FP Essentials
Call for Authors – May 2024

Sleep in Adults

We are seeking an author or author group to write this edition of *FP Essentials* on the topic of sleep in adults. This edition will cover four topics:

1. Normal sleep and its importance to health
2. Insomnia
3. Parasomnias
4. Sleep deprivation among physicians and hospitalized patients

The main text of the manuscript should be approximately 10,000 words in length, divided into four sections of approximately 2,500 words each, plus an abstract of approximately 200 words for each section. In addition, there should be key practice recommendations, a maximum of 15 tables/figures total, additional resources, and up to 200 references to provide support for all recommendations and factual statements in the manuscript.

This edition should focus on what is new in each topic and should answer the key questions listed for each section. Each section should begin with an illustrative case, similar to the examples provided, with modifications to emphasize key points; each case should have a conclusion that demonstrates resolution of the clinical situation. The references provided here include information that should be considered in preparation of this edition of *FP Essentials*. However, these should be used only as a starting point in identifying the most current guidelines and references to include in the edition.

Needs Assessment: Sleep is a vital component of health. Yet many of us, patients and physicians alike, routinely do not get enough quality sleep. According to the Centers for Disease Control and Prevention (CDC), one-third of adults in the United States report insufficient sleep.[1] Inadequate sleep is associated with motor vehicle and other injuries, cardiovascular events, obesity, mental health problems, cognitive decline, and premature mortality. Moreover, many individuals rely on potentially dangerous and habituating sedative-hypnotic drugs for sleep. This *FP Essentials* edition will update family physicians on normal and abnormal sleep patterns and the evaluation and management of sleep disorders common in primary care. It also will address the problem of sleep disruption in physicians and hospital care environments.

[1] QuickStats: Percentage* of Adults Aged ≥18 Years Who Sleep <7 Hours on Average in a 24-Hour Period,† by Sex and Age Group - National Health Interview Survey,§ United States, 2020. *MMWR Morb Mortal Wkly Rep*. 2022;71(10):393.

Section 1: Normal Sleep and Its Importance for Health

Example case: *BT is a 46-year-old patient who comes to your office for a well-adult examination and health maintenance. Blood pressure is 144/88 mm Hg, and body mass index is 28.5 kg/m^2. The rest of his physical examination and the results of routine laboratory tests are unremarkable. He reports feeling more fatigued and less motivated to exercise for the past year. He likes to watch videos on his tablet until late at night, and he usually gets about 6 hours of sleep per night. He says he used to be able to function well on little sleep, but it seems like now it is catching up with him.*

Key questions to consider:

Normal Sleep Patterns

- How is normal sleep defined?
- What are the various stages of normal sleep, including both nonrapid eye movement and rapid eye movement (REM) sleep? What are the characteristic features and length of each stage?
- What are sleep cycles? What are the usual patterns and duration of each sleep cycle? How many cycles do adults experience during a healthy night of sleep?
- How do the percentages of deep (stage N3) and REM sleep differ in successive sleep cycles throughout the night? What is the significance of this cycle progression?
- How are sleep stages and cycles measured and scored in a sleep laboratory?
- How accurate are smartwatches and other consumer wearable and nonwearable devices for monitoring sleep?

Importance of Sleep to Health

- How much sleep should adults get in a 24-hour period? How do sleep requirements and patterns change over the lifespan, and how variable are they between individuals?
- What are the health consequences of short-term and chronic sleep deprivation? Consider the following:
    - Physical health, including cardiovascular disease, diabetes, obesity, and immune function
    - Cognitive function, productivity, and quality of life
    - Mental health, including depression and anxiety
    - Motor vehicle crashes and other accidents
    - All-cause mortality
- How much deviation from normal sleep requirements can individuals tolerate before their health is affected? Do napping or sleep banking mitigate the adverse effects of sleep deprivation?
- To what extent can individuals make up sleep deficits? How long does it take to recover from sleep deprivation?
- Are there adverse health consequences from getting too much sleep?

Initial references to consider:

Normal Sleep Patterns

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- Chunnan L, Shaomei S, Wannian L. The association between sleep and depressive symptoms in US adults: data from the NHANES (2007-2014). *Epidemiol Psychiatr Sci*. 2022;31:e63.
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- Prather AA, Pressman SD, Miller GE, Cohen S. Temporal links between self-reported sleep and antibody responses to the influenza vaccine. *Int J Behav Med*. 2021;28(1):151-158.

- Izuhara M, Matsui K, Yoshiike T, et al. Association between sleep duration and antibody acquisition after mRNA vaccination against SARS-CoV-2. *Front Immunol*. 2023;14:1242302.
- Bioulac S, Micoulaud-Franchi JA, Arnaud M, et al. Risk of motor vehicle accidents related to sleepiness at the wheel: a systematic review and meta-analysis. *Sleep*. 2017;40(10).

Section 2: Insomnia

Example case: *PM is a 52-year-old who comes to your office because of difficulty sleeping through the night for the past 6 months. She reports falling asleep easily by 10 pm, but routinely wakes up at approximately 3 am and is unable to fall asleep again. Melatonin has not helped. She takes citalopram for anxiety but is otherwise healthy. She exercises regularly, drinks 2 cups/day of coffee, and drinks alcohol once per week.*

Key questions to consider:

Common Sleep Disrupters and Evaluation of Insomnia

- What are sleep insufficiency, sleep deprivation, and insomnia? How prevalent are they?
- What are the diagnostic criteria for insomnia and chronic insomnia?
- What are the causes of insomnia in adults? How are these causes categorized?
- What are the most common environmental, chemical, and other disrupters of sleep in otherwise healthy adults? What risk factors and comorbid medical and psychiatric conditions are associated with insomnia?
- How and how often should family physicians assess their patients' sleep health? What screening tools are recommended and how accurate are they?
- What is the recommended approach to evaluating patients who have difficulty sleeping? What is the role of sleep questionnaires and sleep diaries?
- What differential diagnoses and other conditions (eg, anxiety, depression, restless leg syndrome, sleep apnea) should physicians consider when evaluating patients for insomnia? What is the relationship between insomnia and obstructive sleep apnea?
- What laboratory and diagnostic tests may be helpful in evaluating patients having insomnia? What are the indications for actigraphy and polysomnography?

Insomnia Management

- What are the different types of insomnia in adults? How do the recommended approaches to managing acute and chronic insomnia differ?
- What components of good sleep hygiene should be recommended to patients with insomnia? How effective is sleep hygiene alone for managing chronic insomnia?
- What is the role of cognitive behavioral therapy for insomnia (CBT-I)? How effective is CBT-I compared with pharmacotherapy? How can CBT-I be administered effectively in a primary care setting? Are online self-administered versions of CBT-I effective?
- What are 4-7-8 breathing and other breathing exercises, and how effective are they for managing insomnia?
- What are the roles of avoiding screen time, avoiding looking at the clock in the middle of the night, use of blindfolds, cool vs warm room temperatures, mattress type, and other physical and behavioral factors on improving or impairing sleep?
- What is the role of physical exercise in chronic insomnia management?
- How long should nonpharmacotherapy be tried before considering pharmacotherapy?
- Are melatonin and over-the-counter sleep aids (eg, antihistamines) effective and/or recommended for managing insomnia? What are the long-term risks of antihistamines?
- How effective are various sedative-hypnotic drugs for restoring quality sleep? Use tables and/or algorithms to indicate order of preference, mechanism of action, recommended

dose, duration of action, potential adverse effects, drug interactions, contraindications, and cost.
- How strong are the associations between benzodiazepine receptor agonists (BZRAs), fracture risk, and death? Discuss the Food and Drug Administration (FDA) boxed warning on BZRAs.
- How should family physicians weigh the risks and benefits of prescribing drugs for insomnia, particularly for older adults?
- What follow-up assessment is recommended for patients taking sedative-hypnotic drugs? What best practice recommendations can family physicians follow when prescribing, tapering, and deprescribing these drugs?

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Common Sleep Disrupters and Evaluation of Insomnia

- Perlis ML, Vargas I, Ellis JG, et al. The natural history of insomnia: the incidence of acute insomnia and subsequent progression to chronic insomnia or recovery in good sleeper subjects. *Sleep*. 2020;43(6):zsz299.
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Insomnia Management

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Section 3: Parasomnias

Example case: *RD is a 62-year-old patient who comes to your office with concerns of acting out his nightmares. His wife reports that several times over the past 3 months, RD has begun violently thrashing about in the bed and yelling in the middle of the night. Once he jumped out of bed and bruised his forehead on the nightstand but had no memory of the episode the following morning. RD takes amlodipine for hypertension and sertraline for depression. He has had no prior difficulty sleeping.*

Key questions to consider:

- What are parasomnias? How do parasomnias differ from other kinds of sleep disorders, such as insomnia and sleep-related movement disorders?
- How are parasomnias in adults classified according to the stage of sleep in which they occur (ie, rapid eye movement [REM]– and non–REM-related parasomnias)? What are examples of each type?
- Discuss confusional arousals, sleep terrors, sleepwalking, sleep paralysis, nightmare disorder, and REM sleep behavior disorder in separate subsections. For each type of parasomnia, address the following:
    - What are the clinical features?
    - How common are they?
    - What causes them? What are the associated risk factors and comorbid medical and psychiatric conditions?
    - What are the diagnostic criteria? What diagnostic tests may be considered when evaluating patients suspected of having these parasomnias?
    - What sleep habits, behavioral changes, and psychotherapeutic interventions are recommended?
    - Is pharmacotherapy effective? If so, what drugs are preferred? How effective are they?
- What are the indications for video polysomnography and electroencephalography in patients suspected of having parasomnias? What can be learned from them?
- Are patients with REM sleep behavior disorder at increased risk for neurodegenerative diseases, such as Parkinson disease?
- What are the indications for referral to a sleep specialist?

Initial references to consider:

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Section 4: Sleep Deprivation Among Hospitalized Patients and Among Physicians

Example case: *HK is a 72-year-old patient who recently was transferred to the medical floor from intensive care, where she had been treated for sepsis due to pneumonia. Although vital signs are stable and oxygen requirements are improving with antibiotic therapy, her mental status has worsened. Her nurse reports that HK slept the previous afternoon but was awake, confused, and calling out most of the night. He asks you to consider ordering something to help HK sleep.*

Key questions to consider:

Sleep Deprivation Among Hospitalized Patients

- In what ways do hospitalized patients experience poor quality and disrupted sleep?
- How does poor quality sleep affect patient recovery during and after acute illness or surgery?
- To what extent does fragmented sleep affect cognitive function, delirium, cardiovascular dysfunction, immune response, and perception of pain?
- How does poor quality sleep affect patient satisfaction, length of stay, and cost of hospitalization?
- What environmental and other nonpharmacotherapy strategies are recommended to improve sleep in hospitalized patients, especially in critical care settings?
- When pharmacotherapy is needed, what drugs are recommended to aid sleep in the inpatient setting? What drugs should be avoided?
- Should sedative-hypnotics for chronic insomnia be adjusted or withheld when patients are admitted to the hospital?

Sleep Deprivation Among Physicians

- How prevalent are sleep insufficiency and sleep deprivation among practicing and resident physicians? Do the prevalence of these problems vary significantly by medical specialty and type of practice (eg, hospital-based vs outpatient)? How does the sleep quality of physicians compare with that of other professions?
- Is there evidence that physician sleep deprivation contributes to medical errors and physician burnout? What is the effect on patient safety and health care costs?
- What countermeasures (eg, naps, caffeine, education about sleep) are recommended for mitigating the effects of fatigue/sleepiness and preventing medical errors and motor vehicle crashes and other accidents among sleep deprived physicians?
- Has increased recognition of physician need for rest in recent years (eg, duty hour restrictions for resident physicians) led to improvements in physician wellness, patient safety, and medical errors? Have there been any deleterious effects on continuity of care, quality of care, or physician training?

Initial references to consider:

Sleep Deprivation Among Hospitalized Patients

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- Quan SF, Landrigan CP, Barger LK, et al. Impact of sleep deficiency on surgical performance: a prospective assessment. *J Clin Sleep Med*. 2023;19(4):673-683.
- Whelehan DF, Alexander M, Connelly TM, McEvoy C, Ridgway PF. Sleepy surgeons: a multi-method assessment of sleep deprivation and performance in surgery. *J Surg Res*. 2021;268:145-157.
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