01 - Chapter 15 Sleep Wake Disorders

Chapter 15 Sleep-Wake Disorders

162 SLEEP-WAKE DISORDERS Normal Sleep-Wake Cycle KEY FACT As one ages there are the following changes that occur in the sleep pattern: • Increase in time it takes to fall asleep, known as sleep latency • Decline in total amount of REM sleep achieved • Increase in sleep fragmentation with more frequent nighttime awakening Sleep Disorders ■ Classified as either: ■ When taking a sleep history, ask about: Awake Movement REM Stage 1 Stage 2 Stage 3 Stage 4 Sleep disorders affect as many as 40% of the U.S. adult population. Current data demonstrate a high rate of comorbidity between sleep disorders and various psychiatric illnesses. Disturbances in sleep can potentiate and/or exacerbate psychological distress and other mental illnesses. ■ Normal sleep-

wake cycle is defined in terms of characteristic changes in several physiological parameters, including brain wave activity, eye movements, and motor activity. ■ The two stages of normal sleep are rapid eye movement (REM) sleep and non-rapid eye movement (NREM) sleep. ■ About every 90 minutes, NREM sleep alternates with REM sleep. ■ NREM induces transition from the waking state to deep sleep. ■ Progression through NREM sleep results in slower brain wave patterns and higher arousal thresholds. ■ In REM sleep, brain wave patterns resemble the electroencephalogram (EEG) of an aroused person. ■ Awakening from REM sleep is associated with vivid dream recall. See Figure 15-1. • Dyssomnias: Insufficient, excessive, or altered timing of sleep. • Parasomnias: Unusual sleep-related behaviors. • Activities prior to bedtime that may interfere with restful sleep. • Bed partner history. • Consequence on waking function; quality of life. • Drug regimen, medications. • Exacerbating or relieving factors. • Frequency and duration. • Genetic factors or family history. • Habits (alcohol consumption, use of caffeine, nicotine, illicit substances, and hypnotics). FIGURE 15-1. The sleep cycle. © 2008 LLS. Adapted, with permission of the publisher, Les Laboratoires Servier, from Figure 1 in Nutt D, Wilson S, Paterson L. Sleep disorders as core symptoms of depression. Dialogues Clin Neurosci. 2008;10(3):329–336.

Dyssomnias Dyssomnias are disorders that make it difficult to fall or remain asleep (insomnias), or cause excessive daytime sleeping (hypersomnias). INSOMNIA DISORDER ■ Refers to a number of symptoms that interfere with duration and/or quality of sleep despite adequate opportunity for sleep. Symptoms may include: • Difficulty initiating sleep (initial or sleep-onset insomnia). • Difficulty maintaining sleep (middle or sleep-maintenance insomnia). • Early morning awakenings (late or sleep-offset insomnia). • Waking up feeling fatigued and unrefreshed (nonrestorative sleep). ■ Acute insomnia (less than 3 months) is generally associated with stress or changes in sleep schedule and usually resolves spontaneously. ■ Chronic insomnia lasts greater than or equal to 3 months to years and is associated with reduced quality of life and increased risk of psychiatric illness. ■ Diagnosis is often assisted by use of subjective sleep tracking measures such as the Consensus Sleep Diary. DSM-5 Criteria ■ Difficulty initiating/maintaining sleep or early-morning awakening with inability to return to sleep. ■ Occurs at least 3 days a week for at least 3 months. ■ Causes clinically significant distress or impairment in functioning. ■ Occurs despite adequate opportunity to sleep. ■ Does not occur exclusively during the course of another sleep-wake disorder. ■ Not due to the physiologic effects of a substance or medication. ■ Coexisting mental and medical disorders do not adequately explain the insomnia. Epidemiology Prevalence: 6–10% (the most prevalent of all sleep-wake disorders). Etiology ■ Subclinical mood and/or anxiety disorders. ■ Preoccupation with a perceived inability to sleep. ■ Bedtime behavior not conducive to adequate sleep (poor sleep hygiene). ■ Idiopathic. Treatment ■ Sleep hygiene measures. ■ Cognitive-behavioral therapy (CBT) is the first-line treatment. ■ Chronotherapy (bright light therapy) has evidence supporting its use in treating insomnia by entraining the circadian rhythm. ■ Pharmacotherapy: • Benzodiazepines:

- Reduce sleep latency and nocturnal awakening.
- As effective as CBT during short periods of treatment (4–8 weeks); insufficient evidence to support long-term efficacy. SLEEP-WAKE DISORDERS WARDS TIP REM sleep is characterized by increase in blood pressure, heart rate, and respiratory rate. WARDS QUESTION Q: What is the first-line therapy for chronic insomnia? A: Cognitive-behavioral therapy; hypnotic medications are reserved for those who do not improve with CBT. KEY FACT Insomnia is the most common reason patients are put on long-term

benzodiazepines.

164 SLEEP-WAKE DISORDERS WARDS QUESTION Q: What is the most common antidepressant prescribed for chronic insomnia? A: Trazodone. HYPERSOMNOLENCE DISORDER KEY FACT DSM-5 Criteria Breathing-related disorders are the most common of the hypersomnias and include obstructive sleep apnea and central sleep apnea. Epidemiology ■ Equal frequency in men and women. Etiology ■ Head trauma.

- Side effects include development of tolerance, addiction, daytime sleepiness, and rebound insomnia.
- In the elderly, falls, confusion, and dizziness are of particular concern. • Non-benzodiazepines:
- Include melatonin, zolpidem (Ambien), eszopiclone (Lunesta), zaleplon (Sonata), and suvorexant (Belsomra).
- Effective for short-term treatment.
- Associated with low incidence of daytime sleepiness and orthostatic hypotension.
- In the elderly, zolpidem causes increased risk of falls and may induce cognitive impairment.
- Doses of zolpidem more than 10 mg can cause increase in cognitive impairment in women. • Antidepressants:
- Trazodone, amitriptyline, and doxepin (off-label use).
- Mirtazapine (in low doses) is often used to promote sleep in patients with coexisting depressive disorders.
- Side effects include sedation, dizziness, and psychomotor impairment. ■ Refers to symptoms of excessive quantity of sleep, reduced quality of wakefulness, and sleep inertia/sleep drunkenness (i.e., impaired performance and reduced alertness after awakening). ■ Complain of nonrestorative sleep, automatic behaviors (routine behavior performed with little to no recall), and difficulty awakening in the morning. ■ Excessive sleepiness despite at least 7 hours of sleep, with at least one of the following: recurrent periods of sleep within the same day; prolonged, nonrestorative sleep more than 9 hours; difficulty being fully awake after awakening. ■ Occurs at least three times per week for at least 3 months. ■ Causes clinically significant distress or impairment in functioning. ■ Does not occur exclusively during the course of another sleep-wake disorder. ■ Not due to the physiologic effects of a substance or medication. ■ Coexisting mental and medical disorders do not adequately explain the hypersomnolence. ■ Prevalence: 5–10% of individuals presenting to sleep disorders clinics. ■ Viral infections (e.g., HIV pneumonia, infectious mononucleosis, Guillain– Barré). ■ Genetic—May have autosomal dominant mode of inheritance in some individuals.

Course ■ Progressive onset, beginning between ages 15 and 25. ■ Persistent course unless treated. Treatment ■ Life-long therapy with modafinil (first-line) or stimulants such as methylphenidate; amphetamine-like antidepressants such as atomoxetine are second-line therapy. ■ Pitolisant (Wakix) and sodium oxybate (Xyrem) have shown benefit as well. ■ Scheduled napping. OBSTRUCTIVE SLEEP APNEA HYPOPNEA Chronic breathing-related disorder characterized by repetitive collapse of the upper airway during sleep and evidence by polysomnography of multiple episodes of apnea or hypopnea per hour of sleep. A 40-year-old businessman states that

over the past 2 years he has had trouble staying awake for more than 2 hours before eventually falling asleep. He then has a hard time sleeping through the night. As a result, his performance at work is suffering. Diagnosis? Many possible diagnoses, but you must always consider obstructive sleep apnea in addition to insomnia disorder, narcolepsy, etc. Features ■ Excessive daytime sleepiness. ■ Apneic episodes characterized by cessation of breathing or hypopneic episodes of reduced airflow (more than 15 per hour). ■ Sleep fragmentation. ■ Snoring. ■ Frequent awakenings due to gasping or choking. ■ Nonrefreshing sleep or fatigue. ■ Morning headaches. ■ Hypertension. Risk Factors Obesity, increased neck circumference, airway narrowing. Prevalence ■ Most common in middle-aged men and women. ■ Male to female ratio ranges from 2:1 to 4:1. ■ Children: 1–2%; middle-aged adults: 2–15%; older adults: >20%. Treatment ■ Positive airway pressure: Continuous (CPAP) and in some cases bilevel (BiPAP). ■ Behavioral strategies such as weight loss and exercise. ■ Surgery, including tonsillectomy and selective upper airway stimulation implants. SLEEP-WAKE DISORDERS

166 SLEEP-WAKE DISORDERS CENTRAL SLEEP APNEA Prevalence ■ Idiopathic subtype rare. ■ Higher frequency in men than women. Course ■ May be chronic in opioid users. Treatment ■ Treat the underlying condition. ■ CPAP/BiPAP. ■ Supplemental O2. SLEEP-RELATED HYPOVENTILATION Prevalence Very uncommon. Course Slowly progressive. Treatment ■ Treat the underlying condition. ■ CPAP/BiPAP. Evidenced by five or more central apneas per hour of sleep. It can be idiopathic, with Cheyne–Stokes breathing (pattern of periodic crescendo– decrescendo variation in tidal volume due to heart failure, stroke, or renal failure), or due to opioid use. It is associated with insomnia and daytime sleepiness. ■ Cheyne–Stokes subtype increased in patients with decreased ejection fraction and acute stroke. ■ Thirty percent of chronic opioid users have central sleep apnea. ■ Tied to comorbid medical conditions, although may be transient. ■ Medications (e.g., acetazolamide [Diamox], theophylline, sedativehypnotics). Polysomnography demonstrates decreased respiration and elevated CO2 levels. Individuals report frequent arousals, morning headaches, insomnia, and excessive daytime sleepiness. Frequently comorbid with medical or neurologic disorders, medication use, or substance use disorder. Over time it can result in pulmonary hypertension, cor pulmonale, cardiac arrhythmias, polycythemia, neurocognitive dysfunction, and eventually respiratory failure due to severe blood gas abnormalities. ■ Medications to stimulate/promote breathing (e.g., bronchodilators, theophylline).

Mr. Richards is a 22-year-old college student with a history of persistent depressive disorder (dysthymic disorder) who arrives at the outpatient psychiatry clinic complaining of daytime sleepiness. He reports that during the past 2 years, he has fallen asleep while in social situations and during his college classes. He often takes naps during class, in movie theaters, and sometimes in the middle of conversations with his girlfriend. His naps typically last for 5–10 minutes and he awakens feeling better. However, within the next 2–3 hours he feels sleepy again. His colleagues joke about his tendency to sleep everywhere, and he feels embarrassed by this. Mr. Richards also complains of “weird” experiences while sleeping. He reports that he sometimes sees bright colors and hears loud sounds that feel real to him. He says that when this occurs it is difficult to distinguish if he is dreaming or is awake. He feels frightened by these experiences because he is unable to move when they happen. However, after a few minutes he reports that these feelings resolve, and he is able to move and is fully awake. In performing a thorough history, you learn that he has had episodes during which he has experienced weakness and has dropped objects from his hands while laughing or becoming angry. Last week, his legs buckled and he fell to the ground

after his friends startled him at a surprise birthday party. He denies ever losing consciousness during these episodes, and there have been no reports of witnessed convulsions. What is this patient's diagnosis? This patient's symptoms are consistent with a diagnosis of narcolepsy. The classic narcolepsy tetrad (all four present in less than 25% of patients) consists of excessive daytime sleepiness or "sleep attacks," REM-related sleep phenomena including inability to move during the transition from sleep to wakefulness, hypnagogic or hypnopompic hallucinations, and a sudden loss of muscle tone evoked by strong emotion without loss of consciousness (cataplexy). Cataplexy may be mild, affecting only the voice, face, or arms, or generalized, causing patients to fall to the ground, and it occurs in 70% of those diagnosed with narcolepsy. What are Mr. Richards's treatment options? In the treatment of narcolepsy, it is important for patients to schedule daytime naps and to maintain a regular sleep schedule at night. They should get at least 8 hours of sleep and keep consistent times for sleeping and awakening. Pharmacological treatments may include the use of stimulants (methylphenidate) and antidepressants. The stimulant modafinil and sodium oxybate (nonstimulant) are also effective in the treatment of narcolepsy. Sodium oxybate (Xyrem) is particularly effective in the treatment of cataplexy. NARCOLEPSY Narcolepsy is characterized by excessive daytime sleepiness and falling asleep at inappropriate times. DSM-5 Criteria ■ Recurrent episodes of need to sleep, lapsing into sleep, or napping during the day, occurring at least three times per week for at least 3 months associated with at least one of the following: • Cataplexy (brief episodes of sudden bilateral loss of muscle tone, most often associated with intense emotion). • Hypocretin deficiency in the CSF. • Reduced REM sleep latency on polysomnography. ■ Hallucinations and/or sleep paralysis at the beginning or end of sleep episodes are common (but not necessary for diagnosis in the DSM-5). SLEEP-WAKE DISORDERS KEY FACT Hypnagogic hallucination: When going to sleep. Hyponopompic hallucination: When transitioning from sleep.

168 SLEEP-WAKE DISORDERS Epidemiology/Prevalence WARDS QUESTION Q: What study is useful in diagnosing narcolepsy? A: Polysomnography. Pathophysiology ■ May have autoimmune component. KEY FACT Treatment Don't confuse narcoleptic cataplexy with catatonic catalepsy (unprovoked muscular rigidity). ■ Sleep hygiene. ■ Scheduled daytime naps. ■ Avoidance of shift work. ■ For excessive daytime sleepiness: ■ For cataplexy: KEY FACT The suprachiasmatic nucleus (SCN) in the hypothalamus coordinates 24-hour or circadian rhythmicity. Symptoms ■ Excessive daytime sleepiness. ■ Insomnia. ■ Sleep inertia. ■ Headaches. ■ Difficulty concentrating. ■ Irritability. ■ Waking up at inappropriate times. ■ Narcolepsy with cataplexy occurs in 0.02–0.04% worldwide. ■ Slightly more common in males than females. ■ Linked to a loss of hypothalamic neurons that produce hypocretin which has excitatory effects promoting wakefulness. ■ Secondary causes include lesions to the posterior hypothalamus and midbrain. • Modafinil is first-line pharmacologic treatment. • Amphetamines (d-amphetamine, methamphetamine). • Other non-amphetamines such as methylphenidate, sodium oxybate, and pitolisant (a novel histamine H3 receptor inverse agonist that is effective for both daytime sleepiness and cataplexy). • Sodium oxybate (drug of choice). • Tricyclic antidepressants (TCAs): Imipramine, desipramine, and clomipramine. • REM suppression drugs such as selective serotonin reuptake inhibitor (SSRI)/serotonin-norepinephrine reuptake inhibitor (SNRI): Fluoxetine, duloxetine, atomoxetine, venlafaxine. ■ Sedative hypnotics are given in some cases to correct disturbed nighttime sleep. CIRCADIAN RHYTHM SLEEP-WAKE DISORDERS Circadian rhythm sleep-wake disorders are recurrent patterns of sleep disruption due to an alteration of the circadian system or misalignment between the endogenous circadian rhythm and sleep-wake schedule required by an individual's

environment or schedule. Subtypes include delayed sleep phase, advanced sleep phase, irregular sleep-wake, non-24-hour sleep-wake, and shift work (see Table 15-1). ■ Increased reaction times and frequent performance errors.

SLEEP-WAKE DISORDERS Parasomnias ■ Abnormal behaviors, experiences, or physiological events that occur during sleep or sleep-wake transitions. ■ Symptoms may include abnormal movements, emotions, dreams, and autonomic activity. ■ Isolated episodes common in childhood and adolescence. ■ Include non-REM sleep arousal disorders, nightmare disorder, REM sleep behavior disorder, restless leg syndrome. See Table 15-2. NON-REM SLEEP AROUSAL DISORDERS Repeated episodes of incomplete arousals that are brief and usually occur during the first one-third of the sleep episode. Include sleepwalking and sleep terrors. SLEEPWALKING Features ■ Repeated episodes of simple to complex behaviors that occur during slowwave (NREM) sleep. ■ Behaviors may include sitting up in bed, walking around, eating, and in some cases “escaping” outdoors. ■ Eyes are usually open with a blank stare and “glassy look.” ■ Difficulty arousing the sleepwalker during an episode. ■ Dreams are not remembered and there is amnesia for the episode. ■ Episodes usually end with patients returning to bed or awakening (briefly) confused and disoriented. ■ Rare cases associated with violent behavior. TABLE 15-1. Circadian Rhythm Sleep-Wake Disorders Disorders Definitions Risk Factors Treatments Delayed sleep phase disorder (DSPD) Chronic or recurrent delay in sleep onset and awakening times with preserved quality and duration of sleep ■ Puberty (secondary to temporal changes in melatonin secretion) ■ Caffeine and nicotine use ■ Irregular sleep schedules ■ Timed bright light phototherapy during early morning ■ Administration of melatonin in the evening ■ Chronotherapy (delaying bedtime by a few hours each night) Advanced sleep phase disorder Normal duration and quality of sleep with sleep onset and awakening times earlier than desired Older age ■Timed bright light phototherapy prior to bedtime ■ Early morning melatonin not recommended (may cause daytime sedation) Shift-work disorder (SWD) Sleep deprivation and misalignment of the circadian rhythm secondary to nontraditional work hours ■ Night shift work ■ Rotating shifts ■ Shifts >16 hours ■ Medical and psychiatry residents ■ Avoid risk factors ■ Bright light phototherapy to facilitate rapid adaptation to night shift ■ Modafinil may be helpful for patients with severe SWD Jet lag disorder Sleep disturbances (insomnia, hypersomnia) associated with travel across multiple time zones Recent sleep deprivation ■Disorder is usually self-limiting ■ Sleep disturbances generally resolve 2–3 days after travel

 Examples ■Sleepwalking Timing ■Slow wave sleep Behaviors ■ Simple to complex (e.g., sitting, walking, eating) Recall and orientation upon awakening Risk factors ■ Sleep deprivation Epidemiology Risk Factors ■ Sleep deprivation. ■ Irregular sleep schedules. ■ Stress. ■ Fatigue. ■ Obstructive sleep apnea. ■ Nocturnal seizures. ■ Fever. ■ Family history. Etiology ■ Unknown. ■ Family history in 80% of cases. Treatment TABLE 15-2. Comparison of REM and NREM Sleep Disorders NREM Disorders REM Disorders ■ REM sleep behavior disorder ■ Sleep terrors ■ Nightmares ■ REM sleep ■ First one-third of sleep ■ Last third of sleep ■ Complex behaviors with gross motor movements, vocalizations (e.g., yelling, limb jerking, punching, kicking) ■ Disoriented ■ Oriented ■ Confused ■ Vivid recall ■ Amnesia for the episode ■ REM sleep behavior disorder (RSBD): ■ Stress ■ OSA ■ ■Older age ■ Medications ■ ■Medications ■ Seizures ■ ■Narcolepsy ■ Fever ■ ■Neurogenerative disorder ■ Nightmares: ■ ■Adolescence and early adulthood ■ ■PTSD ■ 1–7% of adults have sleepwalking episodes (not disorder). ■ 10–30% of children have at least one episode and 2–3% sleepwalk often. ■

Medications, including sedatives/hypnotics, lithium, and anticholinergics. ■ Usually not associated with any significant underlying psychiatric or psychological problems. ■ Most cases do not need to be treated as they are self-limiting. ■ Patients may benefit from education, reassurance, addressing precipitating factors, ensuring a safe environment, and proper sleep hygiene. ■ Refractory cases may respond to low-dose benzodiazepine (e.g., clonazepam).

SLEEP TERRORS Features ■ Recurrent episodes of sudden terror arousals, usually beginning with screaming or crying, that occur during slow-wave sleep. ■ Signs of autonomic arousal, including tachycardia, tachypnea, diaphoresis, and mydriasis. ■ Difficulty arousing during an episode. ■ After episode, patients usually return to sleep without awakening. ■ Dreams are not remembered and there is amnesia for the episode. ■ In rare cases, awakening elicits aggressive behavior. Epidemiology ■ Approximately 2% of adults and 20% of young children have sleep terrors (not disorder). ■ Tenfold increase in first-degree biological relatives of affected patients. ■ High comorbidity with sleepwalking. Risk Factors ■ Same as for sleepwalking. ■ Other sleep disorder such as sleep apnea. Treatment ■ Reassurance that the condition is benign and self-limited. ■ Same as for sleepwalking. NIGHTMARE DISORDER Features ■ Recurrent frightening dreams that occur during the second half of the sleep episode (i.e., during REM sleep). ■ Terminate in awakening with vivid recall. ■ No confusion or disorientation upon awakening. ■ Causes clinically significant distress or impairment in functioning. Epidemiology ■ Frequent nightmares in 1–2% of adults, higher prevalence in women. ■ Peak prevalence in late adolescence or early adulthood. ■ Nightmares are seen in at least 50–70% of posttraumatic stress disorder (PTSD) cases. Treatment ■ Not always needed. Reassurance may help in many cases. ■ Desensitization/Imagery rehearsal therapy (IRT) involves the use of mental imagery to modify the outcome of a recurrent nightmare, writing down the improved outcome, and then mentally rehearsing it in a relaxed state. ■ Medications are rarely indicated. Prazosin and antidepressants are often used to treat nightmares related to PTSD. SLEEP-WAKE DISORDERS KEY FACT Imagery rehearsal therapy (IRT) has been successful in treating recurrent nightmares in patients with PTSD.

172 SLEEP-WAKE DISORDERS REM SLEEP BEHAVIOR DISORDER Features ■ Dream-enacting behaviors include: Epidemiology ■ Occurs mostly in males. Risk Factors ■ Older age, generally more than 50 years. ■ Narcolepsy. WARDS QUESTION Treatment ■ Clonazepam is efficacious in most patients. Q: Which neurocognitive disorder is commonly associated with REM sleep behavior disorder? A: Neurocognitive disorder with Lewy bodies. ■ Melatonin may also be helpful. RESTLESS LEGS SYNDROME Epidemiology ■ Repeated arousals during sleep associated with vocalization or complex motor behavior (dream-enacting behaviors) occurring during REM, more often in the second half of the sleep episode. ■ Characterized by lack of normal muscle atonia during REM sleep. ■ No confusion or disorientation upon awakening. • Sleep talking. • Yelling. • Limb jerking. • Walking and/or running. • Punching and/or other violent behaviors. ■ Presenting complaint is often violent behaviors during sleep resulting in injury to the patient and/or to the bed partner. ■ Prevalence in general population is approximately 0.5%, likely higher in people with psychiatric disorders. ■ Psychiatric medications such as TCAs, SSRIs, SNRIs, and b-blockers. ■ Highly associated with underlying neurodegenerative disorders, especially Parkinson, multiple system atrophy, and neurocognitive disorder with Lewy bodies. ■ Discontinuation of likely causative medications if possible. ■ Ensure environmental safety such as removing potentially dangerous objects from the bedroom and sleeping on the ground until behaviors can be managed effectively. Features The urge to move legs accompanied by unpleasant sensation in the legs, characterized by

relief with movement, aggravation with inactivity, and only occurring or worsening in the evening. ■ Prevalence is 2–7% in the general population. ■ Females 1.5–2 times more likely than males.

Risk Factors ■ Increases with age. ■ Strong familial component. ■ Iron deficiency. ■ Antidepressants, antipsychotics, dopamine-blocking antiemetics, and antihistamines can contribute to or worsen symptoms. ■ Multiple medical comorbidities, including cardiovascular disease, diabetes mellitus, chronic kidney disease, and Parkinson disease. Treatment ■ Behavioral strategies including regular exercise, reduced caffeine intake, and avoiding aggravating factors have been shown to be beneficial. ■ Responds well to pharmacologic treatments. ■ Remove offending agents if possible. ■ Iron replacement if low ferritin. ■ Dopamine agonists, such as pramipexole and ropinirole, and benzodiazepines are first-line treatments. ■ Gabapentin, gabapentin enacarbil (prodrug to gabapentin), and pregablin are also used. ■ Low-potency opioids can be used for treatment-refractory patients. SUBSTANCE/MEDICATION-INDUCED SLEEP DISORDER ■ Severe sleep disorder due to substance intoxication/withdrawal or medication. ■ Sleep disturbance not better explained by another sleep disorder (e.g., symptoms do not last longer than 1 month after intoxication or withdrawal). ■ Can be insomnia, daytime sleepiness, parasomnia, or mixed type. ■ Treatment is to remove the offending substance, or reduce, discontinue, or switch medications (if clinically appropriate). SLEEP-WAKE DISORDERS WARDS QUESTION Q: What laboratory test should be ordered in a person diagnosed with Restless legs syndrome (RLS)? A: Serum ferritin.

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