# Recent Developments in the Classification, Evaluation, and Treatment of Insomnia*

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Sleep/wake complaints, and specifically insomnia, are some of the more common problems encountered in the outpatient setting. Despite its prevalence, few clinicians are experts at diagnosing and treating this entity. Additionally, diagnosis and treatment of insomnia is a time-intensive process (often the initial interview takes at least 1 h, depending on the complexity of the insomnia). With a conservative estimate of the annual cost of insomnia between $92.5 and $107.5 billion dollars, it is becoming clear that insomnia has significant medical and public health implications. A problem that has hampered insomnia research is the lack of a standard definition of insomnia for use in research, as well as guidelines for assessment. In recent years, there have been important advances in the classification, evaluation, and treatment of insomnia with efforts to establish greater consensus in how to define and measure insomnia. Cognitive behavioral and pharmacologic therapies have been shown to be effective treatment approaches. Insomnia is a complex entity, often multifactorial in its etiology; and as research and clinical guidelines are established and validated (leading to better data interpretation), continued enhancement of our understanding of this disorder is expected.                    *(CHEST 2006; 130:276–286)*

**Learning Objectives:** 1. Summarize the advances in the diagnosis, classification and evaluation of insomnia. 2. Discuss the current treatment options available for insomnia with emphasis on the effectiveness of Cognitive Behavioral Therapy and Pharmacotherapy.

Insomnia is defined as a complaint of difficulty initiating sleep, difficulty maintaining sleep, waking up too early, or sleep that is chronically non-restorative or poor in quality.[1] Approximately one third of the US adult population reports difficulty sleeping, and 10 to 15% have the clinical disorder of insomnia.[2] Over the years, there have been considerable scientific advances in both the understanding and treatments for insomnia. Despite these advances, insomnia continues to be inadequately identified and treated.

The inadequate identification and treatment of insomnia has significant medical and public health implications. Chronic insomnia results in impaired occupational performance and diminished quality of life,[3,4] as well as higher health-care usage and costs.[5] In 1994, Stoller[6] placed a conservative estimate of the annual cost of insomnia (both direct and indirect costs) between $92.5 and $107.5 billion.

Insomnia has become a major health-care concern over recent years, as evidenced by the increased monies spent on both clinical and pharmaceutical research. As awareness of insomnia by the public continues to increase, it is important that the clinician who sees patients with sleep/wake complaints is adept in the identification, evaluation, and treatment of insomnia. This article aims to provide the reader with the most recent developments in the classification of insomnia, its evaluation, and treatment strategies.

## CLASSIFICATION

The importance of the use of a consistent diagnosis and classification system is often underappreciated. In the clinical realm, it ensures effective communication with colleagues, resulting in improved patient care. In the research arena, consistency plays a major role toward a better understanding of the pathophysiology and ultimate treatment of a disor-

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der. Diagnosis and classification systems are also playing an ever-increasing role in the issue of medical reimbursement. As managed care becomes more pervasive, it is the patient's specific diagnosis that ultimately determines the approval of reimbursement for a treatment plan.

A fundamental obstacle that has made interpretation of insomnia research particularly problematic is the lack of operationally defined inclusion and exclusion criteria that standardize the definitions of insomnia. Having research diagnostic criteria (RDC) has been shown to significantly improve the diagnostic reliability among clinicians and researchers.[7] In August 1999, the American Academy of Sleep Medicine (AASM), recognizing the importance of RDC, commissioned the development of RDC for insomnia. The 5 years of work culminated in the publication of their results in 2004.[8]

The publication of the *Diagnostic Classification of Sleep and Arousal Disorders*[9] by the Association of Sleep Disorders in 1979 heralded the emergence of the discipline of sleep medicine. This was followed by the International Classification of Sleep Disorders (ICSD), published in 1990. In 2005, the second edition of the ICSD (ICSD-2) was published.[1] It is this classification system that will be referred to throughout this article.

It has been shown that the ICSD system, while used frequently (as use was required for center accreditation by the AASM), was not the preferred

classification system by clinicians.[10] A more intuitive symptom-based approach was preferred, and it is this type of approach that is employed in the ICSD-2.

The ICSD-2 system for insomnia bears resemblance, in many aspects, to the original 1979 classification system.[9] The ICSD-2 is a modified version of the original classification system, which results in fewer overall categories, and a grouping of the various psychiatric disorders of the original ICSD (*eg*, mood disorders, post traumatic stress disorder) into a single category "insomnia due to mental disorder." The term *paradoxical insomnia* has also replaced the older term *sleep state misperception*. This term refers to the paradoxical relation between the objective and subjective assessments of sleep in these patients. They report sleeping little or not at all despite having normal sleep established by traditional EEG measures. The term *sleep state misperception* was believed to be inadequate, in that these patients may well have some difficulty with quality of sleep not detected by use of surface electrodes in quantifying sleep depth.

So what is the difference between the RDC and the ICSD-2? The RDC is a set of criteria meant to be used to aid researchers in order to establish consistency in study design and data interpretation. The ICSD-2 is a set of diagnostic criteria to aid the clinician in establishing a clinical diagnosis for a patient. The definition of insomnia and its subtypes are consistent in both publications, and are done so intentionally.

The general criteria for the diagnosis of insomnia are displayed in Table 1. It is necessary that a patient fulfill these criteria before a diagnosis of insomnia can be made. Table 2 lists the classifications of

**Table 1—*General Criteria for the Diagnosis of Insomnia**\**

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| A complaint of difficulty initiating sleep, difficulty maintaining sleep, or waking up too early or sleep that is chronically nonrestorative or poor in quality. |
| The above sleep difficulty occurs despite adequate opportunity and circumstances for sleep. |
| At least one of the following forms of daytime impairment related to the nighttime sleep difficulty is reported by the patient: |
|   Fatigue or malaise |
|   Attention, concentration, or memory impairment |
|   Social or vocational dysfunction or poor school performance |
|   Mood disturbance or irritability |
|   Daytime sleepiness |
|   Motivation, energy, or initiative reduction |
|   Proneness for errors or accidents at work or while driving |
|   Tension, headaches, or GI symptoms in response to sleep loss |
|   Concerns or worries about sleep |

*Adapted from ICSD-2.[1]