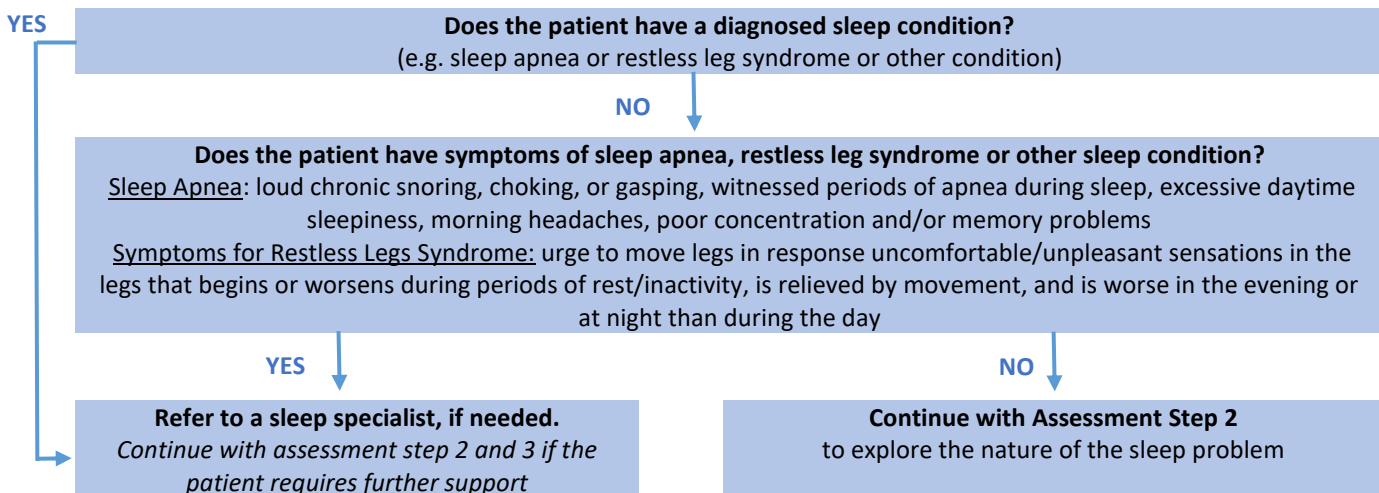
### Screen for sleep problems using a validated symptom screening tool (e.g., ESAS-r+)

Review symptom report(s) with the patient and/or their caregiver and validate patient's response. Address any other distressing symptoms that the patient identifies may be contributing to sleep problems (e.g. pain, anxiety).



## Assessment

### Step 1: Rule out any pre-existing sleep conditions or determine need for immediate referral to sleep specialist (consider using Epworth Sleepiness Scale<sup>1</sup> and STOP Bang Questionnaire<sup>2</sup>)



### Step 2: Explore the nature of the sleep problem using Acronym: OPQRSTUV<sup>3</sup>

Ask the patient directly, whenever possible. Involve family and caregivers as appropriate, and as desired by the patient

Category	Assessment Questions
<b>Onset</b>	<ul style="list-style-type: none"> <li>When did it start? How many nights is sleep disturbed? Number and duration of night waking? Early morning waking?</li> </ul>
<b>Provoking/Palliating</b>	<ul style="list-style-type: none"> <li>Pre-sleep activities (before bed and in bed); bedroom environment; precipitating factors (stress, pain); sleep/wake schedule and regularity of following this? Medications used for sleep (which can aggravate sleep problems)</li> </ul>
<b>Quality</b>	<ul style="list-style-type: none"> <li>Assess sleep quality. Non-restorative sleep. Consider daily sleeping log over two-week period (i.e. consensus sleep diary)</li> </ul>
<b>Related Symptoms</b>	<ul style="list-style-type: none"> <li>In what ways does it affect you day to day (i.e. daily tasks, daytime somnolence, attention and memory impairment, slow response time, adverse effect on work social life and family)</li> </ul>
<b>Severity</b>	<ul style="list-style-type: none"> <li>How bothered or distressed are you by your sleep problem?</li> </ul>
<b>Treatment</b>	<ul style="list-style-type: none"> <li>What do you do to manage your sleep problem? How effective are your efforts? Assess use of sleep hygiene strategies.</li> </ul>

Category	Assessment Questions
Understanding	<ul style="list-style-type: none"> <li>What do you believe is causing your sleep problems? What concerns you most about sleep problems? What is the effect on daily functioning and other aspects of your life?</li> </ul>
Values	<ul style="list-style-type: none"> <li>What is your goal for this symptom? What is your comfort goal or acceptable level of severity for this symptom (able to work, attend leisure activities etc.)?</li> </ul>
Pertinent health history: Specific Risk Factors for Sleep-Wake Disturbances	<ul style="list-style-type: none"> <li>History of sleep-related problems, depression, other pre-existing mental health problems</li> <li>Stressors (e.g., life events; disease status: diagnosis, recurrence, advanced or progressive disease [i.e., vulnerable points])</li> <li>Current or recent change in medications associated with depression (can cause insomnia) or sedating medications</li> <li>Cancer treatment modalities (e.g., hormonal therapy, treatment with chemotherapy, other agents such as steroids that can impact sleep)</li> <li>Assess for specific contributing factors to be treated based on other guidelines (e.g., pain, fatigue, depression, anxiety). Sleep problems often occur as a symptom cluster of fatigue, depression, pain.</li> </ul>

Continue with Step 3 to determine the severity of the sleep problem.

### Step 3: Assess for the Severity of Sleep Problem (consider using PROMIS<sup>4</sup> short form sleep or insomnia severity index<sup>5</sup> and DSM-5<sup>6</sup>)

Ask the following questions to determine the severity of the sleep problem:

1. Do you have difficulties initiating sleep?
2. Do you have problems maintaining sleep (frequent awakening)?
3. Do you have problems with early morning waking with inability to return to sleep?

Did the patient answer yes to at least one of the above questions?

YES

NO

Are these sleep problems occurring 3 days or more and for how long?

Refer to Symptom Management Guides

- Anxiety
- Depression
- Fatigue

Occasional symptoms

Symptoms <3 times/week

Symptoms ≥3 times/week for >3 months

#### MILD SLEEP PROBLEMS

- Occasional sleep disruption that does not impair daily functioning
- Ability to carry out Activities of Daily Living (ADLs) = usual or desirable functioning (e.g., daily tasks, work, social life, other)

#### TRANSIENT ACUTE INSOMNIA

- Sleep disturbance occurs <3 times/week
- Difficulty falling asleep at night or getting back to sleep after waking (takes >30 minutes to fall asleep, stay awake for >30 minutes)
- Waking up frequently at night
- Sleep feels light, fragmented, unrefreshing (poor sleep quality)
- Sleepiness and low energy throughout the day

#### INSOMNIA DISORDER

- Symptoms of insomnia ≥3 nights a week for at least 3 months
- Impairment of daily activities
- Impairment of psychological function
- Negative expectations regarding sleep
- Hyper-arousal such as hyper-vigilance or racing thoughts about sleep at bedtime
- Learned sleep-preventing associations

## Intervention

### Education, Effective Sleep Practices, and Interventions for All Patients

MILD SLEEP PROBLEMS

TRANSIENT ACUTE INSOMNIA

INSOMNIA DISORDER

#### Education on Healthy Sleep Practices

- Normalize for the patient that sleep problems are common and the symptoms they may experience
- Increase patient's awareness of difference between normal and cancer-related sleep-wake disturbance, its persistence post-treatment and the need to optimize sleep quality during and post-treatment (e.g. realistic sleep expectations (sleep needs range: 6-10 hours; sleep quality becomes lighter with age but not need).
- It is normal to awaken 1-2 times; it is not normal to remain awake. Most people feel sleepy in the afternoon.
- Educate patient about self-monitoring (e.g. using a daily diary) to track sleep patterns (early waking, time to get to sleep, number of times waking in night) to report to appropriate health care provider

#### Coach Patient on Use of Sleep Hygiene Strategies<sup>3,5</sup>

##### Wake up

- **Wake at the same time each day** (regardless of how many hours of sleep and including weekends). Morning anchor determines bedtime based on sleep pressure. Be sure to get out of bed within 10-15 minutes of waking.
- **Ensure morning light exposure** (natural or artificial): At least 30 minutes within 1 hour of waking.

##### Napping:

- While multiple naps throughout the day should be avoided, a short nap (limiting naps to 20 minutes, no longer than 30 minutes) taken in the afternoon, starting before 4pm, is unlikely to interfere with nighttime sleep.
- **It is possible to rest without necessarily sleeping.**

##### Before Bedtime

- **Designate a "clear-your-head time"** (30-45 minutes) devoted to problem solving, planning, worrying in the early evening. Remind yourself that you have already devoted time to topic if it re-appears.
- **Establish a 90-minute buffer zone before intended bedtime.** Spend this time in dim light, while engaged in individualized sedentary, pleasant, and relaxing activities (e.g., reading, meditation, prayer, crosswords, warm bath, magazines, audiobooks, music, relaxation/imagery or anything that does not produce cognitive or physiological arousal).
- **Do not use screens** (TV, phone, tablet etc.) at least 30 minutes before bed, blue light emitted by devices can affect sleep.

##### Bedtime

- **Only go to bed when sleepy** (regardless of what the clock says) and do not spend extra time trying to sleep.
- Try not to confuse tired/fatigued or bored with being sleepy.
- Spending extra time awake in bed DOES NOT increase chances of falling asleep and adds to anxiety, frustration, and conditioned arousal. If not asleep within 20-30 minutes, get up and return to bed when sleepy. Consider spending this time engaged in individualized sedentary, pleasant, and relaxing activities.
- **Avoid unnecessary time in bed during day.** For patients confined to bed, provide cognitive stimulation throughout the day.
- During recovery, the bed is often used for activities other than sleep; this weakens its power as a cue for sleep. **Make other areas of the house as comfortable; minimize noise/disruption during night** (use ear plugs/eye masks).

## Non-Pharmacological Interventions

1. **Movement and Physical Activity** can be effective in improving sleep and building sleep drive; consider limitations due to pain, mobility and medical conditions.
2. **Yoga**<sup>7</sup> may help with fatigue or other sleeping problems and can help to relieve anxiety and depression. It is best to practice yoga with a certified yoga teacher to reduce the risk of injury. For patients with bone metastases, gentle yoga is recommended.
3. **Relaxation and Mindfulness Practices** (e.g. diaphragmatic breathing; progressive muscle relaxation; guided imagery)
4. **Consider referral to a social worker** for management of comorbid psychological distress.

## Choosing Wisely Canada’s Recommendation on Pharmacological Treatments

Choosing Wisely Canada<sup>8</sup> recommends the use non-pharmacological treatments as the first-line of treatment. Only consider the use of sedative-hypnotic drugs if sleep problems are affecting quality of life and non-pharmacological treatments have not helped or short term. Special monitoring is required for cancer patients on pharmacological agents and for adverse effects in combination with cancer treatment and other medications.

## Interventions for Transient Acute Insomnia & Insomnia Disorder

### TRANSIENT ACUTE INSOMNIA



### INSOMNIA DISORDER



1. **Cognitive Behavioral Therapy (CBT)** specific for insomnia (CBT-I) is the most effective intervention to improve sleep problems based on trials in the general population and cancer patients. Please see online CBT courses and Applications in the Resources section of this algorithm.
2. **Consider referral to sleep specialist** (e.g social worker, psychology, psychiatry, sleep disorder clinic/medical specialist)

## Resources

**Ontario Health (Cancer Care Ontario) – Patient Symptom Management Guides** ([Link](#))

Sleep, Fatigue, Anxiety and Depression

### Online CBT Courses and Applications

CBT-I Coach ([Link](#))

Sleepio ([Link](#))

ShutEye ([Link](#))

## Acknowledgements

Sleep Problems in Adults with Cancer Clinician Symptom Management Algorithm 2022 - Working Group Members: Dr. Natalie Coburn, Debora Stark, Dr. Doris Howell, and Dr. Tyler Tulloch

This algorithm was adapted from the Canadian Association of Psychosocial Oncology (CAPO) and Canadian Partnerships Against Cancer’s guideline entitled, “A Pan-Canadian Practice Guideline: Prevention, Screening, Assessment and Treatment of Sleep Disturbances in Adults with Cancer”.

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