

## TREATING SLEEP PROBLEMS OF PEOPLE IN RECOVERY FROM SUBSTANCE USE DISORDERS

Sleep problems are a common complaint among people with substance use disorders (SUDs). They can occur during withdrawal, but they can also last months and years into recovery<sup>1</sup> and can be associated with relapse to substance use.<sup>2</sup> This *In Brief* alerts healthcare providers to the relationship between sleep disturbances and SUDs and provides guidance on how to assess for and treat sleep problems in patients in recovery.

### Sleep Disturbances and Substance Use

Many Americans suffer from unhealthy sleep-related behaviors. The prevalence of insomnia symptoms (difficulty initiating or maintaining sleep) in the general population is estimated at 33 percent, with an estimated 6 percent having a diagnosis of insomnia.<sup>3</sup> According to a 12-state survey conducted by the Centers for Disease Control and Prevention:<sup>4</sup>

- 35.3 percent of survey respondents obtain less than 7 hours of sleep on average during a 24-hour period.
- 48.0 percent snore.
- 37.9 percent unintentionally fall asleep during the day.

Substance/medication-induced sleep disorder is recognized in the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition.<sup>5</sup> Substance use can exacerbate sleep difficulties, which in turn present a risk factor for substance use or relapse to use.<sup>6</sup> The types of sleep problems vary by substance used and can include insomnia, sleep latency (the time it takes to fall asleep), disturbances in sleep cycles and sleep continuity, or hypersomnia (excessive daytime sleepiness).<sup>5</sup> Specific findings on the relationship between sleep disturbances and substance use are presented below.

### Alcohol Abuse

Insomnia and other sleep disturbances are common symptoms of alcohol dependence.<sup>1,7</sup> Many people with alcohol use disorder (AUD) have insomnia before entering treatment.<sup>7</sup> Reported rates of sleep problems among people with AUD in treatment range from 25 to 72 percent.<sup>8</sup> Some people in recovery from AUD may continue to have sleep problems, including insomnia or sleep-disordered breathing (such as sleep apnea), for weeks, months, or sometimes years after initiating abstinence.<sup>9,10,11</sup>

### Illicit Drug Use

Sleep disturbances are common among people abstaining from chronic substance use. People stopping marijuana use can experience sleep problems in the first days of withdrawal,<sup>12</sup> and these problems can last for weeks.<sup>13,14</sup> People in detoxification from opioids often report symptoms of insomnia.<sup>15,16</sup> A study that objectively measured sleep in people who chronically use cocaine found that sleep quality deteriorated during a period of abstinence, even though the subjects perceived their sleep to be improving.<sup>17</sup> Another study of people in withdrawal from cocaine found that three-quarters experienced poor sleep quality.<sup>18</sup> In a study of college students, those who reported a history of nonmedical psychostimulant use or current use reported worse subjective and overall sleep quality and more sleep disturbance compared with those who had not used such substances.<sup>19</sup>

### The Effects of Sleep Loss During Recovery

Sleep loss can have significant negative effects on the physical, mental, and emotional well-being of people in recovery. It can also interfere with substance abuse

treatment. Persistent sleep complaints after withdrawal are associated with relapse to alcohol use.<sup>20,21</sup> Poor sleep quality before a quit attempt from cannabis use is a risk factor for lapsing back into use within 2 days.<sup>22</sup>

## Medication-Assisted Treatment and Sleep Disorders

Disrupted sleep, including central sleep apnea and related daytime sleepiness, is prevalent in people on methadone maintenance therapy for opioid dependence.<sup>23,24</sup> Methadone dose and duration of opioid use prior to treatment correlate linearly with sleep problems.<sup>23</sup> The prevalence of sleep problems is attributable to the methadone, which is a full  $\mu$ -opioid agonist, and to concurrent factors that often affect patients in recovery from opioid addiction, such as mental disorders, benzodiazepine abuse, and chronic pain. Buprenorphine, a partial  $\mu$ -opioid agonist, at routine therapeutic doses has also been found to induce significant alterations of breathing during sleep.<sup>25</sup>

## Assessing Sleep Disorders

If a patient initiating withdrawal from a substance or recovering from an SUD complains of a sleep disturbance, the healthcare provider should assess for causes by doing the following:<sup>26</sup>

- Determine the duration of recovery and medications used for SUD treatment.
- Ask questions about difficulty falling asleep, waking during the night, amount of sleep per night, snoring, sleep apnea, excessive movements during sleep, uncontrollable movements that are relieved by getting up and walking, and excessive daytime sleepiness. If possible, ask significant others the same questions about the patient.

- Rule out other causes of the sleep problem, such as stress, a life crisis, or side effects of medications the patient is taking.
- Ask the patient to write in a sleep diary or log immediately on awakening. The patient should record total time in bed, time of sleep onset, number of times awakened, and total time spent awake.
- Determine the frequency and duration of symptoms of insomnia. If difficulties occur two or three nights per week and last for 1 month or more, the patient warrants a diagnosis of insomnia.

Note that some patients tend to overestimate the quality and duration of their sleep on self-report questionnaires and in sleep logs.<sup>27,28</sup> If warranted, a referral for an objective sleep study in a sleep laboratory can be made.

## Treatments

The association between insomnia and relapse calls for treatment that addresses insomnia during recovery. The first step in treating insomnia should focus on the status of the patient's recovery. Patients should be receiving treatment from an appropriate substance abuse treatment program. It is important to address other psychological, social, and medical problems that may contribute to insomnia, such as co-occurring mental and medical disorders, use of medications that disturb sleep, and nicotine use.<sup>29,30</sup>

## Nonpharmacological Treatments

Nonpharmacological treatments are preferred because many pharmacological treatments for insomnia have the potential for abuse and can interfere with SUD recovery. Research on cognitive-behavioral therapy (CBT) to treat insomnia has shown positive results, generally<sup>26,31,32</sup> and

## What Healthcare Providers Can Do

- Screen for insomnia among people in recovery from SUDs.
- Include questions about sleep during the routine patient history.
- Rule out other causes of sleep problems (e.g., stress, medications).
- Educate patients about sleep hygiene, and make referrals to a specialist if necessary.
- Conduct a careful evaluation, and consider risk factors, before prescribing sedative-hypnotic medications to treat insomnia.
- Monitor patients for signs of abuse or diversion of scheduled medications prescribed to treat insomnia and other sleep disorders.

### Exhibit 1. Nonpharmacological Treatments

- **Mindfulness meditation.** The patient moves into a state of restful, present-moment alertness, which reduces stress and improves self-control.<sup>33,34</sup>
- **Progressive muscle relaxation.** The patient concentrates on tensing and relaxing groups of muscles.<sup>8,35</sup>
- **Biofeedback.** The patient becomes aware of physiologic stress responses and how to control them.<sup>26</sup>
- **CBT for insomnia.** The patient's dysfunctional beliefs and behaviors are modified to improve his or her emotional state.<sup>26,36</sup>
- **Stimulus control.** The patient reassociates the bedroom with the rapid onset of sleep.<sup>37</sup>
- **Exercise.** Regular physical activity relieves stress and tires the patient.<sup>26</sup>
- **Sleep restriction therapy.** The patient limits sleep to a few hours and progressively increases it until the desired amount of sleep time is achieved.<sup>26</sup>
- **Bright-light therapy.** Exposure to a natural bright light while awake helps promote normal sleep patterns.<sup>38</sup>
- **Dental devices and continuous positive airway pressure machines.** These devices help the patient with obstructive sleep apnea breathe more easily during sleep.<sup>39</sup>

also in patients who are alcohol dependent.<sup>40</sup> Exhibit 1 lists several nonpharmacological interventions that have shown some degree of effectiveness. Combining approaches may be more effective than using one approach.<sup>38</sup>

Healthcare providers can educate patients about simple nonpharmacological techniques that can improve sleep<sup>41</sup> (see Exhibit 2). Sleep education includes teaching about sleep, the effects of recovery from substance use on sleep, and health practices and environmental factors that affect sleep.<sup>38</sup> Sleep can be improved by limiting bedroom activities to sleeping (e.g., refraining from activities such as reading the newspaper, paying bills, or working on electronic devices) and going to bed only when sleepy and at about the same time each day. These activities help reassociate the bed and bedroom with going to sleep.<sup>37</sup> Establishing a relaxing presleep routine, which can include progressive muscle relaxation,<sup>35</sup> imagery,<sup>42</sup> or a warm

bath,<sup>41</sup> also promotes sleep. Some patients may benefit from referral to a sleep medicine specialist.

### Pharmacological Treatments

#### Over-the-counter medications and dietary supplements

Some people who have trouble sleeping have tried over-the-counter sleep medications or dietary supplements to help them sleep. Patients may ask about these, and care should be taken to explain their safety and efficacy. Many over-the-counter sleep medications contain antihistamines that cause sedation.<sup>38</sup> They are not recommended as a long-term treatment for insomnia because they negatively affect the natural sleep cycle and have side effects such as morning grogginess, daytime sleepiness, and impaired alertness and judgment.<sup>43,44</sup> Furthermore, evidence supporting their long-term effectiveness is insufficient.<sup>43</sup>

Popular dietary supplements taken with the intent to promote sleep include valerian and melatonin. Valerian, an herb, is thought to have sedative effects.<sup>45,46</sup> However, studies of valerian offer mixed results,<sup>47,48</sup> and evidence supporting the supplement's efficacy is insufficient to warrant its use.<sup>49,50</sup> In addition, valerian could damage the liver.<sup>47</sup> Melatonin is a brain hormone that helps regulate sleep patterns.<sup>51</sup> Limited evidence shows that it can treat chronic insomnia in some people and, to date, there is no evidence that it is harmful.<sup>52</sup>

#### Prescription medications without known abuse potential

Medications without known abuse potential should be the first treatment option when pharmacotherapy is necessary to treat insomnia during recovery. Ramelteon and doxepin are the only unscheduled prescription medications approved by the U.S. Food and Drug Administration (FDA) for the treatment of insomnia. Ramelteon decreases the amount of time it takes to fall asleep.<sup>53,54</sup> Doxepin, originally FDA approved as an antidepressant, has been approved for treating insomnia typified by problems staying asleep. These medications may be suitable for treating insomnia in patients in recovery, because they do not appear to have potential for abuse.<sup>55,56,57</sup>

## Exhibit 2. Promoting Sleep Hygiene: Tips for a Good Night's Sleep<sup>58,59</sup>

- Go to bed and get up at the same times each day.
- Use natural light (that comes through a window) to remind yourself of when it's time to be asleep and awake. This can help you set a healthy sleep–wake cycle.
- Exercise regularly.
- If you take naps, keep them short and before 5 p.m.
- Don't eat or drink too much when it is close to bedtime.
- Avoid caffeine (in coffee, tea, chocolate, cola, and some pain relievers) and nicotine for several hours before bedtime.
- Wind down before going to bed (e.g., take a warm bath, do light reading, practice relaxation exercises).
- Keep the bedroom a relaxing place—avoid working or paying bills in bed.
- Sleep in a dark, quiet room that isn't too hot or too cold.
- Don't lie in bed awake. If you can't fall asleep within 20 minutes, get up and do something relaxing.

### Off-label medications

Other medications are often prescribed off label (for purposes other than the medication's FDA-approved use) to treat insomnia. According to a survey of addiction medicine physicians, the sedating antidepressant trazodone is the medication most often prescribed for the management of sleep disorders in patients in early recovery from AUD.<sup>60</sup> One study found that its use among people in recovery from AUD improved sleep efficiency.<sup>61</sup> Studies of its effects on abstinence and relapse in persons with AUD are conflicting. A 2008 study comparing trazodone with placebo for people after detoxification from alcohol showed that the trazodone group had improved sleep quality but had less improvement in the proportion of days abstinent while taking the medication. Furthermore, when the medication was discontinued, the trazodone group experienced less improvement in abstinence days and an increase in the number of drinks per drinking day.<sup>62</sup> In contrast, a study published in 2011 of patients discharged from residential treatment did not find an association between trazodone use and relapse or return to heavy drinking.<sup>63</sup> A study of patients on methadone maintenance treatment found that trazodone use provided no improvement in sleep.<sup>64</sup>

Other sedating antidepressants that have been used to treat insomnia include amitriptyline, mirtazapine, nefazodone, and nortriptyline.<sup>65</sup> In a study of the use of mirtazapine on subjects with cocaine dependence and co-occurring

depression, the medication decreased sleep latency; however, it had no measurable effect on treatment for cocaine dependence and depressive symptoms.<sup>66</sup>

Gabapentin, an anticonvulsant with sedative properties, also has evidence of efficacy for treating insomnia.<sup>50,67</sup> It has been found to be more effective in promoting sleep than lorazepam (an anxiolytic commonly prescribed to treat insomnia) among people withdrawing from alcohol.<sup>67</sup> It has also been found to be more effective than trazodone in promoting sleep among those in early recovery.<sup>68</sup> Acamprosate, a medication used to maintain alcohol abstinence, may also improve sleep during withdrawal from alcohol.<sup>21,69</sup>

### Prescription medications with known abuse potential

Sedative–hypnotic medications, such as benzodiazepines and nonbenzodiazepines, are commonly prescribed to treat sleep problems. However, these medications should be avoided by people with histories of SUDs, who are at increased risk for abusing them.<sup>44,70</sup> Benzodiazepines, such as alprazolam, diazepam, and triazolam, are especially risky for use with people with SUDs because they are potentially addicting. They can also cause residual daytime sedation, cognitive impairment, motor incoordination, and rebound insomnia.<sup>50</sup> Long-term treatment of insomnia with benzodiazepines may lead to withdrawal symptoms (e.g., anxiety, irritability, seizures) when patients stop taking



the medications. A careful clinical evaluation is needed to ensure appropriate prescribing. Measures to prevent abuse include the following:<sup>71</sup>

- Observe closely and perform ongoing evaluations.
- Prescribe a few tablets at a time.
- Schedule frequent office visits.
- Conduct occasional urine screenings.
- Use one source to dispense the medication.
- Occasionally taper the medication.
- Be attentive to risk factors such as antisocial personality disorder and dependence on multiple substances.

Alternatives to benzodiazepines include sedative–hypnotic medications such as zaleplon, eszopiclone, and zolpidem. These medications all have the same mechanism of action as benzodiazepines but lack some of the negative side effects. However, some research indicates that at high doses they may have the same side effects as benzodiazepines.<sup>72</sup> The three medications are Schedule IV controlled substances, indicating abuse potential. For these reasons, these medications should be used only for short-term treatment of insomnia in people with a history of SUDs.

## Web Resources

### American Academy of Sleep Medicine

<http://www.aasmnet.org>

### National Center on Sleep Disorders Research

<http://www.nhlbi.nih.gov/about/org/ncsdr>

### National Sleep Foundation

<http://www.sleepfoundation.org>

## Notes

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