

COMISA: The Underdiagnosis Continues

By: Sleep Institute
Publish date: July 8, 2025

As comorbid insomnia and OSA (COMISA) is recognized as a standalone condition, diagnostic approaches lack, resulting in high rates of underdiagnosis.

The sleep research field is evolving quickly, and there is increasing recognition of the frequent co-occurrence of insomnia and obstructive sleep apnea (OSA) — a condition now referred to as COMISA (comorbid insomnia and sleep apnea).

Studies indicate that 30–50% of individuals with OSA report insomnia symptoms, while 30–40% of those with insomnia meet diagnostic criteria for OSA.¹ But despite how common it is and its significant health implications, COMISA remains underdiagnosed in clinical practice.

COMISA: More than coincidental co-occurrence

COMISA is not simply the random co-occurrence of two common sleep disorders. Recent research suggests a unique relationship between insomnia and OSA that causes specific symptoms which differ from either condition on its own, requiring specialized diagnostic approaches.² The relationship appears to be bidirectional, with each condition potentially worsening the other through various mechanisms.

Specifically, when a patient repeatedly stops breathing during sleep because of OSA, it can trigger or worsen a state of conditioned hyperarousal — one of the key symptoms of insomnia. On the other hand, ongoing insomnia may worsen or contribute to OSA by disrupting the nervous system and making breathing less stable during sleep.²

“Despite some changes in classification frameworks identifying COMISA as a unique condition, many physicians still view insomnia as a symptom of other underlying conditions.”

Classification and diagnostic framework challenges

Traditionally, when insomnia is observed alongside another medical condition, it is perceived to be a symptom of that condition rather than as an independent disorder. So, when a patient presents with both OSA and insomnia symptoms, the diagnostic focus is typically on OSA, and the coexisting insomnia symptoms are often deprioritized. The assumption is that the insomnia symptoms will resolve once the other medical condition is successfully treated.³

Some progress was made in 2013 with the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), which revised how insomnia is classified. The manual moved away from labeling insomnia as either “primary” (existing on its own) or “secondary” (a symptom of another condition). Instead, it now recognizes insomnia as a distinct condition that can occur independently or alongside other medical or psychological conditions.⁴

In the following year, the International Classification of Sleep Disorders, Third Edition (ICSD-3) shifted its approach to insomnia classification. The ICSD-3 eliminated the distinction between primary and secondary insomnia, consolidating all insomnia diagnoses under the term “chronic insomnia disorder.”⁵ This acknowledges that insomnia often coexists with other medical conditions but should be diagnosed as a distinct disorder regardless, rather than assuming a hierarchical relationship.

More recently, the International Classification of Diseases, Eleventh Revision (ICD-11) was endorsed by the World Health Organization and came into effect globally on January 1, 2022. This guideline replaced the prior differentiation between “organic” and “non-organic” insomnia with a new comprehensive category of “chronic insomnia”. This change results in broad alignment among the ICD-11, ICSD-3 and the DSM-5 in the recognition of insomnia as a standalone condition.⁶

The changes in both classification systems reflect growing evidence that insomnia symptoms may not necessarily improve when treating only the presumed “primary” condition. In COMISA patients, studies have shown that addressing only the sleep apnea component does not necessarily resolve insomnia symptoms.⁷

Yet despite this update in classification frameworks, clinical implementation remains inconsistent, with many physicians still viewing insomnia as a symptom of other underlying conditions.

“The unique diagnostic procedures for insomnia and OSA increase the risk of COMISA being properly identified.”

Overlapping symptoms and diagnostic confusion

One of the most significant challenges in diagnosing COMISA is the substantial overlap in symptoms

between insomnia and OSA.⁸ Both conditions can present with:

- Difficulties falling asleep
- Frequent awakenings during the night
- Poor sleep quality
- Daytime fatigue and impaired functioning

This symptom overlap creates considerable confusion, as physicians may attribute all sleep complaints to whichever condition they identify first.⁸ For example, a patient diagnosed with OSA may have difficulty falling asleep attributed solely to sleep apnea, when in fact they may have comorbid insomnia disorder requiring separate treatment.

Adding to this complexity, the diagnostic procedures for each condition differ substantially. OSA diagnosis typically requires polysomnography or home sleep apnea testing, while insomnia diagnosis relies primarily on patient self-reporting with clinical assessment composed of history taking and the recording of sleep diaries.⁷ This procedural difference can lead to one condition being thoroughly evaluated while the other receives substantially less attention.

Patient factors adding to diagnostic challenges

Patient-related factors add to the difficulty of diagnosing COMISA. Studies show that men and women often present OSA differently—men typically report classic OSA symptoms like snoring and breathing pauses, while women more often report insomnia symptoms.⁹

These gendered differences can lead to underdiagnosis of COMISA in women, as their complaints may overshadow signs of OSA.¹² Cultural and psychosocial influences also affect how symptoms are reported. Patients may focus on what they believe are more valid or serious complaints, sometimes leaving out key details needed for an accurate diagnosis.

The consequences of misdiagnosis or non-diagnosis

Misdiagnosing or failing to treat COMISA can have serious health consequences. Patients with COMISA are

at increased risk for cardiovascular disease, depression, anxiety, and reduced quality of life.¹ Recent population-based studies have also reported that people with COMISA have a 50–70% increased risk of all-cause mortality over 10–20 years of follow-up compared to people with neither condition. Additionally, the combination of both conditions (COMISA) was associated with an elevated mortality risk.¹⁰

Moreover, untreated insomnia can negatively affect adherence to continuous positive airway pressure (CPAP) therapy, the standard treatment for OSA. Studies have shown that insomnia symptoms predict lower CPAP adherence, leading to poorer treatment outcomes.¹¹

People with co-morbid insomnia will likely spend extended periods awake wearing CPAP masks at night, making them more likely to notice and experience CPAP-related side effects. As a result, they are more likely to remove the CPAP mask or abandon CPAP therapy completely.¹⁰

Ultimately, if both conditions aren't properly diagnosed and treated together, patients may continue to suffer symptoms and health risks—even if they're getting treatment for one of the conditions.

Advancing diagnostic approaches

Improving how COMISA is diagnosed requires several coordinated efforts. One key step is creating integrated screening tools that can detect both insomnia and OSA

symptoms at the same time, especially in primary care and sleep clinics where most patients first seek help.

Alongside this, healthcare providers—particularly in primary care—need better training and education on how COMISA presents and why it's important to recognize both conditions together.

Finally, stronger collaboration among primary care providers, sleep specialists, and mental health professionals is essential. Too many patients must navigate a complex and frustrating experience visiting individual providers who each look at only one aspect of their sleep without anyone putting the pieces together. This sadly results in people continuing to struggle without the help they need and seek. Care teams have a golden opportunity to provide more comprehensive assessments and deliver treatment plans that address the full scope of a patient's sleep issues.

Bottomline

Diagnosing COMISA remains a significant challenge in sleep medicine, largely due to overlapping symptoms, inconsistent assessment methods, and a long-standing tendency to treat insomnia as a secondary symptom rather than a standalone disorder.

However, research clearly shows that insomnia is a clinical condition with its own causes and health impacts — especially when it coexists with OSA.¹³ Properly recognizing insomnia as its own disorder is essential for the accurate diagnosis and effective treatment of COMISA.

References

- 1 Sweetman A. Co-morbid Insomnia and Sleep Apnoea (COMISA): Latest Research from an Emerging Field. *Curr Sleep Medicine Rep* 9, 180–189 (2023). <https://doi.org/10.1007/s40675-023-00262-9>
- 2 Meira E Cruz M, Sweetman A. Comorbid insomnia and sleep apnea (COMISA): from research to clinical practice. *Semin Respir Crit Care Med*. 2025 Apr 21. doi:10.1055/a-2591-5664
- 3 Sateia, M.J. (2014). International classification of sleep disorders. *Chest*, 146(5), 1387–1394. <https://doi.org/10.1378/chest.14-0970>
- 4 Benca RM, Buysse DJ. Reconsidering insomnia as a disorder rather than just a symptom in psychiatric practice. *J Clin Psychiatry*. 2018;79(1):me17008ah1c. doi:10.4088/JCP.me17008ah1c
- 5 Rosenberg RP, Benca R, Doghramji P, et al. A 2023 update on managing insomnia in primary care: insights from an expert consensus group. *Prim Care Companion CNS Disord*. 2023;25(1):22nr03385. <https://doi.org/10.4088/PCC.22nr03385>
- 6 Reimann D, Espie CA, Altena E, et al. The European Insomnia Guideline: An update on the diagnosis and treatment of insomnia 2023. *Journal of Sleep Research*, 32(6), e14035. <https://doi.org/10.1111/jsr.14035>
- 7 Luyster FS, Buysse DJ, Strollo PJ Jr, et al. Comorbid insomnia and obstructive sleep apnea: challenges for clinical practice and research. *J Clin Sleep Med*. 2010;6(2):196–204.
- 8 Wulterkens BM, Hermans LWA, Fonseca P, et al. Sleep structure in patients with COMISA compared to OSA and insomnia. *J Clin Sleep Med*. 2023;19(6):1051–1059. <https://doi.org/10.5664/jcsm.10500>
- 9 Sweetman A, Lack L, Bastien C. Co-morbid insomnia and sleep apnea (COMISA): prevalence, consequences, methodological considerations, and recent randomized controlled trials. *Brain Sci*. 2019;9(12):371. <https://doi.org/10.3390/brainsci9120371>
- 10 Sweetman A, Frank O, Stocks N, et al. General practitioner management of comorbid insomnia and sleep apnoea. *Aust J Gen Pract*. 2023;52(9):607–612. <https://doi.org/10.31128/AJGP-12-22-6648>
- 11 Ong JC, Crawford MR, Wallace DM. Sleep apnea and insomnia: emerging evidence for effective clinical management. *Chest*. 2021;159(5):2020–2028. <https://doi.org/10.1016/j.chest.2020.12.002>
- 12 Grote, L., McNicholas, W. T., Hedner, J., & ESADA Study Group. (2019). Sex differences in obstructive sleep apnoea and comorbid insomnia: Results from the European Sleep Apnoea Database (ESADA). *Sleep Medicine*, 60, 53–60. <https://doi.org/10.1016/j.sleep.2019.03.003>
- 13 Ragnoli, B., Pochetti, P., Raie, A., & Malerba, M. (2021). Comorbid Insomnia and Obstructive Sleep Apnea (COMISA): Current Concepts of Patient Management. *International Journal of Environmental Research and Public Health*, 18(17), 9248. <https://doi.org/10.3390/ijerph18179248>