

Nidra as Trayopastambha: Classical Insights and Modern Scientific Evidence

Authors

Dr. Heena Taneja^{1*}, Dr. Sudesh Kumar Bhambu², Dr. Anupam Pathak³, Dr. Rishu Kumar Sharma⁴

¹Post Graduate Scholar, Department of *Swasthavritta Evum Yoga*, Sriganganagar College of Ayurvedic Science & Hospital, Tania University, Sriganganagar, Rajasthan, India.

²Associate Professor, Department of *Swasthavritta Evum Yoga*, Sriganganagar College of Ayurvedic Science & Hospital, Tania University, Sriganganagar, Rajasthan, India.

³Professor and Head, Department of *Swasthavritta Evum Yoga*, Sriganganagar College of Ayurvedic Science & Hospital, Tania University, Sriganganagar, Rajasthan, India.

⁴Principal, Sriganganagar College of Ayurvedic Science & Hospital, Tania University, Sriganganagar, Rajasthan, India.

***Corresponding Author: Dr. Heena Taneja**
ORCID ID: 0009-0004-8368-8900

Received: Aug 12, 2026

Accepted: Sep 09, 2026

Published: Sep 16, 2026

ABSTRACT

Sleep is an indispensable biological process that plays a crucial role in maintaining physical, mental, and emotional well-being. Despite remarkable advances in healthcare, sleep-related disorders have emerged as a major public health concern due to changing lifestyles, increasing psychological stress, excessive screen exposure, and disruption of natural circadian rhythms. Ayurveda, the ancient Indian system of medicine, recognized the importance of sleep thousands of years ago and described Nidra as one of the three fundamental pillars of life (*Trayopastambha*), along with *Ahara* and *Brahmacharya*. Classical *Ayurvedic* texts emphasize that proper sleep promotes happiness, nourishment, strength, longevity, intellect, and overall health, whereas disturbed or inadequate sleep contributes to disease and diminished quality of life.

Modern scientific research has increasingly validated the physiological significance of sleep in neurocognitive functioning, hormonal regulation, immune competence, metabolic balance, and psychological health. Emerging evidence suggests that chronic sleep deprivation is associated with obesity, diabetes mellitus, cardiovascular diseases, anxiety, depression, and impaired cognitive performance. Interestingly, many of these observations parallel the classical *Ayurvedic* understanding of *Nidra* and its influence on bodily and mental functions.

The present review aims to explore the concept of *Nidra* as described in Ayurvedic literature and examine its relevance in the light of contemporary scientific evidence. The article further discusses the growing challenges to healthy sleep in the digital age, the relationship between sleep and

lifestyle disorders, and the potential role of Ayurvedic principles in promoting healthy sleep practices. An integrative understanding of Nidra may contribute significantly to preventive healthcare and holistic well-being in modern society.

Keywords: Nidra, *Trayopastambha*, Sleep, *Swasthavritta*, Sleep Hygiene, Circadian Rhythm, Lifestyle Disorders, *Ayurveda*

INTRODUCTION

Health has always been regarded as a state of harmony rather than merely the absence of disease. *Ayurveda*, one of the world's oldest systems of medicine, emphasizes the preservation of health as its foremost objective. The classical principle "*Swasthasya Swasthya Rakshanam*" highlights the importance of maintaining health before the onset of illness. Among the various measures described for sustaining health, particular significance has been accorded to *Ahara* (diet), Nidra (sleep), and *Brahmacharya* (regulated lifestyle), collectively known as *Trayopastambha* or the three supporting pillars of life.

Among these pillars, *Nidra* occupies a unique position because it is a natural restorative process essential for both the body and mind. Sleep is not merely a period of inactivity; rather, it is a dynamic physiological state during which numerous processes related to repair, recovery, memory consolidation, hormonal regulation, and energy restoration take place. Ayurveda recognized this profound role of sleep centuries before the development of modern neuroscience and sleep medicine. Classical texts describe Nidra as a fundamental requirement for maintaining physical strength, mental clarity, emotional stability, reproductive health, and longevity.

In the contemporary era, sleep has become one of the most neglected aspects of health. Rapid urbanization, technological advancement, demanding work schedules, academic pressure, shift duties, and excessive dependence on electronic devices have significantly altered human sleeping patterns. Late-night screen exposure, social media engagement, irregular meal timings, and psychological stress have contributed to a growing burden of sleep disturbances across all age groups. As a result, sleep disorders such as insomnia, fragmented sleep, delayed sleep phase syndrome, and poor sleep quality are increasingly prevalent worldwide.

Scientific evidence accumulated over the past few decades has demonstrated that inadequate sleep has far-reaching consequences on human health. Sleep deprivation has been associated with impaired cognitive performance, reduced immunity, obesity, insulin resistance, diabetes mellitus, hypertension, cardiovascular diseases, mood disorders, and decreased quality of life. The growing recognition of sleep as a determinant of health has led researchers to investigate the physiological mechanisms underlying sleep and its role in disease prevention.

Interestingly, many of these contemporary findings resonate with the principles described in Ayurveda. Classical *Ayurvedic* literature explains that proper sleep contributes to *Sukha*

(happiness), *Pushti* (nourishment), *Bala* (strength), *Vrishata* (virility), and *Jnana* (knowledge), whereas disturbed sleep leads to *Dukha* (misery), *Karshya* (emaciation), *Daurbalya* (weakness), and impaired mental functioning. Such descriptions reveal a remarkably comprehensive understanding of sleep and its impact on overall health.

The relevance of *Nidra* extends beyond individual well-being and has important public health implications. The increasing prevalence of lifestyle disorders, mental health challenges, and stress-related illnesses highlights the need for preventive approaches that address modifiable behavioral factors, including sleep. In this context, *Ayurvedic* concepts of *Nidra* offer valuable insights that may complement modern strategies for sleep promotion and disease prevention.

Furthermore, the digital age presents unique challenges to healthy sleep practices. Constant exposure to artificial light, prolonged use of smartphones and electronic gadgets, and disruption of natural biological rhythms have created a situation where sleep deprivation has become normalized. Revisiting the classical wisdom of Ayurveda may provide practical and sustainable approaches to restoring healthy sleep patterns and improving overall quality of life.

Therefore, the present review aims to critically examine the concept of *Nidra* as *Trayopastambha* in Ayurvedic literature and explore its relevance through contemporary scientific evidence. By integrating classical *Ayurvedic* knowledge with modern sleep science, the article seeks to highlight the enduring significance of sleep as a cornerstone of health and preventive medicine.

2. NIDRA IN CLASSICAL AYURVEDIC LITERATURE

Sleep has been regarded as a natural and indispensable phenomenon since ancient times. *Ayurvedic* scholars observed that every living being requires periods of rest to restore physical and mental equilibrium. Consequently, *Nidra* was accorded a place of exceptional importance and was included among the *Trayopastambha*, the three fundamental pillars that sustain life. The *Ayurvedic* understanding of sleep extends beyond mere rest and encompasses its role in nourishment, rejuvenation, growth, cognition, emotional stability, and longevity.

Concept and Definition of *Nidra*

Table 1. Classical Definitions of *Nidra* in *Ayurvedic* Literature

Classical Text	Description of <i>Nidra</i>
<i>Charaka Samhita</i>	Sleep occurs when the mind and sensory organs withdraw from their objects due to fatigue.
<i>Sushruta Samhita</i>	Sleep arises from predominance of Tamas and Kapha.

Classical Text Description of *Nidra*

*Ashtanga
Hridaya*

Sleep is a natural physiological process essential for health and restoration.

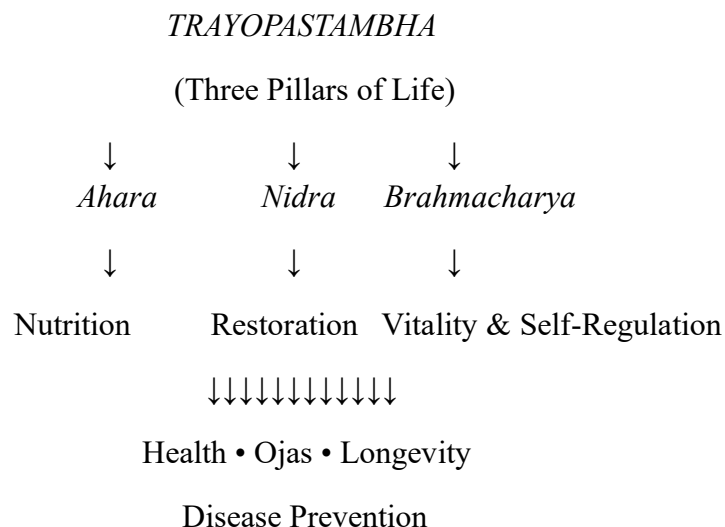
The term *Nidra* generally refers to a state in which the mind and sensory organs withdraw from their respective objects, resulting in a temporary suspension of external awareness. *Ayurveda* views sleep as a naturally occurring physiological process that enables restoration of bodily and mental functions.

Acharya Charaka explains that sleep occurs when the mind, exhausted by various activities, ceases to engage with sensory objects and the sensory organs become inactive. This state of disengagement leads to *Nidra*. Similarly, *Acharya Sushruta* describes *sleep* as a condition resulting from the predominance of *Tamas* and *Kapha*, producing relaxation and inactivity of the mind and body.

Unlike the modern view that often limits sleep to neurophysiological mechanisms, *Ayurveda* considers *Nidra* a multidimensional phenomenon involving the interaction of *Sharira* (body), *Manas* (mind), *Indriyas* (sense organs), *Doshas*, and *Gunas*. This holistic perspective highlights the intimate connection between mental tranquility and healthy sleep.

Nidra as Trayopastambha

Among the various contributions of *Ayurveda* to preventive medicine, the concept of *Trayopastambha* remains particularly relevant. *Ahara* provides nourishment, *Brahmacharya* preserves vitality, and *Nidra* facilitates restoration and rejuvenation. Just as a building depends upon strong pillars for support, the human body depends upon these three factors for maintaining health and longevity.



Classical texts repeatedly emphasize that the quality of an individual's life is significantly influenced by the quality of sleep. Proper sleep supports physiological functions and promotes physical strength, mental clarity, and emotional well-being. Conversely, disturbed sleep adversely affects multiple dimensions of health.

Acharya Charaka beautifully explains that happiness and misery, nourishment and emaciation, strength and weakness, virility and impotence, knowledge and ignorance, and even life and death are influenced by the quality and quantity of sleep. This statement reflects the profound understanding of sleep as a determinant of health and disease.

The inclusion of *Nidra* among the *Trayopastambha* demonstrates that *Ayurveda* considered sleep not merely as a passive biological necessity but as an active contributor to health maintenance and disease prevention. This concept closely aligns with contemporary recognition of sleep as a vital lifestyle factor influencing long-term health outcomes.

Benefits of Proper Sleep According to *Ayurveda*

Ayurvedic literature attributes numerous benefits to adequate and timely sleep. Proper sleep nourishes the body, enhances strength, improves complexion, supports growth and development, and maintains mental stability. It contributes to efficient functioning of the sense organs and promotes enthusiasm, alertness, and emotional balance.

Healthy sleep also plays an important role in maintaining digestive and metabolic functions. During sleep, the body undergoes restorative processes that support tissue repair and energy conservation. *Ayurveda* recognized these restorative effects long before the physiological mechanisms underlying them were understood.

Furthermore, *Nidra* is considered essential for maintaining *Ojas*, the vital essence responsible for immunity, vitality, and resilience. Disturbed sleep may gradually weaken *Ojas*, increasing susceptibility to physical and psychological disorders.

The significance of sleep becomes particularly evident in childhood, adolescence, pregnancy, and old age, where physiological demands are greater and restorative processes become increasingly important. Thus, *Ayurveda* advocates appropriate sleep according to age, constitution, season, and individual requirements.

Types of *Nidra* Described in *Ayurveda*

Table 2. Types of *Nidra* Described in *Ayurveda*

Type of <i>Nidra</i>	Description
<i>Ratri Swabhava Prabhava Nidra</i>	Natural physiological sleep occurring at night.

Type of <i>Nidra</i>	Description
<i>Shleshma Samudbhava Nidra</i>	Sleep caused by Kapha predominance.
<i>Mana-Sharira Shrama Sambhava Nidra</i>	Sleep resulting from physical and mental fatigue.
<i>Agantuki Nidra</i>	Sleep arising due to external causes.
<i>Vyadhi Anuvartini Nidra</i>	Sleep associated with disease conditions.
<i>Tamobhava Nidra</i>	Sleep associated with predominance of Tamas.

Ayurvedic scholars recognized that sleep may arise from different causes and therefore classified *Nidra* into various categories. This classification demonstrates a sophisticated understanding of both physiological and pathological sleep states.

1. *Ratri Swabhava Prabhava Nidra*

This is the natural sleep that occurs during the night due to the normal influence of time and biological rhythms. It is considered the healthiest and most desirable form of sleep because it supports restoration and maintenance of health.

2. *Shleshma Samudbhava Nidra*

This type of sleep results from increased *Kapha Dosha*. Excessive heaviness, lethargy, and drowsiness are characteristic features. Although sleep occurs naturally, excessive *Kapha* may lead to prolonged sleeping and reduced alertness.

3. *Mana-Sharira Shrama Sambhava Nidra*

Physical exertion and mental fatigue often produce sleep as a compensatory mechanism. *Ayurveda* recognized that the body naturally seeks rest following excessive activity. This type of sleep serves a restorative function and helps recover energy reserves.

4. *Agantuki Nidra*

This refers to sleep occurring due to external or unusual causes. Classical texts consider it potentially unfavorable because it may indicate underlying disturbances affecting normal physiological functioning.

5. *Vyadhi Anuvartini Nidra*

Certain diseases produce excessive sleepiness or altered sleep patterns. In such situations, sleep becomes a symptom accompanying pathological conditions rather than a normal restorative process.

6. *Tamobhava Nidra*

This form of sleep is associated with the predominance of *Tamas* and may occur in abnormal circumstances. It is generally regarded as less beneficial because it arises from mental and physiological imbalance rather than natural restorative needs.

The classification of *Nidra* illustrates *Ayurveda*'s ability to distinguish between healthy sleep and sleep associated with disease or imbalance. Such differentiation remains clinically relevant even today when evaluating various sleep disorders.

3. AYURVEDIC PHYSIOLOGY OF SLEEP

One of the most fascinating aspects of *Ayurveda* is its attempt to explain not only the importance of sleep but also the mechanisms responsible for its occurrence. Although classical scholars did not possess modern neurophysiological tools, their observations led to remarkably insightful explanations regarding the initiation and maintenance of sleep.

Role of *Tamas* in Sleep

According to *Ayurvedic* philosophy, the mind is governed by three *Gunas*—*Sattva*, *Rajas*, and *Tamas*. Among these, *Tamas* is associated with inertia, rest, heaviness, and withdrawal from activity.

During wakefulness, mental activity is predominantly influenced by *Rajas*, which promotes movement, perception, and engagement with the external environment. As the day progresses and fatigue accumulates, the influence of *Tamas* gradually increases. This shift facilitates disengagement from sensory stimuli and promotes the onset of sleep.

From a modern perspective, this concept may be interpreted as a transition from heightened cortical activity to a state of reduced sensory responsiveness and physiological relaxation.

Kapha Dominance and Sleep

Ayurveda associates sleep closely with *Kapha Dosha*. *Kapha* possesses qualities such as heaviness, stability, coolness, and unctuousness, all of which favor rest and relaxation.

During the evening and early night hours, *Kapha* predominance naturally increases, creating favorable conditions for sleep initiation. This observation remarkably parallels modern understanding of biological rhythms, which promote sleepiness during specific periods of the day.

Excessive *Kapha*, however, may lead to oversleeping, lethargy, and reduced motivation, whereas depletion of *Kapha* can contribute to difficulty initiating or maintaining sleep.

Vishranti of Mind and Sense Organs

A unique feature of the Ayurvedic explanation is the concept of *Vishranti* or functional rest. Sleep occurs when the mind and sensory organs temporarily withdraw from their continuous engagement with external stimuli.

Throughout the day, the senses are constantly processing visual, auditory, tactile, olfactory, and gustatory information. Continuous sensory activity eventually leads to fatigue. Sleep provides an opportunity for recovery, allowing both the mind and sensory apparatus to regain efficiency.

This understanding bears striking resemblance to modern concepts of neural recovery, sensory restoration, and cognitive maintenance occurring during sleep.

Doshic Imbalance and Sleep Disturbances

Ayurveda also explains sleep disturbances through the lens of *Dosha* imbalance.

Vata aggravation commonly manifests as difficulty falling asleep, interrupted sleep, anxiety, excessive thinking, and early morning awakening.

Pitta aggravation may produce disturbed sleep, vivid dreams, irritability, and awakening during the middle of the night.

Kapha aggravation often results in excessive sleepiness, prolonged sleeping hours, heaviness, and daytime drowsiness.

These observations continue to hold practical relevance and provide a personalized framework for understanding variations in sleep patterns among individuals.

The *Ayurvedic* physiology of sleep reflects a holistic understanding in which mental states, biological rhythms, sensory activity, and *doshic* balance collectively contribute to healthy Nidra. Such perspectives provide a valuable foundation for integrating traditional wisdom with contemporary sleep science.

4. MODERN SCIENTIFIC UNDERSTANDING OF SLEEP

Sleep is a highly organized and dynamic physiological process that is essential for maintaining overall health and well-being. Contrary to the earlier belief that sleep is simply a passive state of rest, modern research has established that it is an active biological phenomenon involving complex interactions among the nervous, endocrine, immune, and metabolic systems. During sleep, the body undergoes numerous restorative processes that are crucial for physical recovery, cognitive functioning, emotional regulation, and cellular repair.

Sleep Architecture: Understanding the Stages of Sleep

Modern sleep science divides sleep into two major categories: Non-Rapid Eye Movement (NREM) sleep and Rapid Eye Movement (REM) sleep. These stages occur cyclically throughout the night and together constitute normal sleep architecture.

Non-Rapid Eye Movement (NREM) Sleep

NREM sleep occupies approximately 75–80% of total sleep duration and is further divided into three stages.

Stage N1 represents the transition from wakefulness to sleep. It is characterized by light sleep, reduced muscle activity, and slowing of eye movements. Individuals can be easily awakened during this phase.

Stage N2 is a deeper stage of sleep in which heart rate and body temperature begin to decrease. Brain activity slows, and external awareness diminishes significantly.

Stage N3, also known as deep sleep or slow-wave sleep, is considered the most restorative phase. Tissue repair, muscle recovery, growth hormone secretion, and immune regulation occur predominantly during this stage.

Rapid Eye Movement (REM) Sleep

REM sleep is characterized by rapid eye movements, vivid dreaming, increased brain activity, and temporary muscle paralysis. It plays a vital role in memory consolidation, emotional processing, learning, and cognitive development.

A healthy adult typically experiences four to six sleep cycles each night, with each cycle lasting approximately ninety minutes. Disruption of these cycles can adversely affect both physical and mental health.

Circadian Rhythm and the Biological Clock

One of the most important discoveries in modern sleep science is the concept of circadian rhythm, the body's internal biological clock that regulates the sleep-wake cycle over a twenty-four-hour period.

The circadian rhythm is primarily controlled by the suprachiasmatic nucleus located in the hypothalamus. This biological clock responds to environmental cues, particularly light and darkness, helping synchronize physiological functions with the external environment.

Exposure to natural light during the day promotes wakefulness and alertness, whereas darkness stimulates the production of melatonin, a hormone secreted by the pineal gland that facilitates sleep onset.

Modern lifestyles, however, frequently interfere with this natural rhythm. Artificial lighting, prolonged screen exposure, night-shift work, and irregular sleep schedules can disrupt circadian regulation, leading to sleep disturbances and metabolic dysfunction.

Interestingly, this scientific understanding closely parallels the Ayurvedic emphasis on aligning daily activities with natural cycles through Dinacharya and Ratricharya.

Neurophysiology of Sleep

Sleep is regulated through the interaction of multiple neurotransmitters and brain structures.

Gamma-aminobutyric acid (GABA) promotes relaxation and sleep initiation by inhibiting wake-promoting neural pathways. Serotonin, melatonin, dopamine, orexin, and acetylcholine also contribute to the regulation of sleep and wakefulness.

During sleep, particularly deep sleep, the brain performs several critical functions including:

- Memory consolidation
- Removal of metabolic waste products
- Neural repair and restoration
- Learning enhancement
- Emotional processing

Recent studies have identified the glymphatic system, a waste-clearance mechanism that becomes highly active during sleep and helps remove potentially harmful substances from the brain. This finding highlights the restorative importance of sleep and provides scientific evidence for its role in maintaining neurological health.

Sleep and Systemic Health

The influence of sleep extends far beyond the nervous system. Adequate sleep supports hormonal balance, immune competence, cardiovascular function, metabolic regulation, and psychological well-being.

Sleep deprivation is associated with elevated cortisol levels, impaired glucose metabolism, increased inflammatory markers, reduced immunity, and altered appetite regulation. Chronic sleep loss can therefore contribute to obesity, diabetes mellitus, hypertension, cardiovascular diseases, and mood disorders.

These observations reinforce the growing recognition of sleep as a fundamental determinant of health and disease.

5. BRIDGING AYURVEDA AND MODERN SLEEP SCIENCE

Although *Ayurveda* and modern medicine emerged from different philosophical foundations, a closer examination reveals remarkable similarities in their understanding of sleep. While *Ayurveda* explains *Nidra* through concepts such as *Doshas*, *Gunas*, and sensory withdrawal, modern science describes sleep in terms of neurophysiology, hormonal regulation, and circadian biology. Despite differences in terminology, both systems acknowledge sleep as an essential process for restoration, recovery, and maintenance of health.

The integration of these perspectives can provide a more comprehensive understanding of sleep and strengthen the role of preventive healthcare.

Conceptual Correlation Between *Ayurveda* and Modern Science

The Ayurvedic concept of *Nidra* encompasses physiological, psychological, and behavioral dimensions that closely correspond with several findings from contemporary sleep research.

Table 3. *Ayurvedic* Concepts and Their Possible Modern Scientific Correlations

Ayurvedic Concept Possible Modern Scientific Interpretation

<i>Nidra</i>	Physiological sleep and restorative rest
<i>Tamas predominance</i>	Reduced cortical arousal and sensory activity
<i>Kapha dominance</i>	Parasympathetic predominance and relaxation
<i>Indriya Vishranti</i>	Sensory and neurological recovery
<i>Manas Vishranti</i>	Cognitive and emotional restoration
<i>Ratricharya</i>	Sleep hygiene and circadian regulation
<i>Nidranasha</i>	Insomnia and sleep deprivation
<i>Bala</i>	Physical resilience and vitality
<i>Ojas</i>	Immunological and physiological resilience

This correlation does not imply complete equivalence but highlights meaningful similarities between classical observations and modern scientific understanding.

***Nidra* and Cognitive Restoration**

Ayurveda emphasizes that proper sleep supports *Jnana* (knowledge), *Medha* (intellect), and mental stability. Modern neuroscience has confirmed that sleep plays a crucial role in learning, memory consolidation, attention, decision-making, and problem-solving.

Individuals who experience inadequate sleep often demonstrate impaired concentration, reduced productivity, slower reaction times, and diminished cognitive performance. These findings closely resemble Ayurvedic descriptions of the adverse effects of disturbed sleep on mental functioning.

***Nidra* and Emotional Health**

Mental well-being occupies an important place in both *Ayurveda* and modern psychology. Classical texts describe the role of proper sleep in promoting happiness, emotional balance, and mental clarity.

Scientific studies have shown that sleep deprivation is associated with irritability, anxiety, mood instability, stress, and depression. During sleep, particularly REM sleep, the brain processes emotional experiences and regulates psychological responses.

This parallel understanding highlights the intimate relationship between sleep and mental health.

***Nidra* and Immunity**

Ayurveda recognizes that adequate sleep contributes to strength, vitality, and resistance against disease. Contemporary research similarly demonstrates that sleep is essential for optimal immune function.

Sleep deprivation reduces immune responsiveness, increases inflammatory activity, and impairs the body's ability to fight infections. Individuals with chronic sleep disturbances often exhibit greater susceptibility to illness and slower recovery.

The *Ayurvedic* concept of maintaining *Ojas* through proper *Nidra* may therefore be viewed as conceptually related to the preservation of physiological resilience and immune competence.

***Nidra* and Metabolic Health**

One of the most significant developments in modern medicine is the recognition of sleep as a regulator of metabolic health. Research has established associations between inadequate sleep and obesity, insulin resistance, diabetes mellitus, and metabolic syndrome.

Ayurveda similarly describes that improper sleep can disturb bodily equilibrium and contribute to disease development. Although expressed through different theoretical frameworks, both systems acknowledge that healthy sleep is necessary for maintaining metabolic balance.

Towards an Integrative Understanding

The convergence of *Ayurvedic* wisdom and modern scientific evidence suggests that sleep should not be viewed merely as a passive period of rest. Rather, it represents a complex restorative process essential for physical, psychological, and social well-being.

Ayurveda offers valuable lifestyle-based approaches for promoting healthy sleep, while modern science provides detailed insights into the underlying biological mechanisms. Together, these perspectives create a strong foundation for developing holistic strategies aimed at improving sleep quality and preventing lifestyle-related disorders.

The growing burden of sleep disturbances in contemporary society further emphasizes the need for such integrative approaches. Understanding *Nidra* through both classical and scientific lenses may help bridge traditional knowledge and modern healthcare, ultimately contributing to more effective preventive and promotive health practices.

6.NIDRA IN THE DIGITAL AGE: EMERGING CHALLENGES TO HEALTHY SLEEP

Sleep has become one of the greatest casualties of modern lifestyle. While technological advancements have improved communication, productivity, and access to information, they have also contributed to significant disturbances in sleep behavior. Unlike previous generations whose daily routines were largely synchronized with natural cycles of light and darkness, modern individuals often remain exposed to artificial light and digital stimulation well into the night. Consequently, sleep deprivation and poor sleep quality have emerged as major public health concerns.

The widespread use of smartphones, tablets, laptops, and other electronic devices has dramatically altered sleeping habits across all age groups. Social media engagement, online entertainment, late-night work schedules, and continuous digital connectivity frequently delay bedtime and reduce total sleep duration. Many individuals sacrifice sleep to meet professional, academic, or social demands, often underestimating the long-term consequences of inadequate rest.

One of the most significant factors contributing to sleep disruption is exposure to blue light emitted from electronic screens. Blue light suppresses melatonin secretion, delays sleep onset and interferes with normal circadian rhythms. As a result, individuals may experience difficulty falling asleep, fragmented sleep, and reduced sleep quality. Such disruptions become particularly concerning when repeated over prolonged periods.

From an *Ayurvedic* perspective, these behaviors can be interpreted through the concept of *Prajnaparadha* (intellectual error), wherein individuals knowingly engage in practices that are harmful to health. Excessive screen exposure, irregular sleep schedules, and neglect of natural biological rhythms may be viewed as manifestations of *Prajnaparadha*, contributing to disturbance of physiological balance.

Another relevant Ayurvedic concept is *Asatmya Indriyarthā Samyoga*, which refers to improper utilization of sensory organs. Constant visual stimulation through screens, prolonged exposure to artificial light, excessive auditory input, and uninterrupted engagement with digital content may overload the sensory system and interfere with the natural process of sensory withdrawal necessary for sleep.

Psychological stress further compounds the problem. Academic competition, workplace demands, financial pressures, and information overload frequently lead to heightened mental activity during nighttime. Such conditions are often associated with aggravation of *Vata Dosha*, resulting in difficulty initiating sleep, frequent awakenings, excessive thinking, and non-restorative sleep.

Adolescents and young adults represent particularly vulnerable groups. Studies have consistently demonstrated a relationship between excessive screen time and poor sleep quality among students. Sleep deprivation in this population may adversely affect academic performance, emotional stability, memory, concentration, and overall well-being.

Healthcare professionals, shift workers, and individuals employed in occupations requiring irregular schedules also face significant sleep challenges. Repeated disruption of natural sleep-wake cycles can impair metabolic health, increase stress levels, and elevate the risk of chronic diseases.

The growing prevalence of digital sleep disruption highlights the relevance of Ayurvedic principles in contemporary society. By encouraging moderation, disciplined routines, and alignment with natural biological rhythms, Ayurveda provides practical guidance for addressing many of the sleep-related challenges encountered in the modern era.

7.NIDRA AND LIFESTYLE DISORDERS: A SWASTHAVRITTA PERSPECTIVE

The increasing burden of lifestyle disorders represents one of the most pressing healthcare challenges worldwide. Conditions such as obesity, type 2 diabetes mellitus, hypertension, cardiovascular diseases, anxiety, and depression are becoming increasingly common due to unhealthy dietary habits, sedentary lifestyles, chronic stress, and inadequate sleep. Among these factors, sleep has emerged as an important yet often overlooked determinant of health.

Ayurveda has long emphasized the role of *Nidra* in preserving physiological balance and preventing disease. Modern research now provides substantial evidence supporting this traditional understanding. Sleep disturbances are not merely symptoms of disease but may actively contribute to the development and progression of various pathological conditions.

Nidra and Obesity

Sleep plays a critical role in regulating appetite and energy metabolism. Chronic sleep deprivation alters the secretion of hormones involved in hunger and satiety, leading to increased food intake and weight gain.

Individuals who consistently sleep for shorter durations often demonstrate greater consumption of calorie-dense foods and reduced metabolic efficiency. These changes contribute to the development of obesity and related metabolic abnormalities.

From an Ayurvedic viewpoint, improper sleep may disturb Agni and promote Dosha imbalance, ultimately affecting tissue metabolism and contributing to disorders associated with Meda Dhatu.

Nidra and Type 2 Diabetes Mellitus

Several epidemiological studies have identified a strong association between inadequate sleep and impaired glucose metabolism. Sleep deprivation reduces insulin sensitivity and increases the risk of developing type 2 diabetes mellitus.

As Ayurveda recognizes the importance of proper Nidra in maintaining bodily equilibrium, chronic sleep disturbances may be considered contributory factors in the pathogenesis of metabolic disorders. Disturbed sleep can influence digestive and metabolic processes, creating conditions favorable for disease development.

Nidra and Cardiovascular Health

Healthy sleep is essential for maintaining cardiovascular function. During sleep, heart rate and blood pressure decrease, allowing the cardiovascular system to recover from daily physiological demands.

Persistent sleep deprivation has been linked with hypertension, increased sympathetic activity, systemic inflammation, and a higher risk of cardiovascular disease. Such findings support the Ayurvedic principle that disruption of natural physiological rhythms eventually leads to systemic imbalance and disease.

Nidra and Mental Health

The relationship between sleep and mental health is bidirectional. Poor sleep contributes to emotional instability, while psychological distress frequently interferes with sleep quality.

Insufficient sleep has been associated with anxiety disorders, depression, irritability, reduced stress tolerance, and impaired emotional regulation. Ayurveda similarly acknowledges the influence of Nidra on mental clarity, happiness, and cognitive functioning.

Healthy sleep supports psychological resilience and helps maintain equilibrium between the mind and body. Conversely, disturbed sleep can aggravate Vata and impair mental well-being.

Sleep Deprivation: Classical and Modern Perspectives

Table 4. Consequences of Sleep Deprivation in Ayurveda and Modern Science

<i>Ayurvedic Perspective</i>	Modern Scientific Perspective
<i>Daurbalya (Weakness)</i>	Fatigue and reduced physical performance
<i>Karshya (Emaciation)</i>	Metabolic dysfunction
<i>Ajnana (Impaired cognition)</i>	Reduced concentration and memory
<i>Dukha (Mental distress)</i>	Anxiety and depression
<i>Ojas Kshaya</i>	Reduced immunity
<i>Vata Prakopa</i>	Insomnia and nervous system disturbances

Insomnia and nervous system disturbances

The parallels between these descriptions demonstrate the remarkable foresight of Ayurvedic scholars regarding the consequences of disturbed sleep.

Nidra as a Tool for Preventive Healthcare

One of the distinguishing features of *Swasthavritta* is its emphasis on prevention rather than treatment alone. In this context, sleep represents a modifiable lifestyle factor capable of influencing multiple aspects of health simultaneously.

Improving sleep quality may contribute to better metabolic control, enhanced mental health, stronger immunity, improved productivity, and overall quality of life. Therefore, promotion of healthy sleep practices should be considered an integral component of preventive healthcare strategies.

The increasing prevalence of lifestyle disorders underscores the need to revisit the Ayurvedic concept of Nidra as a cornerstone of health promotion. By recognizing sleep as a fundamental pillar of well-being, both Ayurveda and modern medicine advocate a proactive approach toward disease prevention and long-term health maintenance.

8. AYURVEDIC SLEEP HYGIENE MODEL FOR HEALTHY LIVING

The increasing prevalence of sleep disturbances has highlighted the importance of practical and sustainable strategies for promoting healthy sleep. While modern medicine emphasizes sleep hygiene measures such as maintaining a regular sleep schedule, reducing screen exposure, and optimizing the sleeping environment, Ayurveda offers a comprehensive lifestyle framework that supports healthy sleep through daily behavioral practices. These recommendations are not limited to the treatment of sleep disorders but are intended to preserve health and prevent disease.

The Ayurvedic approach to healthy sleep begins with maintaining harmony between the individual and natural biological rhythms. Regularity in daily activities is considered essential for physiological balance. Consistent sleeping and waking times help synchronize bodily functions and support the natural sleep-wake cycle.

Role of *Dinacharya* and *Ratricharya*

Dinacharya and *Ratricharya* represent structured daily and nightly regimens designed to maintain health. Following a disciplined routine promotes stability of biological rhythms and facilitates timely initiation of sleep.

Ayurveda recommends completion of major activities during the daytime and gradual preparation for rest as evening approaches. Late-night work, excessive stimulation, emotional excitement, and irregular meal timings are discouraged because they may interfere with the body's natural tendency toward sleep.

Dietary Considerations for Healthy Sleep

Food plays a significant role in regulating sleep quality. Heavy, excessively spicy, highly processed, and late-night meals may disturb digestion and interfere with sleep. Conversely, light and easily digestible evening meals support comfortable and uninterrupted sleep.

Ayurveda emphasizes that proper digestion contributes to overall physiological balance. Disturbed digestion may aggravate Doshas and adversely affect sleep quality. Therefore, maintaining appropriate meal timing and dietary habits is considered an important component of healthy sleep practices.

Abhyanga* and *Padabhyanga

Among the various lifestyle measures described in *Ayurveda*, *Abhyanga* (oil massage) and *Padabhyanga* (oil application to the feet) are particularly relevant for promoting relaxation and sleep.

These practices help reduce physical fatigue, calm the nervous system, alleviate stress, and facilitate mental relaxation. Regular *Padabhyanga* before bedtime has traditionally been recommended for improving sleep quality and promoting a sense of comfort and well-being.

Yoga*, *Meditation*, and *Pranayama

The growing burden of stress-related sleep disturbances has renewed interest in mind-body practices. *Yoga*, meditation, and *Pranayama* help regulate physiological responses to stress and encourage mental tranquility.

Meditative practices reduce excessive mental activity, while slow and controlled breathing techniques promote relaxation and autonomic balance. These effects may facilitate sleep onset and improve overall sleep quality.

From both *Ayurvedic* and scientific perspectives, relaxation-based interventions represent valuable tools for addressing sleep disturbances associated with stress and anxiety.

Digital Detox and Sleep Preservation

Given the influence of electronic devices on sleep quality, limiting screen exposure before bedtime has become increasingly important. A period of digital disengagement before sleep may help reduce sensory stimulation and facilitate the transition from wakefulness to sleep.

This recommendation aligns closely with the *Ayurvedic* principle of allowing the senses and mind to gradually withdraw from external activities prior to sleep.

Conceptual Model of Healthy Sleep

A simplified *Ayurvedic* sleep promotion framework can be represented as follows:



This model illustrates how healthy sleep functions as a bridge between lifestyle practices and long-term well-being.

Table 5. *Ayurvedic* Recommendations for Healthy Sleep

<i>Ayurvedic</i> Measure	Expected Benefit
Regular sleep schedule	Circadian rhythm maintenance

<i>Ayurvedic Measure</i>	Expected Benefit
Light evening meal	Improved digestion and sleep quality
<i>Padabhyanga</i>	Relaxation and stress reduction
<i>Abhyanga</i>	Physical and mental rejuvenation
Meditation	Mental calmness
<i>Pranayama</i>	Autonomic balance and relaxation
Limiting screen exposure	Better melatonin regulation
Following <i>Ratricharya</i>	Improved sleep hygiene

9. PUBLIC HEALTH IMPLICATIONS AND FUTURE DIRECTIONS

Sleep disturbances are increasingly recognized as a significant public health issue. The prevalence of insomnia, poor sleep quality, and sleep deprivation has risen considerably in recent decades due to changing lifestyles, occupational demands, psychological stress, and technological influences. These challenges affect not only individual health but also workplace productivity, educational performance, healthcare expenditure, and overall quality of life.

From a public health perspective, improving sleep habits represents a cost-effective strategy for disease prevention and health promotion. Educational initiatives that encourage healthy sleep practices may help reduce the burden of lifestyle disorders and mental health problems.

The principles of Swasthavritta offer valuable opportunities for integrating sleep promotion into community health programs. Awareness regarding the importance of Nidra, sleep hygiene, stress management, and healthy daily routines can contribute to healthier populations.

Future research should focus on evaluating Ayurvedic sleep-promoting interventions through well-designed clinical studies. Investigations examining the effects of Padabhyanga, meditation, Yoga practices, and lifestyle modifications on sleep quality may provide further scientific evidence supporting traditional recommendations.

Additionally, interdisciplinary collaboration between Ayurvedic scholars, sleep researchers, public health professionals, and clinicians may facilitate the development of integrative approaches to sleep health that are both scientifically robust and culturally relevant.

10.CONCLUSION

Nidra occupies a central position in Ayurvedic philosophy and has been recognized as one of the three fundamental pillars supporting human life. The classical texts emphasize that proper sleep contributes to physical strength, mental clarity, emotional stability, vitality, and longevity, while disturbed sleep can adversely affect health and predispose individuals to disease. These observations demonstrate the profound understanding of sleep possessed by ancient *Ayurvedic* scholars.

Modern scientific research has increasingly validated many of these traditional concepts by demonstrating the essential role of sleep in neurocognitive functioning, metabolic regulation, immune competence, cardiovascular health, and psychological well-being. The growing prevalence of sleep disturbances and lifestyle disorders further highlights the importance of addressing sleep as a key determinant of health.

The comparison of *Ayurvedic* principles with contemporary sleep science reveals several meaningful parallels, particularly regarding restoration, recovery, physiological balance, and disease prevention. Such similarities provide opportunities for constructive dialogue between traditional knowledge systems and modern biomedical research.

In the contemporary digital era, where sleep deprivation has become increasingly common, the Ayurvedic concept of *Nidra* remains remarkably relevant. Lifestyle practices such as adherence to *Dinacharya* and *Ratricharya*, appropriate dietary habits, stress management, Yoga, meditation, and digital moderation may serve as practical tools for promoting healthy sleep and improving overall quality of life.

Therefore, *Nidra* should not be viewed merely as a period of rest but as a dynamic and indispensable contributor to holistic health. Integrating Ayurvedic wisdom with modern scientific understanding may offer effective and sustainable strategies for enhancing sleep health and supporting preventive healthcare in the twenty-first century.

REFERENCES

1. Acharya YT, editor. Charaka Samhita of Agnivesha with Ayurveda Dipika Commentary of Chakrapanidatta. Reprint ed. Varanasi: Chaukhambha Surbharati Prakashan; 2023.
2. Acharya YT, editor. Sushruta Samhita with Nibandhasangraha Commentary of Dalhanacharya. Reprint ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2022.
3. Paradkar HS, editor. Ashtanga Hridaya of Vagbhata with Sarvangasundara Commentary. Reprint ed. Varanasi: Chaukhambha Orientalia; 2022.
4. Sharma PV. Charaka Samhita (Text with English Translation). Vol. I–IV. Varanasi: Chaukhambha Orientalia; 2014.
5. Sharma PV. Sushruta Samhita (English Translation). Varanasi: Chaukhambha Vishvabharati; 2018.

6. Murthy KRS. Ashtanga Hridayam of Vagbhata. Vol. I–III. Varanasi: Chaukhambha Krishnadas Academy; 2017.
7. Tripathi B. Ashtanga Hridayam. Reprint ed. Delhi: Chaukhambha Sanskrit Pratishthan; 2021.
8. World Health Organization. Constitution of the World Health Organization. Geneva: WHO; 2024.
9. Watson NF, Badr MS, Belenky G, Bliwise DL, Buxton OM, Buysse D, et al. Recommended amount of sleep for a healthy adult: A joint consensus statement. *Sleep*. 2015;38(6):843–844.
10. Hirshkowitz M, Whiton K, Albert SM, Alessi C, Bruni O, DonCarlos L, et al. National Sleep Foundation's updated sleep duration recommendations. *Sleep Health*. 2015;1(4):233–243.
11. Carskadon MA, Dement WC. Normal human sleep: An overview. In: Kryger MH, Roth T, Dement WC, editors. *Principles and Practice of Sleep Medicine*. 7th ed. Philadelphia: Elsevier; 2022. P. 15–26.
12. Kryger MH, Roth T, Dement WC, editors. *Principles and Practice of Sleep Medicine*. 7th ed. Philadelphia: Elsevier; 2022.
13. Walker MP. *Why We Sleep: Unlocking the Power of Sleep and Dreams*. New York: Scribner; 2017.
14. Cirelli C, Tononi G. The sleeping brain. *Cerebrum*. 2017;2017:cer-07-17.
15. Xie L, Kang H, Xu Q, Chen MJ, Liao Y, Thiyagarajan M, et al. Sleep drives metabolite clearance from the adult brain. *Science*. 2013;342(6156):373–377.
16. Besedovsky L, Lange T, Born J. Sleep and immune function. *Pflugers Arch*. 2012;463(1):121–137.
17. Irwin MR. Why sleep is important for health: A psychoneuroimmunology perspective. *Annu Rev Psychol*. 2015;66:143–172.
18. Medic G, Wille M, Hemels ME. Short- and long-term health consequences of sleep disruption. *Nat Sci Sleep*. 2017;9:151–161.
19. Cappuccio FP, D'Elia L, Strazzullo P, Miller MA. Sleep duration and all-cause mortality. *Sleep*. 2010;33(5):585–592.
20. Shan Z, Ma H, Xie M, Yan P, Guo Y, Bao W, et al. Sleep duration and risk of type 2 diabetes: A meta-analysis. *Diabetes Care*. 2015;38(3):529–537.
21. Itani O, Jike M, Watanabe N, Kaneita Y. Short sleep duration and health outcomes: Systematic review and meta-analysis. *Sleep Med*. 2017;32:246–256.
22. Grandner MA. Sleep, health, and society. *Sleep Med Clin*. 2017;12(1):1–22.
23. Hale L, Guan S. Screen time and sleep among school-aged children and adolescents. *Sleep Med Rev*. 2015;21:50–58.
24. Chang AM, Aeschbach D, Duffy JF, Czeisler CA. Evening use of light-emitting eReaders negatively affects sleep and circadian timing. *Proc Natl Acad Sci USA*. 2015;112(4):1232–1237.

25. Riemann D, Krone LB, Wulff K, Nissen C. Sleep, insomnia, and mental health. *Nat Rev Psychol.* 2020;1(1):36–50.
26. Irwin MR, Opp MR. Sleep health: Reciprocal regulation of sleep and innate immunity. *Neuropsychopharmacology.* 2017;42(1):129–155.
27. Patel SR, Hu FB. Short sleep duration and weight gain: A systematic review. *Obesity.* 2008;16(3):643–653.
28. Buysse DJ. Sleep health: Can we define it? Does it matter? *Sleep.* 2014;37(1):9–17.
29. Yogendra J. *The Yoga of Sleep and Relaxation.* Mumbai: Yoga Institute; 2015.
30. Telles S, Sharma SK, Balkrishna A. Role of yoga in sleep quality and mental well-being: A review. *Int J Yoga.* 2021;14(2):89–96.