SLEEP-WAKE DISORDERS

Insomnia Disorder

DSM-5-TR 780.52 | ICD-10-CM G47.00

Persistent dissatisfaction with sleep quantity or quality plus daytime impairment, maintained by hyperarousal and conditioned wakefulness.

PREVALENCE	TYPICAL ONSET	SEX RATIO	COURSE
~10% chronic; ~30% symptoms	Young adult; rises with age	~1.4:1 female:male	Persistent in ~50% at 3 yrs

CLINICAL PICTURE

- Difficulty initiating sleep, maintaining sleep, or early morning awakening despite adequate opportunity and favorable circumstances.
- Daytime consequences dominate the complaint: fatigue, irritability, impaired concentration, and anticipatory worry about the next night.
- Patients show sleep-effort behaviors such as excessive time in bed, clock-watching, and daytime napping that perpetuate the problem.
- Conditioned arousal presents classically as overwhelming sleepiness on the couch that vanishes the moment the patient enters the bedroom.
- Subjective and objective sleep estimates diverge, and patients typically underestimate total sleep time by roughly 30 to 60 minutes.
- A sleep diary kept for 1 to 2 weeks reveals variable schedules and low sleep efficiency that the clinical interview alone will miss.

DIAGNOSTIC CRITERIA AT A GLANCE

- Sleep dissatisfaction involving initiation, maintenance, or early awakening, present at least 3 nights per week for at least 3 months.
- Clinically significant daytime distress or impairment is required, so poor sleep without daytime consequence does not meet the threshold.
- The difficulty must occur despite adequate opportunity for sleep, which excludes insufficient sleep caused by schedule constraints.
- DSM-5-TR dropped the primary versus secondary split, so insomnia is diagnosed alongside depression or pain rather than subordinated to it.
- Other sleep-wake disorders, substance effects, and coexisting medical conditions must not better account for the presenting complaint.

NEUROBIOLOGY & PHYSIOLOGY

- Hyperarousal is the core model, with elevated cortisol and ACTH, raised metabolic rate, and increased high-frequency EEG at sleep onset.
- Sleep-promoting **VLPO** GABAergic neurons compete with arousal systems using orexin, histamine, norepinephrine, and acetylcholine.
- Dual orexin receptor antagonists target **orexin** signaling, reducing wake drive rather than broadly sedating the entire brain.
- Homeostatic sleep pressure builds through adenosine accumulation, and caffeine antagonizes adenosine receptors for roughly 5 to 7 hours.
- Chronic insomnia roughly doubles the risk of incident depression and is linked to hypertension and cardiometabolic disease.
- Heritability is about 30% to 40%, with genome-wide studies implicating loci shared with anxiety and depressive phenotypes.

PSYCHOLOGICAL MECHANISMS

- The **3P model** of predisposing, precipitating, and perpetuating factors explains how acute situational insomnia becomes chronic.
- Perpetuating behaviors such as extending time in bed reduce sleep efficiency and strengthen the association of bed with wakefulness.
- Dysfunctional beliefs about sleep, including catastrophic predictions about tomorrow, sharply raise pre-sleep cognitive arousal.
- Classical conditioning turns the bed and the bedtime routine into learned cues for alert wakefulness rather than for sleep onset.
- Threat monitoring, clock-checking, and effortful trying to sleep are paradoxical behaviors that directly maintain wakefulness.

DIFFERENTIAL & COMORBIDITY

- Screen for obstructive sleep apnea using **STOP-BANG**, plus restless legs syndrome, both of which are frequently missed contributors.
- Delayed sleep-wake phase disorder presents as sleep-onset insomnia with normal sleep when the schedule is allowed to run free.
- Insomnia is bidirectional with depression, anxiety, and PTSD, and treating the insomnia improves the comorbid disorder as well.
- Evaluate substances: alcohol, caffeine, nicotine, stimulants, and SSRI-related sleep disruption are common and reversible contributors.
- Insomnia is an independent suicide risk factor, and nightmares with short sleep raise risk beyond depression severity alone.

Treatment EVIDENCE-BASED MANAGEMENT

PHARMACOLOGIC

- Medication is second-line: **CBT-I** should be offered first, with pharmacotherapy used short-term or as a targeted adjunct.
- Dual orexin receptor antagonists **lemborexant 5-10 mg** and **suvorexant 10-20 mg** are preferred for sleep-maintenance insomnia.
- **Zolpidem 5-10 mg** and **eszopiclone 1-3 mg** work short-term; counsel on complex sleep behaviors and next-day psychomotor impairment.
- **Doxepin 3-6 mg** and **ramelteon 8 mg** are non-scheduled options with favorable safety profiles in older adults.
- Avoid antihistamines, antipsychotics, and long-term benzodiazepines; **trazodone 25-100 mg** is widely used but weakly supported.

PSYCHOTHERAPY

- **CBT-I** over 4 to 8 sessions is first-line, matching hypnotics acutely and clearly outperforming them at 6 to 12 month follow-up.
- **Sleep restriction therapy** raises sleep efficiency by limiting time in bed to actual sleep time plus roughly 30 minutes.
- **Stimulus control** reserves the bed for sleep and sex, with the patient leaving bed when awake beyond about 15 to 20 minutes.
- Cognitive restructuring targets catastrophic sleep beliefs, while relaxation training addresses residual somatic arousal.
- Digital **CBT-I** programs achieve effects approaching in-person therapy and help offset the shortage of trained providers.

ADJUNCT & SUPPORTIVE

- Use consensus sleep diaries and the **Insomnia Severity Index** to track outcomes, where a 7-point ISI drop is clinically meaningful.
- Actigraphy or a wearable can supplement diaries, while polysomnography is reserved for suspected apnea or periodic limb movements.
- Optimize circadian inputs: morning outdoor light, evening dimming, a fixed wake time, exercise timing, and a cool dark bedroom.
- Taper hypnotics gradually while delivering **CBT-I**, which prevents rebound insomnia and reduces the risk of reinstatement.
- Treat comorbid apnea, chronic pain, and nocturia concurrently, since insomnia rarely resolves while these remain unaddressed.

CLINICAL PEARLS

- Treat insomnia in its own right; it does not simply remit when depression lifts.
- Restricting time in bed feels wrong to patients and outperforms every other step.
- Sleepy on the couch but wide awake in bed means conditioned arousal.

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NOTE

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