Insomnia occurs frequently in HIV-infected patients and during all stages of HIV disease. Although insomnia is not unique to the HIV-infected population, insomnia screening should be part of routine HIV care due to the potentially negative effects of insomnia on health, including HIV disease progression.

What Is Insomnia?
- Difficulty falling asleep
- Frequent awakenings during sleep
- Early morning awakening, or
- Non-restorative sleep despite adequate sleep duration

Possible Causes of Insomnia
- Major life events, such as the death of a loved one
- Changes in sleeping environment (e.g., when in the hospital)
- Physical and mental health disorders
- Prescription or OTC medication use
- Use or relapse of use of alcohol or other substances

Possible Consequences of Insomnia
- Fatigue, irritability, elevated blood pressure, excessive daytime sleepiness
- Non-adherence to ART
- Increase in pain symptoms and worsening of physical health conditions
- Relapse of psychiatric symptoms (e.g., anxiety, depression, mania)

RECOMMENDATIONS:
When an HIV-infected patient reports insomnia, primary care clinicians should:
- Assess the patient’s sleep patterns, as well as perform a differential diagnosis, to clarify the nature of the patient’s insomnia
- Exclude and manage causes of secondary insomnia
- When possible, refer the patient at least once for evaluation by a psychiatrist or clinical psychologist
- Discuss sleep hygiene with the patient and consider nonpharmacologic approaches for treating insomnia before prescribing medications

SLEEP ASSESSMENT EVALUATION CHECKLIST FOR CLINICIANS

Assessment of Sleep Patterns
Suggest the patient keep a sleep log, which could include:
- Events prior to bedtime, including emotional stressors and the consumption of alcohol or caffeine-containing beverages
- Bedtime
- Time spent awake in bed before falling asleep
- Number, time, and length of awakenings
- Final time of morning awakening
- Time spent awake in bed before arising
- Frequency and duration of naps during the day
- Patient or bed partner observations of snoring, interrupted breathing, abnormal leg movements

Differential Diagnosis: Substance Use Etiologies
- Caffeine
- Nicotine
- Alcohol
- Illicit drug use, particularly stimulant drugs

* While alcohol may help induce sleep, its use is associated with sleep disruptions.

Differential Diagnosis: Medical Conditions
- Pain
- Respiratory: dyspnea and sleep apnea
- Gastrointestinal: gastroesophageal reflux
- Endocrinologic: hyperthyroidism, menopause
- Neurologic: cognitive impairment, neuropathy, periodic limb movements in sleep or restless leg syndrome
- Cardiopulmonary: lung disease, congestive heart failure
- Nephrologic/urologic: chronic kidney disease, frequent urination and incontinence

Differential Diagnosis: Medications
- ART medications (e.g., efavirenz, lamivudine)
- ß-Blockers
- Bronchodilators
- Calcium channel blockers
- Corticosteroids
- Decongestants
- Immunomodulators (e.g., interferons, interleukin-2)
- Trimethoprim-sulfa
- Dapsone
- Amphotericin
- Fluconazole
- Isoniazid
- Diuretics taken at bedtime

FOR MORE INFORMATION, PLEASE VISIT WWW.HIVGUIDELINES.ORG
**SLEEP HYGIENE STRATEGIES**

*These strategies are based on expert opinion. For more information, refer to the Mental Health Guidelines: Insomnia in HIV-infected Patients at www.hivguidelines.org.

**DO**
- Take warm baths before bed
- Exercise for at least 30 min/ day most days of the week
- Maintain a bedtime routine (e.g., going to bed and waking up at a set time)
- Make bedroom cool, dark, and quiet
- Place the clock out of sight
- If unable to fall asleep after 4 minutes, leave bed and do something relaxing (e.g., reading), return to bed later

**DON’T**
- Don’t consume caffeine (coffee, tea, chocolate, soda), alcohol, or nicotine before bedtime
- Don’t eat a large meal just before bedtime
- Don’t nap during the day
- Don’t exercise within 2 hours of bedtime
- Don’t work, eat, read, or watch television in bed

**COGNITIVE BEHAVIORAL STRATEGIES**

- Referral to a sleep specialist to assist patients with cognitive-behavioral techniques may benefit some individuals with insomnia. Techniques include: cognitive therapy, relaxation training, sleep restriction, and phototherapy.

**PHARMACOLOGIC APPROACH TO INSOMNIA**

- Assess for patient use of OTC agents for insomnia and offer to prescribe an FDA-approved agent as a better option (e.g., offer ramelteon instead of OTC melatonin)
- Avoid prescribing medications for sleep disturbance that have narrow therapeutic ranges and potential for abuse (e.g., barbiturates, choral hydrate, and meprobamate)
- Limit to 1 week the use of antihistamines for promoting sleep in order to avoid worsening of symptoms due to long-term use
- Advise patients of the potential side effects of melatonin-agonist therapy, including OTC preparations, particularly severe hypersensitivity reactions
- Do not prescribe tricyclic antidepressants to patients with cardiac conduction problems; although some clinicians prescribe these agents for insomnia, most are not FDA-approved for this purpose

**Checklist of questions when selecting a pharmacologic agent for insomnia:**

- Will this agent improve symptoms that may be contributing to the patient’s insomnia (e.g., depression, anxiety, neuropathic pain, etc.)?
- Will this agent pose risks to the patient based on comorbid medical conditions?
- Will this agent pose risks based on interactions with other medications, (e.g., zolpidem, zaleplon, and eszopiclone should be used with caution in patients taking protease inhibitors)?
- Is this the optimal agent for a patient with a current or past history of alcohol or sedative abuse/dependence?
- Can the patient afford the prescribed medication?

**Agents With an FDA-Approved Indication for Insomnia**

- **Antihistamines**
  - Diphenhydramine
  - Doxylamine
  - Hydroxyzine

- **Non-benzodiazepine hypnotics:**
  - Zolpidem
  - Zolpidem-CR
  - Zaleplon
  - Eszopiclone

- **Melatonin Agonist**
  - Ramelteon

- **Antidepressants**
  - Trazodone
  - Doxepin

- **Benzodiazepine hypnotics**
  - Flurazepam
  - Quazepam
  - Estazolam
  - Triazolam
  - Temazepam
  - Lorazepam

**References**

The cause of the patient’s insomnia cannot be determined, the clinician’s initial treatment of the underlying etiology does not resolve symptoms, and/or sleep apnea or a movement disorder is suspected.

Refer patient to a psychiatrist (mental health disorder) and/or a sleep medicine specialist (for sleep apnea or movement disorder) for assessment and treatment.

**Patient accepts mental health/sleep medicine specialist referral?**

- **YES**
  - Coordinate with mental health/sleep medicine professional and continue monitoring

- **NO**
  - Counsel regarding sleep hygiene strategies
  - Use sleep agents with caution (prescribable on a case-by-case basis)
  - Revisit whether patient will accept a referral for further evaluation

**For additional information regarding somatic symptoms, mental health disorders, and alcohol and substance use in HIV-infected patients, refer to www.hivguidelines.org.**