

Why Treat Insomnia?

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Abstract

“Why treat insomnia?” This question grows out of the perspective that insomnia is a symptom that should only receive targeted treatment when temporary relief is needed or until more comprehensive gains may be achieved with therapy for the parent or precipitating medical or psychiatric disorders. This perspective, however, is untenable given recent data regarding the prevalence, course, consequences, and costs of insomnia. Further, the emerging data that the treatment of insomnia may promote better medical and mental health (alone or in combination with other therapies) strongly suggests that the question is no longer “why treat insomnia,” but rather “when isn’t insomnia treatment indicated?” This perspective was recently catalyzed with the American College of Physicians’ recommendation that chronic insomnia should be treated and that the first line treatment should be cognitive-behavioral therapy for insomnia (CBT-I).

Keywords

insomnia, treatment

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A decade ago, the question “why treat insomnia?”¹ was posed to challenge the persistent perspective that only “primary” insomnia (ie, chronic insomnia not attributable to other disorders) warrants target treatment. That is, insomnia should be viewed as a symptom (like fever or headache) and that targeted treatment is only indicated when temporary relief is needed or until more comprehensive gains could be achieved with therapy for the parent or precipitating medical or psychiatric disorder.^{2,3} Implicit in this perspective and belief were 2 major corollaries that guided all considerations about treating insomnia: (1) that most insomnia is “secondary” (occurs in association with, and may be attributed to, other disorders)⁴ and (2) that secondary insomnia is only minimally responsive to targeted treatment (because it occurs owing to disease specific factors). All 3 of these “axioms” are no longer foundational principles for many, if not most, within Sleep Medicine. What remains is for the arguments and evidence to be widely disseminated throughout clinical health care. This brief mis-sive is intended to bridge this gap.

In 2010, it was argued that chronic insomnia (3 or more days per week for 3 or more months), regardless of whether it was viewed as primary or secondary, should be treated given data regarding its prevalence, course, consequences, and costs.¹ Chronic insomnia: occurs in approximately 10%

of the population⁵ and in about 50% of patients in primary care;⁶ persists for decades;^{7,8} is a risk factor for new onset or the exacerbation of existing medical or psychiatric disorders;^{9–13} has an estimated societal cost of more than 100 billion per annum^{14–16} and an estimated individual cost of \$1200 in direct health care dollars per affected individual per year.¹⁶ These data, along with a pivotal commentary that called into question the veracity and utility of the concept of secondary insomnia,¹⁷ set the stage for a flurry of studies showing that targeted treatment for “secondary insomnia” is as effective as it is for primary insomnia.^{18,19} To our knowledge, there has not been a single study showing that cognitive-behavioral therapy for insomnia (CBT-I)

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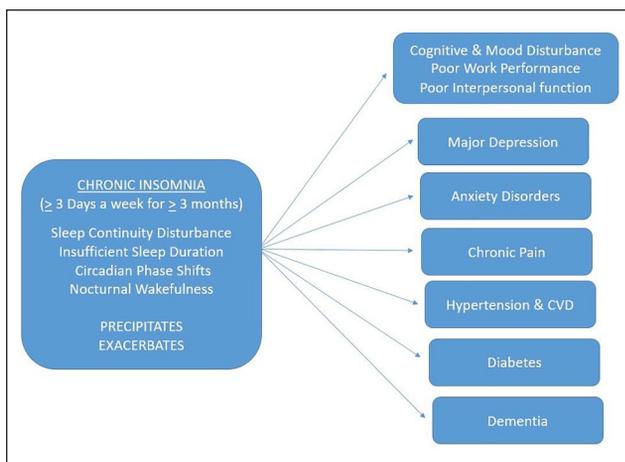
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is ineffective in any specific clinical population or demographic. While not surprising for psychiatric disorders that have insomnia as a core feature (eg, depression and anxiety disorders), CBT-I has also been found to be effective amongst populations previously thought to be especially challenging (eg, patients with PTSD, bipolar disorder, psychosis, heart failure, chronic obstructive pulmonary disease, sleep apnea, cancer, and chronic pain).^{18,20-22} In addition to these studies, new data has begun to emerge showing that the targeted treatment for insomnia also has positive clinical effects on the disorders that tend to occur comorbidly with insomnia, with average pre-to-post effect sizes ranging from -0.03 to 2.48 .¹⁸ For example, in 2 demonstration projects, CBT-I as an adjuvant treatment to escitalopram doubled response and remission rates for depression and reduced suicidal ideation by 50%.^{23,24} Other examples (that also await confirmation in large scale RCTs vs experimental studies or small demonstration projects) are studies that show that CBT-I increases pain tolerance,²⁵⁻²⁷ promotes better glucose control,^{28,29} reduces blood pressure,³⁰ increases beta amyloid clearance,^{31,32} and enhances immune function.³³⁻³⁵



Taken together, the data from these programs of research likely prompted the framers of the DSM-5,³⁶ ICS-3,³⁷ and the ICD-11³⁸ to reclassify insomnia as an independent disorder (ie, Insomnia Disorder). During this same time frame, this new perspective was catalyzed by the American College of Physicians' recommendation that chronic insomnia should be treated in its own right and that the first line treatment should be CBT-I.³⁹ These momentous changes notwithstanding, most patients are not likely to receive treatment for insomnia. This is likely true for a variety of reasons. First individuals with sleep continuity disturbance (problems falling and/or staying asleep) tend not to seek treatment, and when they do, do so when the problem has persisted years, if not decades. Second, primary care

providers tend not to inquire about sleep disturbance (in general), or about insomnia (in specific),⁴⁰⁻⁴² despite the disorders' high prevalence amongst their patients and their association with psychiatric and medical illness (both as risks for new onset disease and exacerbatory factors for existing disorders).

Part of this "don't ask and don't tell" phenomenon is that individuals with insomnia don't view the problem as one that merits professional attention (ie, it will go away on its own or can be self-managed). This point of view is not unreasonable, it represents the understandable confusion between acute and chronic insomnia. The former occurs in 27% to 37% of the population per annum and resolves in 47% to 78% of cases.^{43,44} Another possible reason for the lack of patient report of insomnia may be that patients, like many healthcare providers, may also labor under the misapprehension that their insomnia is secondary to their other ailments, and therefore will automatically be addressed as their clinician treats the "primary condition". Finally, primary care providers often don't have sufficient sleep medicine training,^{45,46} and/or simple tools for assessment,⁴⁷ and/or the requisite information about what constitutes best (evidenced based) practice, and/or easy access to referral information. This set of circumstances more than explains why clinicians would be disinclined to ask about sleep health issues.

In addition to the above considerations, there are treatment specific issues. In the case of the medical management of insomnia, fundamental questions remain unanswered about what constitutes best (evidenced based) practice. For example: "When is medical treatment optimal?"; "what medications are most effective and safest?"; "what medication regimen produces the best and longest lasting results?". The lack of data in this regard makes it understandable that clinicians are reluctant to assess and treat insomnia, particularly with scheduled medications. In the case of the CBT-I, too few patients and clinicians are aware that: CBT-I is not simply sleep hygiene; pharmacotherapy and behavioral therapy are equipotent during acute treatment (first 4-8 weeks of Tx);⁴⁸⁻⁵⁰ CBT-I is a focused and short term therapy (6-8 weekly or bi-weekly, 30-90 minute sessions);⁵¹⁻⁵³ CBT-I has enduring benefits following treatment discontinuation^{54,55} and potential positive collateral effects on comorbid illness.¹⁸

While the ACP's recommendation regarding CBT-I represents a paradigm shift, primary care providers simply do not have guidelines regarding "when is CBT-I indicated" or "how one goes about referring for CBT-I". If these factors were to be addressed, there would remain 3 profound barriers to accessing CBT-I: (1) there are not enough CBT-I providers; (2) CBT-I is not on "formulary" for many health care systems; and/or (3) CBT-I is often not covered by 3rd party payers. Given the recommendation that "chronic insomnia should be treated, and ideally with CBT-I," it may

be of use to directly address the issues that are preventing good policy from becoming good practice.

Problem: Patients do not view insomnia as a problem that warrants direct treatment. **Possible Solution:** Work cooperatively with: (1) industry to create public service/direct to consumer advertisements (ie, unbranded DCAs) that highlight chronic insomnia as a disorder, its morbidity, and the need for treatment without specific reference to any 1 therapeutic; and/or (2) prominent stake holders to assist with messaging and lobbying efforts. In the absence of (or in addition to) DCA's, informational videos could be placed on clinic waiting room video screens.

Problem: Primary care providers do not inquire about insomnia, nor do they have training in the assessment and treatment of this disorder. **Possible Solution:** Collaborate with primary care organizations to promote the early detection of sleep disorders (in general) and insomnia (in specific) via the use of a brief comprehensive screener and/or a short insomnia severity measure at annual visits (or as needed). The best existing screeners are the GSAQ,⁵⁶ the HSDQ,⁵⁷ or the SDS-CL-25.⁵⁸ The best (most well established and most commonly used) insomnia instrument is the 7-item ISI.^{59,60} Another brief instrument is the 8-item PROMIS SD-SF.^{61,62} In the short term, adoption of the ISI or PROMIS SD-SF would be enough to allow for the detection of undiscussed or occult insomnia and allow for treatment referral. This effort could also potentially include the establishment of, or better access to, on-line screeners and resources for patients and providers.

Problem: Primary care providers do not have guidelines regarding "when is CBT- I indicated". **Possible Solution.** In the absence of empirical studies, or professional position papers, there have been publications on this issue. One such publication provided an algorithm for this determination.⁶³ This issue was also addressed by the ACP's 2016 publication. Basically, their position was if the insomnia condition is chronic (3 or more days per week for 3 or more months), CBT-I is indicated. This may not be so. CBT-I may be contraindicated in individuals with seizure disorders, severe obstructive sleep apnea, untreated bipolar disorder, in individuals who are actively suicidal, or in patients with severe parasomnias. CBT-I may also not be indicated for those with Non-Restorative Sleep syndrome (NRS), mild insomnia/short sleepers, or paradoxical insomnia. Perhaps the solution to this issue is to refer all cases of chronic insomnia to CBT-I providers (Behavioral Sleep Medicine specialists) as they will be well positioned to determine if CBT-I is contraindicated and/or how to manage complex cases (alone or in collaboration with the referring clinician).

Problem: Referral for insomnia care can be difficult. **Possible Solution:** While referral for specialty care is often a matter of what is available "in system" and a matter of the individual clinicians' experience with local specialists, there are national directories for accredited sleep centers and sleep

specialist provider directories. These are listed below. Perhaps access to the online information and service directories could be incorporated into the aforementioned public services ads (on TV or on waiting room screens). Alternatively, before referral to secondary and tertiary care options, primary care offices or at least primary care practices embedded in larger healthcare systems could utilize *online versions of CBT-I* as a starting point to a step care delivery of service. Provided physician education (or program algorithms) are sufficiently able to monitor the outcomes from online therapies so that patients who do not succeed in this first step of care could then be referred on to higher levels, perhaps within or outside of the primary care office.

Accredited Sleep Centers

<http://sleepeducation.org/find-a-facility>

Adult Behavioral Sleep Medicine Services / Providers

<https://cbti.directory/>

<https://behavioralsleep.org/index.php/society-of-behavioral-sleep-medicine-providers/member-providers>

Pediatric Sleep Medicine Services / Providers

<https://www.babysleep.com/tools/find-a-sleep-center/>

Problem: There are too few providers. **Possible Solution:** Steps have been taken over the course of the past 2 decades to increase the size of the CBT-I workforce and the availability of CBT-I. Initial efforts focused on the: (1) creation of a certification process for licensed clinicians (eg, physicians, psychologists, nurses, and social workers), initially via the ABSM and later via the BBSM; (2) development and provision of CE and CME CBT-I trainings [Multidisciplinary continuing education trainings are available (in order from most to least established) at University of Rochester/Pennsylvania (Perlis, 2005), the Department of Defense (Brim, 2009), the Veterans Administration (Manber, 2010), Ryerson University (Carney, 2015), Oxford University (Espie, 2016), University of Arizona (Taylor, 2020).]; and (3) establishment of a society dedicated to CBT-I and Behavioral Sleep Medicine. Two of the above efforts (the establishment of a BSM society and CE/CME trainings) had as a foundational mandate extending training and certification to master level clinicians. While these efforts have been successful, the provider shortage has persisted. Part of the problem has to do with reimbursement for CBT-I (ie, reimbursement for the intervention in its evidence based form by all payers for all practitioners). Some argue that, once this issue is resolved, it will serve as the impetus for clinicians from diverse fields to seek out training and certification. While universal reimbursement may be the impetus, a dedicated lobbying effort will be needed to secure universal reimbursement. This can, and will be, bolstered by ongoing research efforts that focus on healthcare utilization in untreated insomnia and cost outcomes of CBT-I.

Closing Remark. A decade ago, the question “Why treat insomnia?” required the delineation of an argument based on evidence that insomnia is “pervasive, pernicious, unremitting, costly, and disabling”.¹ Today, the question is not “why” but “how”; how do we mainstream sleep health (in general) and the assessment and treatment of insomnia (in specific). The recommendations proffered here represent only a few reasonable ideas. Clearly what is needed is a coming together of stakeholders including providers, insurers, industry representatives, policy makers, and patients. Daunting as such a convocation may be, a collaboration of this type could well yield the desired results: that sleep health becomes a part of regular medicine and that all patients that need and want CBT-I, can receive CBT-I.

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References

- Matteson-Rusby SE, Pigeon WR, Gehrman P, Perlis ML. Why treat insomnia? *Prim Care Companion J Clin Psychiatry*. 2010;12:PCC 08r00743.
- Bonnet MH, Arand DL. Diagnosis and treatment of insomnia. *Respir Care Clin N Am*. 1999;5:333-348, vii.
- Holbrook AM, Crowther R, Lotter A, Cheng C, King D. The diagnosis and management of insomnia in clinical practice: a practical evidence-based approach. *CMAJ*. 2000;162:216-220.
- Buysse DJ, Reynolds CF 3rd, Kupfer DJ, et al. Clinical diagnoses in 216 insomnia patients using the international classification of sleep disorders (ICSD), DSM-IV and ICD-10 categories: a report from the APA/NIMH DSM-IV field trial. *Sleep*. 1994;17:630-637.
- Ohayon MM. Epidemiology of insomnia: what we know and what we still need to learn. *Sleep Med Rev*. 2002;6:97-111.
- Shochat T, Umphress J, Israel AG, Ancoli-Israel S. Insomnia in primary care patients. *Sleep*. 1999;22 Suppl 2:S359-365.
- Mendelson WB. Long-term follow-up of chronic insomnia. *Sleep*. 1995;18:698-701.
- Young T. Natural history of chronic insomnia. *J Clin Sleep Med*. 2005;1:466.
- Colten HR, Altevogt BM, eds. *Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem*. Washington, DC: National Academies Press (US); 2006.
- National Institutes of H. National Institutes of Health State of the science conference statement on manifestations and management of chronic insomnia in adults, June 13-15, 2005. *Sleep*. 2005;28:1049-1057.
- Taylor DJ, Lichstein KL, Durrence HH. Insomnia as a health risk factor. *Behav Sleep Med*. 2003;1:227-247.
- Sivertsen B, Lallukka T, Salo P, et al. Insomnia as a risk factor for ill health: results from the large population-based prospective HUNT Study in Norway. *J Sleep Res*. 2014;23:124-132.
- Grandner MA. Sleep, health, and society. *Sleep Med Clin*. 2020;15:319-340.
- Taddei-Allen P. Economic burden and managed care considerations for the treatment of insomnia. *Am J Manag Care*. 2020;26:S91-S96.
- Leger D, Bayon V. Societal costs of insomnia. *Sleep Med Rev*. 2010;14:379-389.
- Ozminkowski RJ, Wang S, Walsh JK. The direct and indirect costs of untreated insomnia in adults in the United States. *Sleep*. 2007;30:263-273.
- Lichstein KL. Secondary insomnia: a myth dismissed. *Sleep Med Rev*. 2006;10:3-5.
- Wu JQ, Appleman ER, Salazar RD, Ong JC. Cognitive behavioral therapy for insomnia comorbid with psychiatric and medical conditions: a meta-analysis. *JAMA Intern Med*. 2015;175:1461-1472.
- Geiger-Brown JM, Rogers VE, Liu W, Ludeman EM, Downton KD, Diaz-Abad M. Cognitive behavioral therapy in persons with comorbid insomnia: a meta-analysis. *Sleep Med Rev*. 2015;23:54-67.
- Taylor DJ, Pruiksma KE. Cognitive and behavioural therapy for insomnia (CBT-I) in psychiatric populations: a systematic review. *Int Rev Psychiatry*. 2014;26:205-213.
- Jansson-Frojmark M, Norell-Clarke A. Cognitive behavioural therapy for insomnia in psychiatric disorders. *Curr Sleep Med Rep*. 2016;2:233-240.
- Garland SN, Johnson JA, Savard J, et al. Sleeping well with cancer: a systematic review of cognitive behavioral therapy for insomnia in cancer patients. *Neuropsychiatr Dis Treat*. 2014;10:1113-1124.
- Manber R, Edinger JD, Gress JL, San Pedro-Salcedo MG, Kuo TF, Kalista T. Cognitive behavioral therapy for insomnia enhances depression outcome in patients with comorbid major depressive disorder and insomnia. *Sleep*. 2008;31:489-495.
- Trockel M, Karlin BE, Taylor CB, Brown GK, Manber R. Effects of cognitive behavioral therapy for insomnia on suicidal ideation in veterans. *Sleep*. 2015;38:259-265.
- Smith MT, Finan PH, Buenaver LF, et al. Cognitive-behavioral therapy for insomnia in knee osteoarthritis: a randomized, double-blind, active placebo-controlled clinical trial. *Arthritis Rheumatol*. 2015;67:1221-1233.
- Vitiello MV, Rybarczyk B, Von Korff M, Stepanski EJ. Cognitive behavioral therapy for insomnia improves sleep and decreases pain in older adults with co-morbid insomnia and osteoarthritis. *J Clin Sleep Med*. 2009;5:355-362.

27. Jungquist CR, O'Brien C, Matteson-Rusby S, et al. The efficacy of cognitive-behavioral therapy for insomnia in patients with chronic pain. *Sleep Med.* 2010;11:302-309.
28. Alshehri MM, Alenazi AM, Hoover JC, et al. Effect of cognitive behavioral therapy for insomnia on insomnia symptoms for individuals with type 2 diabetes: protocol for a pilot randomized controlled trial. *JMIR Res Protoc.* 2019;8:e14647.
29. Alshehri MM, Alothman SA, Alenazi AM, et al. The effects of cognitive behavioral therapy for insomnia in people with type 2 diabetes mellitus, pilot RCT part II: diabetes health outcomes. *BMC Endocr Disord.* 2020;20:136.
30. McGrath ER, Espie CA, Power A, et al. Sleep to lower elevated blood pressure: a randomized controlled trial (SLEPT). *Am J Hypertens.* 2017;30:319-327.
31. Winer JR, Mander BA, Helfrich RF, et al. Sleep as a potential biomarker of Tau and beta- amyloid burden in the human brain. *J Neurosci.* 2019;39:6315-6324.
32. Mendelsohn AR, Larrick JW. Sleep facilitates clearance of metabolites from the brain: glymphatic function in aging and neurodegenerative diseases. *Rejuvenation Res.* 2013;16:518-523.
33. Irwin MR. Why sleep is important for health: a psychoneuro-immunology perspective. *Annu Rev Psychol.* 2015;66:143-172.
34. Irwin MR, Opp MR. Sleep health: reciprocal regulation of sleep and innate immunity. *Neuropsychopharmacology.* 2017;42:129-155.
35. Zielinski MR, Krueger JM. Sleep and innate immunity. *Front Biosci (Schol Ed).* 2011;3:632-642.
36. American Psychiatric Association. *DSM-5 Task Force. Diagnostic and Statistical Manual of Mental Disorders: DSM-5.* 5th ed. American Psychiatric Association; 2013.
37. Medicine AAoS. *International Classification of Sleep Disorders.* 3rd ed. American Academy of Sleep Medicine; 2014.
38. Organization WH. *International Classification of Diseases.* 11th Rev. Organization WH; 2018.
39. Qaseem A, Kansagara D, Forcica MA, Cooke M, Denberg TD, Clinical guidelines committee of the American College of P. Management of chronic insomnia disorder in adults: a clinical practice guideline from the American College of Physicians. *Ann Intern Med.* 2016;165:125-133.
40. Klingman KJ, Williams NJ, Perlis ML, Grandner MA. Doctor-patient sleep discussions for US adults: results from the SHADES study. *Sleep Health.* 2019;5:658-665.
41. Alattar M, Harrington JJ, Mitchell CM, Sloane P. Sleep problems in primary care: a North Carolina family practice research network (NC-FP-RN) study. *J Am Board Fam Med.* 2007;20:365-374.
42. Senthilvel E, Auckley D, Dasarathy J. Evaluation of sleep disorders in the primary care setting: history taking compared to questionnaires. *J Clin Sleep Med.* 2011;7:41-48.
43. Ellis JG, Perlis ML, Neale LF, Espie CA, Bastien CH. The natural history of insomnia: focus on prevalence and incidence of acute insomnia. *J Psychiatr Res.* 2012;46:1278-1285.
44. 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:zsz299.
45. Papp KK, Penrod CE, Strohl KP. Knowledge and attitudes of primary care physicians toward sleep and sleep disorders. *Sleep Breath.* 2002;6:103-109.
46. Saleem AH, Al Rashed FA, Alkharboush GA, et al. Primary care physicians' knowledge of sleep medicine and barriers to transfer of patients with sleep disorders. A cross-sectional study. *Saudi Med J.* 2017;38:553-559.
47. Klingman KJ, Jungquist CR, Perlis ML. Questionnaires that screen for multiple sleep disorders. *Sleep Med Rev.* 2017;32:37-44.
48. Mitchell MD, Gehrman P, Perlis M, Umscheid CA. Comparative effectiveness of cognitive behavioral therapy for insomnia: a systematic review. *BMC Fam Pract.* 2012;13:40.
49. Rios P, Cardoso R, Morra D, et al. Comparative effectiveness and safety of pharmacological and non-pharmacological interventions for insomnia: an overview of reviews. *Syst Rev.* 2019;8:281.
50. Smith MT, Perlis ML, Park A, et al. Comparative meta-analysis of pharmacotherapy and behavior therapy for persistent insomnia. *Am J Psychiatry.* 2002;159:5-11.
51. Perlis ML. *Cognitive Behavioral Treatment of Insomnia: A Session-by-Session Guide.* Springer; 2005.
52. Edinger JD, Carney CE. *Overcoming Insomnia: A Cognitive-Behavioral Therapy Approach: Therapist Guide.* 2nd ed. Oxford University Press; 2015.
53. Morin CM, Espie C. *Insomnia: A Clinical Guide to Assessment and Treatment.* 4th ed. Springer; 2004.
54. Castronovo V, Galbiati A, Sforza M, et al. Long-term clinical effect of group cognitive behavioral therapy for insomnia: a case series study. *Sleep Med.* 2018;47:54-59.
55. Van der Zweerde T, Bisdounis L, Kyle SD, Lancee J, Van Straten A. Cognitive behavioral therapy for insomnia: a meta-analysis of long-term effects in controlled studies. *Sleep Med Rev.* 2019;48:101208.
56. Roth T, Zammit G, Kushida C, et al. A new questionnaire to detect sleep disorders. *Sleep Med.* 2002;3:99-108.
57. Kerkhof GA, Geuke ME, Brouwer A, Rijsman RM, Schimsheimer RJ, Van Kasteel V. Holland sleep disorders questionnaire: a new sleep disorders questionnaire based on the international classification of sleep disorders-2. *J Sleep Res.* 2013;22:104-107.
58. Klingman KJC, Perlis M. Introducing the sleep disorders symptom checklist-25: a primary care friendly and comprehensive screener for sleep disorders. *Sleep Med Res.* 2017;8:17-25.
59. Bastien CH, Vallieres A, Morin CM. Validation of the insomnia severity index as an outcome measure for insomnia research. *Sleep Med.* 2001;2:297-307.
60. Morin CM, Belleville G, Belanger L, Ivers H. The insomnia severity index: psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep.* 2011;34:601-608.
61. Buysse DJ, Yu L, Moul DE, et al. Development and validation of patient-reported outcome measures for sleep disturbance and sleep-related impairments. *Sleep.* 2010;33:781-792.
62. Yu L, Buysse DJ, Germain A, et al. Development of short forms from the PROMIS sleep disturbance and sleep-related impairment item banks. *Behav Sleep Med.* 2011;10:6-24.
63. Smith MT, Perlis ML. Who is a candidate for cognitive-behavioral therapy for insomnia? *Health Psychol.* 2006;25:15-19.