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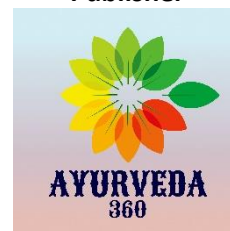
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Nidra as Bhūtadhātrī: An Integrative Analytical Study of Ayurvedic, Yogic, and Neuroscientific Perspectives

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ABSTRACT

Background: *Nidra* (sleep) is described in Ayurveda as one of the *Trayopastambha* (three pillars of life), alongside *Ahara* (diet) and *Brahmacharya* (regulated conduct) [1]. It is revered as *Bhūtadhātrī* (the sustainer of beings), essential for nourishment, strength, immunity, mental clarity, fertility, and longevity [2]. Classical texts emphasize that disturbances in *Nidra* lead to disease, premature aging, cognitive impairment, infertility, and even early death [3]. While modern science views sleep as a neurophysiological process vital for homeostasis, Ayurveda and Yoga provide a more holistic explanation, correlating *Nidra* with sensory withdrawal (*pratyāhāra*) and balance of *Prāṇavāyu*.

Aim: This study aims to critically analyze the concept of *Nidra* in Ayurveda, its yogic correlates, and neuroscientific explanations, to develop an integrative framework of understanding.

Methodology: A conceptual and analytical study was undertaken through textual review of *Caraka Saṃhitā*, *Suśruta Saṃhitā*, and *Aṣṭāṅga Hṛdaya* regarding *Nidra*. Yogic literature, including *Patañjali Yoga Sūtra*, was reviewed for correlations with *pratyāhāra* and *prāṇāyāma*. Contemporary literature on sleep physiology and neuroscience was analyzed to identify parallels with Ayurvedic and Yogic descriptions.


Results: Ayurveda describes *Nidra* as arising when the fatigued mind and senses withdraw from their objects [4]. Its benefits, types, causes of derangement, and regulation of day and night sleep are elaborated in classical texts [5]. Yoga conceptualizes *Nidra* as involuntary

pratyāhāra, while practices like *prāṇāyāma* consciously facilitate this process. Neuroscience validates these mechanisms through studies on sensory gating, cortical deactivation, and vagal tone modulation.


Conclusion:

Nidra is not merely passive rest but an active restorative process, sustaining both body and mind. Bridging Ayurveda, Yoga, and neuroscience offers a holistic framework for understanding sleep and provides therapeutic insights for insomnia and lifestyle disorders.

Keywords: Nidra, Ayurveda, Pratyāhāra, Prāṇavāyu, Prāṇāyāma, Sleep Neuroscience

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In Ayurveda, *Nidra* (sleep) is regarded as one of the **Trayopastambha** (three supporting pillars of life), along with *Ahara* (food) and *Brahmacharya* (regulated lifestyle). Caraka states that these three sustain the body in its natural state, just as pillars support a building [1]. Among them, *Nidra* is described as *Bhūtadhātṛī* (the mother that nourishes all living beings), highlighting its central role in maintaining physical and mental well-being [2]. Adequate and timely sleep is considered essential for happiness, nourishment, strength, fertility, knowledge, and longevity, whereas disturbed sleep results in sorrow, emaciation, sterility, impaired cognition, and even death [3].

Classical Ayurvedic texts define sleep as a physiological state that arises when the mind (*manas*) and senses (*indriyas*) become fatigued and withdraw from their respective objects: “*Yadā tu manasi klānte karmātmānaḥ klamānvitāḥ, Viṣayebhyo nivartante tadā svapiti mānavaḥ*” [4]. This explanation anticipates the modern neuroscientific view of sleep as a state of **sensory withdrawal and cortical deactivation** following fatigue.

Acarya Caraka elaborates seven types of sleep, including those caused by *tamas*, *kapha*, mental exertion, external factors, disease, and the natural sleep that

occurs at night (*rātrisvabhāvaprabha nidra*), which is considered the most beneficial [5]. Further, he prescribes rules regarding daytime sleep, allowing it in specific seasons and conditions (such as summer or debilitating diseases), but prohibiting it in others to prevent *kapha* and *pitta* aggravation [6]. He also identifies causes of insomnia, including anxiety, anger, grief, excessive *vata*, fasting, uncomfortable bedding, and improper lifestyle [7]. These observations show remarkable overlap with modern concepts of sleep hygiene and stress-induced insomnia.

Yogic literature provides another dimension. *Patañjali Yoga Sūtra* defines *Nidra* as a state of mental modification (*citta vṛtti*) characterized by absence of cognition: “*Abhāvapratyayālambanā vṛttir nidrā*” (*Yoga Sūtra* 1/10) [8]. While in Ayurveda *Nidra* is largely physiological, yoga regards it as a psychological state akin to involuntary *pratyāhāra* (withdrawal of senses). Furthermore, *pratyāhāra*, as the fifth limb of *Aṣṭāṅga Yoga*, represents a conscious withdrawal of senses, which is functionally similar to the natural sensory withdrawal seen in *Nidra*. This connection forms the basis for therapeutic practices like *yoganidra* and guided relaxation techniques, which consciously simulate and regulate the process of sleep.

The role of *vāyu* is also central.

When disturbed, it produces restlessness, anxiety, and sleeplessness; when balanced, it facilitates calmness and initiation of Nidra [9]. Practices like *prāṇāyāma* regulate *prāṇavāyu* and support sleep by enhancing parasympathetic dominance. Modern studies confirm that slow, deep breathing reduces sympathetic overactivity, promotes vagal tone, and induces the neurophysiological conditions required for sleep onset [10].

From the modern scientific perspective, sleep is defined as a naturally recurring, reversible state of reduced responsiveness to external stimuli, with characteristic physiological patterns including altered brainwave activity, autonomic regulation, and hormonal changes [11]. It is crucial for energy restoration, memory consolidation, tissue repair, and immune regulation. Disturbances in sleep are strongly associated with cardiovascular disease, obesity, diabetes, psychiatric disorders, and reduced quality of life [12].

Thus, both Ayurveda and modern science recognize sleep as fundamental to health, though they approach it through different explanatory models. Ayurveda integrates Nidra into the holistic framework of *doṣa*, *dhātu*, and *manas*, while modern science emphasizes neural,

endocrine, and behavioral regulation.

Yogic philosophy adds a further psychological and spiritual dimension through *pratyāhāra* and *prāṇāyāma*.

Research Gap: Although there is abundant literature on Nidra in both Ayurveda and modern science, few studies attempt to integrate these perspectives with yogic philosophy. The present study aims to fill this gap by critically analyzing the concept of Nidra from Ayurveda, correlating it with Yoga and neuroscience, and proposing an integrative framework for understanding sleep in both health and disease.

Methodology

This research is primarily a **conceptual and analytical study** based on a critical review of Ayurvedic, Yogic, and modern scientific literature on sleep. The methodology involved the following steps:

1. Ayurvedic Source – Caraka

Samhitā: The *Caraka Samhitā* was taken as the primary and authoritative classical reference for understanding Nidra. Specific chapters such as *Sūtrasthāna 21 (Ashtāunindītiya Adhyāya)* and other related sections were critically analyzed to extract definitions, classifications, causative factors, benefits, and pathological variations of Nidra.

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Commentaries on Caraka were also consulted where necessary for interpretative clarity.

2. **Yogic Correlation:** Yogic texts, especially the *Patañjali Yoga Sūtra*, were analyzed to identify parallels between Nidra, *pratyāhāra*, and associated practices like *prāṇāyāma* and *yoganidra*. This helped in viewing Nidra not only as a physiological process but also as a psychological and spiritual state.
3. **Modern Scientific Literature:** Contemporary research articles, reviews, and standard scientific texts in physiology and neuroscience were reviewed to explore the mechanisms, architecture, and therapeutic importance of sleep. Electronic databases such as PubMed, Scopus, and Google Scholar were searched using keywords including “sleep physiology,” “Ayurveda Nidra,” “Yoga Nidra,” and “sleep neuroscience.”
4. **Comparative Analysis:** A thematic comparison was undertaken between the Caraka Saṃhitā descriptions, Yogic perspectives, and modern scientific findings. Similarities and differences were systematically

documented to highlight overlaps, divergences, and areas of complementarity.

5. **Synthesis:** The insights from Caraka Saṃhitā, Yogic literature, and neuroscience were synthesized into an integrative framework to assess the relevance of Nidra in modern preventive and therapeutic contexts, particularly in conditions such as insomnia, stress-related disorders, and lifestyle diseases.

Results

The analysis of Nidra across Ayurvedic, Yogic, and modern scientific frameworks revealed several key insights.

1. Nidra in Caraka Saṃhitā

Caraka defines Nidra as a natural state that arises when the mind and senses withdraw from their objects due to fatigue: “*Yadā tu manasi klānte karmātmānaḥ klamānvitāḥ, Viṣayebhyo nivartante tadā svapiti mānavaḥ*” (Sūtrasthāna 21/35) [10]. This description corresponds with the modern concept of sleep as a state of **sensory withdrawal and cortical rest**.

Caraka classifies Nidra into **seven types**:

1. *Tamobhāvaja* – due to predominance of *tamas*.
2. *Śleṣmasamudbhavā* – induced by *kapha* dominance.
3. *Manahśarīraklāntija* – due to mental and physical exhaustion.

4. *Āgantukī* – caused by external factors.
5. *Vyādhija* – associated with diseases.
6. *Rātrisvabhāvaprabha* – natural physiological sleep at night.
7. *Vyapanna nidra* – pathological disturbances [11].

Among these, *Rātrisvabhāvaprabha Nidra* is considered the most beneficial for health. Caraka further notes that timely and sufficient sleep promotes happiness, nourishment, strength, fertility, knowledge, and longevity, while improper sleep leads to sorrow, emaciation, sterility, impaired cognition, and even death [12].

Acarya Caraka also discusses **sleep hygiene**, prohibiting daytime sleep except in summer or in cases of debility. He identifies causes of insomnia such as anxiety, grief, anger, vata aggravation, fasting, or improper bedding, which closely parallel modern observations [13].

2. Yogic Correlation

In *Yoga Sūtra* 1/10, Acarya Patañjali defines Nidra as a mental state based on the cognition of absence: “*Abhāvapratyayālambanā vṛttir nidrā*”. This frames Nidra as a psychological phenomenon, different from wakefulness and dream, yet still a modification of the mind (*citta vṛtti*).

Yoga also introduces the concept of **pratyāhāra** (sensory withdrawal), which is functionally similar to the natural withdrawal of senses seen in Nidra. Practices like *yoganidra* simulate this process consciously, offering therapeutic relaxation without complete loss of awareness. The role of *prāṇavāyu* in initiating and sustaining Nidra is highlighted, as imbalance leads to sleeplessness while regulation through *prāṇāyāma* supports sleep [14].

3. Modern Scientific Findings

Modern neuroscience describes sleep as a reversible state of reduced responsiveness, characterized by changes in brain wave patterns, autonomic regulation, and hormonal balance [15]. Two primary states—NREM (non-rapid eye movement) and REM (rapid eye movement)—alternate cyclically during sleep, each serving restorative and cognitive functions.

Sleep has been shown to regulate immunity, metabolism, learning, and emotional stability. Disturbances are linked with obesity, cardiovascular disease, psychiatric illness, and reduced quality of life [16]. Factors such as stress, irregular lifestyle, poor sleep hygiene, and neurological dysfunction are recognized as major contributors to insomnia, echoing Caraka’s observations on the role of mental states and improper routines [17].

Breathing practices and guided relaxation, such as *yoganidra*, have been scientifically validated to improve sleep quality by reducing sympathetic activity and enhancing vagal tone [18]. This confirms the overlap between Yogic practices and modern therapeutic approaches.

Discussion

The findings from this analytical study underscore the depth and multidimensionality of Nidra as conceptualized in Ayurveda, correlated with Yogic philosophy, and validated by modern neuroscience. While each framework presents a unique lens, their intersections reveal an integrative model of sleep that is both preventive and therapeutic.

Nidra as a Physiological Necessity: Caraka's Perspective vs. Modern Science

Caraka's description of Nidra as a natural withdrawal of the senses due to fatigue (*klānta manas* and *klamānvitā indriyāṇi*) aligns with the modern neurobiological explanation of sleep as a state of reduced sensory responsiveness governed by homeostatic drive and circadian rhythm. Caraka's assertion that Nidra provides nourishment, strength, fertility, and longevity finds support in recent studies demonstrating the role of sleep in immune regulation, hormonal

balance, neurocognitive performance, and reproductive health.

Importantly, Caraka's classification of Nidra into seven types reflects a sophisticated understanding of both physiological and pathological sleep. For instance, *Śleṣmasamudbhavā Nidra* (Kapha-induced sleep) can be correlated with hypersomnia linked to metabolic syndrome, while *Manahśarīraklāntija Nidra* (sleep from exhaustion) resembles compensatory sleep after fatigue or stress. Such typology predates modern sleep medicine's distinction between primary and secondary sleep disorders.

Nidra and Mental Health

Caraka's observation that disturbances of Nidra lead to sorrow, cognitive impairment, sterility, and even death highlights the seriousness of sleep deprivation. Modern psychiatry has established robust links between insomnia and mood disorders, particularly depression, anxiety, and suicidality. Likewise, his identification of mental causes of sleeplessness — worry, anger, grief — mirrors current stress-diathesis models of insomnia. Thus, Ayurvedic insights provide an early psychosomatic framework for understanding sleep pathology.

Yogic Contribution: From Nidra to Yoganidra

Patañjali's description of Nidra as a mental modification (*citta vṛtti*) based on absence (*abhāvapratyayālambanā*) enriches the physiological model by introducing a psychological dimension. This interpretation enables the evolution of *Yoganidra* — a state of conscious relaxation where awareness is maintained even while experiencing deep rest.

Clinical research has shown that *Yoganidra* reduces stress, lowers blood pressure, enhances vagal tone, and improves sleep quality in patients with insomnia. It is particularly relevant in psychosomatic and stress-induced disorders where conventional pharmacotherapy has limitations. Thus, Yogic understanding bridges Caraka's physiological view and modern psychophysiological approaches.

Comparative Insights: Ayurveda, Yoga, and Neuroscience

When compared, three convergences emerge:

1. **Role of Mental States:** Ayurveda emphasizes worry, grief, and anger as causes of insomnia, Yoga highlights *citta vṛttis*, and neuroscience confirms hyperarousal of cortical and limbic circuits as insomnia triggers.
2. **Therapeutic Modulation:** Ayurveda prescribes regulation of diet, lifestyle, and avoidance of

daytime sleep; Yoga prescribes *prāṇāyāma* and *Yoganidra*; modern medicine prescribes sleep hygiene, CBT-I (Cognitive Behavioral Therapy for Insomnia), and relaxation training.

3. **Systemic Impact:** All three systems affirm that proper sleep regulates immunity, metabolism, cognition, and emotional balance.

This triangulation suggests that Nidra is a **multisystem regulator** rather than a passive rest.

Nidra in Preventive and Therapeutic Ayurveda

Caraka assigns Nidra a place among the *Trayopasthambha* (three pillars of health), alongside Ahara (diet) and Brahmacharya (regulated lifestyle). This classification underlines sleep's indispensability. Modern preventive medicine, which increasingly emphasizes lifestyle interventions, echoes this approach. Research on sleep hygiene, circadian alignment, and stress reduction demonstrates parallel preventive value.

From a therapeutic perspective, Caraka's advice on avoiding day sleep except in summer aligns with chronobiology, which warns against irregular sleep schedules. His recognition of Kapha-related excess sleep resembles hypersomnia, while Vata-predominant insomnia corresponds to anxiety-driven

sleeplessness. Thus, Ayurvedic nosology can complement modern sleep disorder classification.

Towards an Integrative Model

An integrative model of Nidra should combine:

- **Ayurvedic Foundations (Caraka):** classification of Nidra, etiological factors, preventive and therapeutic guidelines.
- **Yogic Practices:** conscious regulation of sleep–wake transitions via *Yoganidra*, *pratyāhāra*, and *prāṇāyāma*.
- **Neuroscience Evidence:** sleep architecture, circadian biology, and psychoneuroimmunological benefits.

Such a model can inform holistic protocols for managing insomnia, stress-related disorders, and lifestyle diseases. In clinical settings, combining Ayurvedic regulation of diet/lifestyle with Yogic relaxation and modern behavioral therapy may enhance outcomes and reduce reliance on pharmacological interventions.

Conclusion

The present study highlights the profound understanding of Nidra articulated in the *Caraka Saṃhitā*, its resonance with Yogic philosophy, and its

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validation through modern scientific research. Nidra, identified as one of the *Trayopasthambha* (three pillars of life), is not merely a passive state of rest but an essential physiological process that sustains health, cognition, and emotional stability. Caraka's detailed classification of Nidra types, causes, and consequences reflects a nuanced framework that remains relevant for clinical interpretation of sleep disorders today.

Yogic perspectives add a psychological dimension, conceptualizing Nidra as a *citta vṛtti* and evolving practical tools like *Yoganidra* that consciously regulate relaxation and awareness. Modern neuroscience further affirms these insights by demonstrating the systemic benefits of sleep, including neurocognitive recovery, immune regulation, and metabolic balance.

An integrative approach combining Ayurvedic preventive principles, Yogic practices, and modern behavioral strategies offers a promising framework for holistic management of insomnia, stress-induced conditions, and lifestyle disorders. By bridging classical wisdom and contemporary science, Nidra can be repositioned as a cornerstone of both preventive health and therapeutic intervention.

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