WHOLE HEALTH: CHANGE THE CONVERSATION
Advancing Skills in the Delivery of Personalized, Proactive, Patient-Driven Care

Hints for Encouraging Healthy Sleep
Clinical Tool

This document has been written for clinicians. The content was developed by the Integrative Medicine Program, Department of Family Medicine, University of Wisconsin-Madison School of Medicine and Public Health in cooperation with Pacific Institute for Research and Evaluation, under contract to the Office of Patient Centered Care and Cultural Transformation, Veterans Health Administration.

Information is organized according to the diagram above, the Components of Proactive Health and Well-Being. While conventional treatments may be covered to some degree, the focus is on other areas of Whole Health that are less likely to be covered elsewhere and may be less familiar to most readers. There is no intention to dismiss what conventional care has to offer. Rather, you are encouraged to learn more about other approaches and how they may be used to complement conventional care. The ultimate decision to use a given approach should be based on many factors, including patient preferences, clinician comfort level, efficacy data, safety, and accessibility. No one approach is right for everyone; personalizing care is of fundamental importance.
WHOLE HEALTH: CHANGE THE CONVERSATION
Hints for Encouraging Healthy Sleep
Clinical Tool

Insomnia is the most common sleep-related disorder, and it is one of the most common complaints encountered by primary care clinicians. Sixty million adults in the United States struggle with insomnia each year.\(^1\) Clinicians can help people with this important health issue by:

1. Encouraging healthy sleep behaviors;
2. Identifying medical problems that may interfere with sleep;
3. Preventing situational or acute insomnia from progressing to chronic insomnia; and
4. Determining which individuals have complex chronic insomnia and would benefit from referral for subspecialty care.

This clinical tool is designed to give you a series of nine helpful hints and tools you can use to help people suffering from insomnia. For more information, see also the clinical tool Neuroplasticity and Sleep.

**1. Rule Out Specific Causes and Gauge Severity**

Some people with insomnia have discrete conditions, and these should be taken into consideration. Examples include:

- obstructive sleep apnea;
- restless legs syndrome (RLS), or periodic limb movements of sleep (PLMS);
- nocturnal gastroesophageal reflux disease (GERD);
- behavioral parasomnias (e.g., sleep walking, etc.); and
- pain.

Other cases of insomnia are not as clearly tied to diagnoses. In such cases, the problem may be primarily one of cognitive-emotional hyperarousal.\(^2\) Many of the approaches that are most helpful for insomnia involve quieting an overactive mind, or modifying thought and behavior patterns that increase, rather than decrease, arousal.

**Sleep diaries**

For insomnia to be treated, it is essential to have a patient provide a sleep diary. An excellent resource for a sleep diary can be found at the National Sleep Foundation website at http://sleepfoundation.org/sleep-diary/SleepDiaryv6.pdf. This free pdf file includes essential information for documenting (and evaluating) seven nights of sleep. Multiple copies can be used to document longer time periods. Simply gathering and analyzing one’s sleep and wake experience for a period of time can be very instructive.
Screening
In approaching a complaint of insomnia, it is appropriate to use screening questions to elicit symptoms. An example is the Insomnia Severity Index (ISI). The ISI is available at MyHealtheVet at https://www.myhealth.va.gov/mhv-portal-web/anonymous.portal?_nfpb=true&_pageLabel=healthyLiving&contentPage=healthy_living/sleep_insomnia_index.htm as well as at http://www.deploymentpsych.org/system/files/member_resource/Insomnia%20Severity%20Index%20-ISI.pdf. Further evaluation of a person’s sleep, including through polysomnography, may be indicated.

2. Strongly Consider Cognitive Behavioral Therapy for Insomnia (CBT-I)

CBT-I is widely used within the VA to treat insomnia without the use of medications. It includes regular visits to a clinician who offers sleep assessments. Patients keep a sleep diary and may use a number of different tools to enhance sleep, tailored to their specific sleep patterns. Some examples of these tools include the following:

- **Sleep restriction therapy** involves intentionally depriving oneself of sleep during the day and until a certain specified bedtime to improve the odds that a person will sleep at night.

- **Stimulus control instructions** are specific “rules” created for a given person by the therapist as his or her sleep habits are reviewed. For instance, to make being in the bedroom a stimulus for sleep, a person may be encouraged not to do anything else in the bedroom.

- **Sleep hygiene education** involves teaching about specific behaviors (things to do and not to do) to improve one’s chances of going to sleep. (Several examples are listed below.)

- **Relaxation training** involves using various mind-body exercises to facilitate greater relaxation before sleep.

- **Relapse prevention** involves anticipating potential future problems and having a plan for how to deal with them. Rules are given to prevent relapses or to deal with them. Examples might include:
  - Use sleep restriction again if a recurrence of insomnia persists beyond a few days.
  - Reinitiate stimulus control procedures right away.
  - Do not try to compensate for sleep loss; keep the sleep schedule as consistent as possible.

Research on CBT-I is strongly supportive. For instance, a 2014 review of its use in Veterans by 316 therapists and 696 patients found that Insomnia Severity Index Scores decreased from 20.7 at baseline to 10.9 during a typical CBT-I experience (d = –2.3, a substantial effect size).
For more information on CBT-I, see the following:

- VA CBT-I website. [https://vaww.portal.va.gov/sites/OMHS/cbt_insomnia/Lists/CBTAbout/AllItems.aspx](https://vaww.portal.va.gov/sites/OMHS/cbt_insomnia/Lists/CBTAbout/AllItems.aspx)

3. Teach About Sleep Hygiene, but Augment with Other Approaches

Sleep hygiene measures are specific behaviors, or rules, to follow to optimize the chances of getting good sleep. Examples include:

- Curtailing excessive time in bed, which can lead to fragmentation of sleep.
- Keeping a regular sleep schedule to stabilize the circadian rhythms.
- Removing the bedroom clock, as clock watching can lead to behavioral arousal.
- Avoiding caffeine, nicotine, and alcohol, especially after 12 p.m.
- Adjusting the bedroom environment, including noise and light levels, which can cause awakenings.
- Enhancing sleep comfort. Temperature, pillow softness, mattress quality, etc., can all have an important effect.
- Avoiding “trying” to fall asleep, as sleep-striving promotes anxiety and behavioral arousal.
- Avoiding daytime napping, especially in the evening.

Sleep hygiene approaches are essential in treating chronic insomnia but are seldom sufficient. In addition to good sleep hygiene, patients with chronic insomnia usually require additional interventions. (CBT-I, described above, which incorporates sleep hygiene approaches as well as many other techniques, is much more effective than sleep hygiene alone.)

4. Balance the C and S Drives as Much as Possible

The sleep-wake cycle is driven by two sleep drives:

- **The homeostatic drive, or S drive**, is associated with a linear increase in sleep pressure over time from the time of last sleep. It is at its least intense immediately after awakening and at its maximum prior to sleep (at bedtime, ideally). The S drive is mediated through adenosine that accumulates as a result of energy metabolism during the active waking phase. Caffeine is a potent adenosine antagonist.
WHOLE HEALTH: CHANGE THE CONVERSATION
Clinical Tool: Hints for Encouraging Healthy Sleep

- **The circadian drive, or C drive**, is linked to how sleep pressure varies based on the day-night cycle. It is linked to melatonin and light levels.

The net effect of sleep pressure that we all experience subjectively as sleepiness is based on a sum of the C and S drives. Optimum sleep health occurs when the S and C drives are synchronized. This is why even a well-rested person finds the time between 2 a.m. and 5 a.m. to be a period of profound sleepiness; C drive is increased. Conversely, the time between 8 a.m. and noon is a time of a decreased ability to sleep, even in the face of sleep deprivation, because C drive is decreased. Napping, especially in the evening when the C drive is relatively low, can substantially diminish the net need to sleep and cause significant problems with sleep onset at bedtime. Therefore, patients with sleep difficulties should be encouraged to:

  - **Refrain from napping**, but if they are unable to refrain, napping should be encouraged between 2 p.m. and 4 p.m. when the circadian sleep drive is high. (Of course, patients with “true” insomnia generally cannot nap even if they try.)
  - **Avoid falling asleep watching television**. Doing so, even when it is accidental, or unintentionally dozing, is a frequent cause of delayed sleep onset.

5. **Regulate Circadian Rhythm**

**Lighting**
Decreased ambient lighting is a powerful stimulus for the secretion of melatonin by the pineal gland. Melatonin serves as a systemic signal that prepares the brain and body for sleep. The widespread use of indoor lighting can interfere with melatonin secretion and result in delayed sleep onset. In addition to coming from ambient room lighting, excess light exposure can also come from computer screens, handheld devices, and smartphones. It is possible to purchase devices that mitigate the effects of light from electronic screens.

**Supplementation**
Melatonin supplementation can be helpful in addressing delayed melatonin rise in the evening. Careful attention must be given to the timing of melatonin administration. Melatonin should not be taken at bedtime, but rather one to two hours before bedtime, as this most closely mimics when melatonin levels would rise naturally. Sublingual melatonin is more bioavailable than oral ingested melatonin. The suggested dose is 0.3 to 3 milligrams. Lower doses may be more effective than higher doses, as they more naturally simulate evening melatonin rise. Melatonin tends to be quite safe when taken at recommended doses.

6. **Decrease Behavioral Hyperarousal**

Behavioral hyperarousal is at the root of most chronic insomnia.

Care providers should feel comfortable recommending a variety of self-care strategies for reducing behavioral hyperarousal and insomnia. These can include:
Clinical Tool: Hints for Encouraging Healthy Sleep

- **Breathwork.** The 4-7-8 breathing exercise is very simple and easy for most patients to master. It involves inhaling for a count of 4, holding the breath for a count of 7, and exhaling for a count of 8. Usually a simple demonstration of the technique in the clinic is sufficient. In addition, excellent audio resources are available such as “Breathing: The Master Key to Self Healing” by Andrew Weil, M.D. Breathing exercises can be incorporated as a part of a relaxation ritual 30 minutes before bedtime and can be repeated anytime and anywhere. The 4-7-8 breath should only be done two or three times in a row by beginners, as it can make some people a bit light-headed.

- **Guided imagery.** This is a simple and convenient relaxation technique that can be used in a variety of settings in which anxiety and behavioral hyperarousal are problematic. Prerecorded guided imagery programs are available from a variety of sources.

- Reducing exposure to technology and displays that can feed hyperarousal, particularly in the time before sleep.

- Encouraging exercise and movement during the day.

For more information on ways to ease stress and decrease hyperarousal, see the Power of the Mind module.

7. Consider Botanical (Herbal) Remedies

A large number of botanical remedies are available for insomnia. In contrast to prescription sleeping medications that mainly work through the GABA neurotransmitter system and are accompanied by some risk of dependence and respiratory depression, botanical remedies are generally safe. Herbal treatments for insomnia can include teas brewed from raw herbs or extracts. Both can be utilized as single agents or in combination. Potentially useful herbal treatments with which clinicians should be familiar include:

- **Valerian.** Valerian can be used either as a tea or in the form of an extract. Valerian has an odor that some find offensive (likening it to a male goat) and so teas are often combined with other agents such as lemon balm to help disguise the odor. Valerian is a very gentle relaxant with no known toxicity. It enjoys centuries of traditional use in Germany where it is listed in Commission Report E. It is probably best not taken if a person is already taking a benzodiazepine, such as diazepam, alprazolam, or lorazepam, for sleep.

- **Chamomile.** Chamomile also has a long tradition of use as a bedtime tea in England and the United States. Chamomile tea is widely available in grocery stores, pharmacies, and health food stores.
WHOLE HEALTH: CHANGE THE CONVERSATION
Clinical Tool: Hints for Encouraging Healthy Sleep

- **Hops.** Hops is a relaxant that appears to work through adenosine receptors. Hops is traditionally used as a flavoring agent in beer and probably contributes to beer’s relaxant properties. (Of course, alcohol consumption is *not* recommended as a sleep aid.) Hops is often combined in extracts and tea with other agents, such as valerian or chamomile.

Many other herbal remedies for insomnia are available. Kava, for example, is a potent relaxant but with prolonged use can result in liver and nervous system toxicity.

8. Keep Additional Complementary Approaches in Mind as Well

Additional measures for insomnia that require a significant investment of time, energy, and interest by both the patient and healthcare provider include:

- **Yoga.** Many different forms are available. Forms of yoga such as restorative yoga and vinyasa flow yoga may be worth exploring with motivated patients who experience insomnia.
- **iRest.** iRest is a form of yogic meditation that has been secularized and popularized as a treatment for a variety of conditions that are often comorbid with severe insomnia, including posttraumatic stress disorder, depression, and anxiety disorders. A list of iRest teachers can be found at [www.iRest.us](http://www.iRest.us).
- **Mindfulness-based stress reduction (MBSR).** MBSR is a mind-body intervention that can have a positive effect on a variety of health complaints and can, in selected patients, be the basis of an effective intervention for insomnia. MBSR classes are conducted over an 8-week period and include the requirement for 40 minutes of daily practice between weekly sessions and a 4-hour guided silent retreat. For those who are sufficiently motivated, MBSR can be life-changing. See the [Mindful Awareness](http://www.behavioralsleep.org/FindSpecialist.aspx) module for more information.

9. Know When to Refer

Most patients with chronic insomnia can be helped by employment of the important self-care practices listed above. However, other patients with severe chronic insomnia may require referral to a certified sleep medicine clinician. It should be remembered that insomnia can be a powerful premonitory symptom of incipient depression and that insomnia is associated with increased risk of suicide, especially when combined with alcohol abuse. Insomnia is one of the many comorbidities for PTSD.

In many patients with chronic insomnia, the condition is complicated by addiction to sedative-hypnotic drugs. In this context, referral to a qualified behavioral sleep medicine provider is essential. A list of behavioral sleep medicine specialists can be found at [http://www.behavioralsleep.org/FindSpecialist.aspx](http://www.behavioralsleep.org/FindSpecialist.aspx).
Additional Resources

- The Society of Behavioral Sleep Medicine website: [http://www.behavioralsleep.org/About.aspx](http://www.behavioralsleep.org/About.aspx)
- Information about iRest yoga nidra: [http://www.irest.us/](http://www.irest.us/)

Whole Health: Change the Conversation Website

Interested in learning more about Whole Health? Browse our website for information on personal and professional care.


This educational overview was written by John W. McBurney, MD, Clinical Assistant Professor of Neurology, University of South Carolina. McBurney practices integrative medicine informed neurology and sleep disorders medicine with the University Medical Group in Greenville, S.C.

References