

Treatment of Insomnia

What the Research Shows

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About 6% of people meet the DSM-IV criteria for insomnia, with up to 30% meeting at least 1 criterion for the diagnosis.¹ Insomnia can manifest in a number of ways, including difficulty falling asleep, difficulty maintaining sleep, early waking, and non-refreshing sleep.² The causes of insomnia are varied, including medications, physical or psychiatric disorders, sleep apnea, and situational stress. As a result, healthcare providers should complete a sufficiently thorough history, physical examination, and laboratory work-up to help render an assessment. There are standardized questionnaires that can be used to grade the degree of insomnia and also track progress. Examples include the Epworth Sleepiness Scale (ESS) and the Pittsburgh Sleep Quality Index (PSQI).³ A variety of non-pharmacological interventions, discussed below, are available for the treatment of this condition.

Natural Remedies for Insomnia

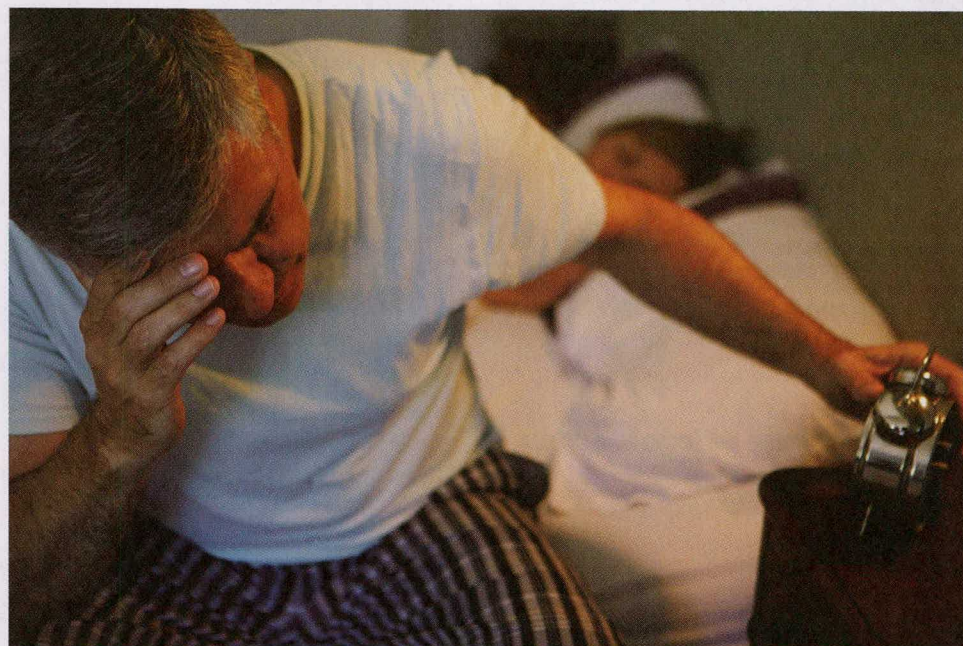
Melatonin

Melatonin is likely one of the first interventions that comes to the mind of a naturopathic doctor seeking to help patients with insomnia. This is perhaps

because of the plausible-sounding mechanism of action for this substance: melatonin (MT) acts on MT(1) and MT(2) receptors present in the suprachiasmatic nucleus of the hypothalamus, and nocturnal rises in melatonin are associated with sleep onset.⁴ Despite this perhaps convincing mechanism, a recent review of the relatively large body of research on this substance suggests that the prominence of melatonin in our minds may not be well-supported.⁵ There are a number of systematic reviews and meta-analyses evaluating the utility of melatonin for addressing sleep disorders. Based on this review of the research, one might conclude that melatonin can help patients fall asleep on average approximately 10 minutes faster and sleep for approximately 15 minutes longer per night. This magnitude of change is likely to be insignificant to patients. A further caveat is that melatonin research has generally been of low quality.

Valerian

Valeriana officinalis, another “go-to” treatment for insomnia, has a long history of traditional use as an herbal sedative. One proposed mechanism of action for this herb relates to one of its components, valerenic acid, which has been shown to inhibit breakdown of GABA in the central nervous system (CNS), resulting in sedation.⁶ In a 2010 meta-analysis of



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18 randomized controlled trials (RCTs), the authors concluded that valerian could be effective for a subjective improvement in sleep quality (patients simply agreeing that their sleep quality had improved; risk ratio 1.37), but that it had essentially no effect on sleep latency (the time it takes to fall asleep).⁷

Kava

One double-blind, placebo-controlled trial with 57 participants investigated the use of a patented kava extract to treat insomnia related to anxiety disorders.⁸ They found that after 4 weeks, the kava group had statistically significant differences in quality of sleep and recuperation from sleep, as measured on the SF-B sleep questionnaire. As for clinical significance, the median difference between kava and placebo groups in quality of sleep was 0.4 points on a 5-point scale, while the median difference between groups in recuperation from sleep was 0.2 points on a 5-point scale. The kava group had improved by approximately 0.8 points on both of these 5-point scales over the 4 weeks.

Acupuncture

Acupuncture has been used for millennia. From a Traditional Chinese Medicine perspective, insomnia can be considered a manifestation of a disordered shen (or disordered spirit), which then causes sleeping problems. A recent Cochrane review was conducted to evaluate needle acupuncture, electroacupuncture, acupressure, and magnetic acupressure in the treatment of insomnia.⁹ Thirty-three trials were included involving 2293 participants with insomnia, aged 15 to 98 years. Some participants had medical conditions contributing to insomnia, such as stroke, end-stage renal disease, perimenopause, pregnancy, and psychiatric diseases. The results showed that compared with no treatment (2 studies, 280

participants) or sham/placebo (2 studies, 112 participants), acupressure resulted in more people experiencing improvement in sleep quality (compared to no treatment: OR 13.08, 95% CI 1.79 to 95.59; compared to sham/placebo: OR 6.62, 95% CI 1.78 to 24.55). When subgroups were analyzed, only needle acupuncture but not electroacupuncture showed benefits. The authors state that all trials had high risk of bias and were heterogeneous in the definition of insomnia, participant characteristics, acupoints and treatment regimen, making it very difficult to develop a consistent conclusion. The effect sizes were generally small with wide confidence intervals. Thus the authors conclude that current evidence is inconclusive.

Auricular acupuncture (AA) has also been studied in a meta-analysis for the treatment of insomnia.¹⁰ Eight RCTs were included involving 894 patients. The treatments that were compared were AA, sham AA, placebo AA, and blank control. The results showed that for AA there were significant improvements in the PSQI, sleep latency, and sleep awakening times, when compared to the other therapies. The evidence quality was low-to-moderate in these studies. As such, the authors concluded that for the treatment of primary insomnia, AA could effectively improve sleep quality, but due to the overall low evidence quality, a cautious attitude should be taken.

Cognitive and Behavioral Interventions

Sleep Hygiene

Sleep hygiene includes a set of behavioral modifications intended to improve sleep quality. They include recommendations such as removing alcohol and caffeine from the diet, as well as suggestions to sleep in a quiet and dark room. In a study examining the utility of sleep hygiene, employees were evaluated for insomnia by the Athens Insomnia Scale (≥ 6 points) and were

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divided into an intervention and control group.¹¹ The intervention group received a short-term program that included sleep hygiene education and behavioral approaches (relaxation training, stimulus control, and sleep restriction) performed by occupational health professionals. The authors then calculated differences in change in PSQI scores between the 2 groups, from baseline to 3 months. They adjusted for gender, age, job title, job category, average number of hours of overtime during the study period, marital status, smoking habit, average number of days of alcohol consumption per week, exercise habits, K6 score, and baseline PSQI score. The results showed that the average PSQI score decreased by 1.0 in the intervention group but increased by 0.9 in the control group. The PSQI is scored from 0 to 21 points. The authors conclude that the intervention program significantly improved the sleep quality of workers with insomnia.

Bedtime Restriction

Implementing bedtime restriction (also called sleep restriction) requires a review – often completed using a sleep diary – of how much time patients spend in bed versus how much time they believe they are asleep during this time. Patients then limit their time in bed to their actual sleep time or 5 hours, whichever is greater. Bedtime is set so that usual wake-up time is preserved. Sleep efficiency (time asleep divided by time in bed) is reassessed weekly, and if it exceeds 90%, time in bed is increased by 15 or 20 minutes.¹² There is a growing body of research supporting this intervention. In one recent randomized trial,¹³ 45 patients with primary insomnia were randomized to either bedtime restriction plus basic

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sleep hygiene (intervention) or to basic sleep hygiene alone (control). At 6 weeks, patients were asked to rate their sleep quality as *much worse*, *worse*, *same*, *better*, or *much better*. In the intervention group, 73% rated their sleep quality as either *better* or *much better*, whereas the control group had only 35% achieve this rating. In summary, the number needed to treat to achieve better or much better sleep by implementing bedtime restriction along with sleep hygiene vs sleep hygiene alone was 3. It therefore appears that this simple and essentially free intervention has the potential for significant benefit regarding patient sleep quality. While actual sleep deprivation is ideally minimal during this process, patients concerned about increased drowsiness may feel most comfortable implementing this intervention while they have time away from work.

Conclusion

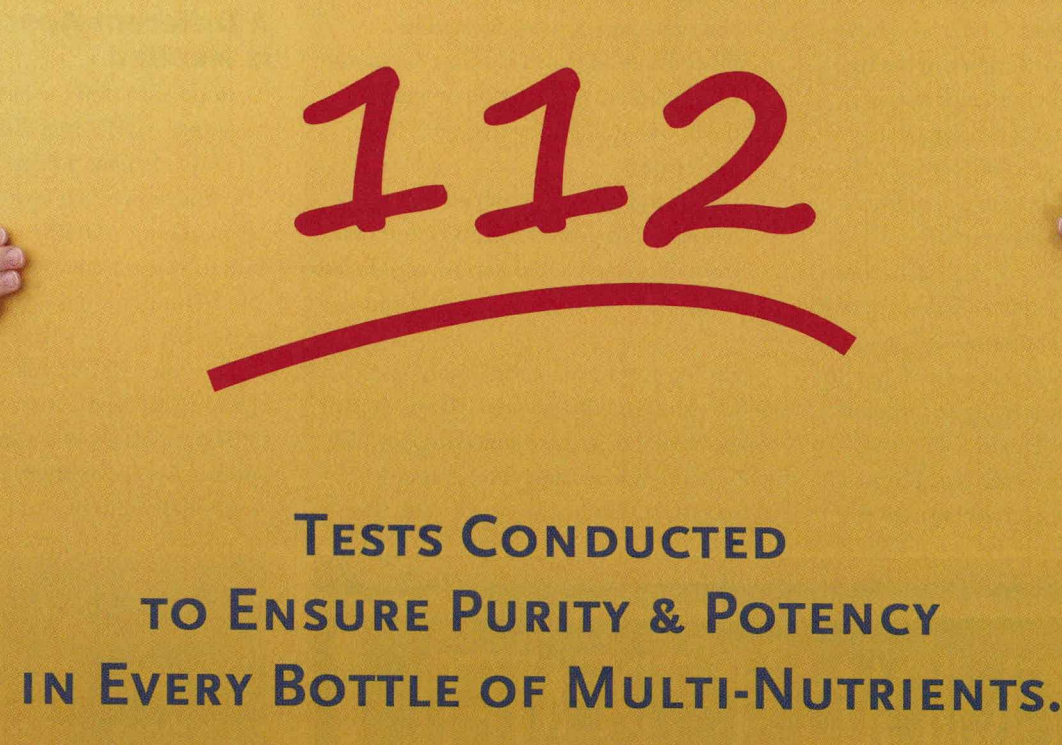
We have summarized a number of interventions for insomnia. Melatonin, valerian, kava, acupuncture, sleep hygiene and bedtime restriction may each have some applicability to your clinical practice, but none of these treatments is suitable for everyone; treatment choice should be based on the needs and preferences of the patient within the context of an appropriately thorough intake. Among the key features of an insomnia history are the patient's capacity to fall asleep in a timely manner and remain asleep, as well as whether he or she wakes refreshed and functions adequately throughout the day. These features may also guide goal-setting for this not-uncommon condition. ■



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