



IMPORTANCE OF NIDRA (SLEEP) W.S.R. TO IT'S TYPES AND PHYSIOLOGY

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ABSTRACT

There are three *Stambha* (pillars) are described according to our ancient science *Ayurveda* named *Vata*, *Pitta* and *Kapha*. The balance of these three is the base of healthy life. For remaining healthy and happy, *Ayurveda* have also mentioned the three *Upstambha* (supports) along with Three *Stambha*. The three *Upstambha* are Intake of *Aahar* (food), *Nidra* (Sleep) and Observance of *Brahmcharya*. It means that the sleep is also mandatory along with the food and observance of *Brahmcharya* for disease free life. According to *Ayurveda* and modern point of view abnormal sleep can cause many harmful effects in the human life. An adult person should take seven to eight hrs. of sleep in a whole day.

INTRODUCTION

“*Ayurveda*” is one of the world's oldest holistic healing systems. It's based on the belief that health and wellness depend on a delicate balance between the mind, body, and spirit. *Ayurveda* describes sleep as a basic instinct of life, essential to all living beings. We need it to rejuvenate and reenergize our body, mind, and spirit. In *Ayurveda*, sleep is one of the three pillars of good health, known as *Nidra*. Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity, reduced muscle activity and inhibition of nearly all voluntary muscles during rapid eye movement (REM) sleep, and reduced interactions with surroundings.^[1]

According to *Ayurveda*, sleep and other bodily functions are determined by the three constitutional types, or *Doshas*. The three *Doshas* are:

- *Vata* (wind)
- *Pitta* (fire)
- *Kapha* (water and earth).

Sleep is dominated by *Kapha*, which creates the heavy feeling of tiredness.^[2]

Review of literature (Ayurvedic and Modern)

Nidra (Sleep) is dominated due to *Kapha* (*Sharirik dosha*) and *Tama* (*Mansik dosha*). *Acharya Charka* says that when the mind is exhausted and the exhausted sense organs detract from their objects, the man sleeps.^[3]

Sleep is something the brain needs, Pelayo explains. Our brains run on electricity, which means the chemical energy the brain uses to function has waste products (called metabolites) that need to get cleaned out. That's what happens during sleep, Pelayo says. The brain flushes out those waste products and replenishes the energy the brain uses throughout the day (called adenosine triphosphate, or ATP).^[4]

Charaka Samhita, mentions six types of sleep.

They are

- *Tamobhava* (Caused by *tamas*)
- *Shleshmsamudbhava* (Caused by *kapha*)
- *ManahShareerShramSambhava* (Caused by physical and mental exertion)
- *Aagantuki* (Adventitious)
- *Vyadhyanuvaritinee* (As sequelae to a disease)
- *Ratriswabhavprabhava* (Normal sleep that occurs in night).^[5]

According to the modern literature there are two types of sleep, non-rapid eye-movement (NREM) sleep and rapid eye-movement (REM) sleep.

NREM sleep is divided into stages 1, 2, 3, and 4, representing a continuum of relative depth. Each has unique characteristics including variations in brain wave patterns, eye movements, and muscle tone. Sleep cycles and stages were uncovered with the use of electroencephalographic (EEG) recordings that trace the electrical patterns of brain activity.

Over the course of a period of sleep, NREM and REM sleep alternate cyclically. The function of alternations between these two types of sleep is not yet understood, but irregular cycling and/or absent sleep stages are associated with sleep disorders.

➤ **NREM and REM Sleep Cycles**

A sleep episode begins with a short period of NREM stage 1 progressing through stage 2, followed by stages 3 and 4 and finally to REM. NREM sleep constitutes about 75 to 80 percent of total time spent in sleep, and REM sleep constitutes the remaining 20 to 25 percent. The average length of the first NREM-REM sleep cycle is 70 to 100 minutes.

➤ **Four Stages of NREM Sleep**

The four stages of NREM sleep are each associated with distinct brain activity and physiology. NREM stage 1 sleep serves a transitional role in sleep-stage cycling. Aside from new-borns and those with narcolepsy and other specific neurological disorders, the average individual's sleep episode begins in NREM stage.

This stage usually lasts 1 to 7 minutes in the initial cycle, constituting 2 to 5 percent of total sleep, and is easily interrupted by a disruptive noise.

Stage 2 sleep lasts approximately 10 to 25 minutes in the initial cycle and lengthens with each successive cycle, eventually constituting between 45 to 55 percent of the total sleep episode. An individual in stage 2 sleep requires more intense stimuli than in stage 1 to awaken.

➤ **Physiology During Sleep**

In addition to the physiological changes listed in the given table below.^[6]

Physiological Process	NREM	REM
Brain activity	Decreases from wakefulness	Increases in motor and sensory areas, while other areas are similar to NREM
Blood pressure	Decreases from wakefulness	Increases (up to 30 percent) and varies from NREM
Sympathetic nerve activity	Decreases from wakefulness	Increases significantly from wakefulness
Muscle tone	Similar to wakefulness	Absent
Blood flow to brain	Decreases from wakefulness	Increases from NREM, depending on brain region
Respiration	Decreases from wakefulness	Increases and varies from NREM, but may show brief stoppages; coughing suppressed
Airway resistance	Increases from wakefulness	Increases and varies from wakefulness
Body temperature	Is regulated at lower set point than wakefulness; shivering initiated at lower temperature than during wakefulness	Is not regulated; no shivering or sweating; temperature drifts toward that of the local environment
Sexual arousal Greater than NREM	Occurs infrequently	Greater than NREM

As we above discussed that the *Kapha* dosha is the reason of sleep according to *Ayurveda*. There is dominance of *Kapha, Pitta, Vata* dosha at the ending, middle, beginning of the day night and age as the

Sleep stages 3 and 4 are collectively referred to as slow-wave sleep (SWS), most of which occurs during the first third of the night. Each has distinguishing characteristics. Stage 3 lasts only a few minutes and constitutes about 3 to 8 percent of sleep.

The last NREM stage is stage 4, which lasts approximately 20 to 40 minutes in the first cycle and makes up about 10 to 15 percent of sleep. The arousal threshold is highest for all NREM stages in stage 4.

➤ **REM Sleep**

REM sleep is defined by the presence of desynchronized (low-voltage, mixed-frequency) brain wave activity, muscle atonia, and bursts of rapid eye movements. During the initial cycle, the REM period may last only 1 to 5 minutes; however, it becomes progressively prolonged as the sleep episode progresses.

➤ **Physiological Changes During NREM and REM Sleep**

Dreaming is most often associated with REM sleep. Loss of muscle tone and reflexes likely serves an important function because it prevents an individual from "acting out" their dreams or nightmares while sleeping. Approximately 80 percent of vivid dream recall results after arousal from this stage of sleep. REM sleep may also be important for memory consolidation.

Ayurveda says. So the old persons sleep less because of the *Vata* dominance.

On the other hand the modern says that the melatonin hormone produces a signal that regulates the sleep-wake

cycle by causing drowsiness and lowering the body temperature. So melatonin often referred to as the sleep hormone, its production increases with evening darkness, promoting healthy sleep and helping to orient the circadian rhythm. Older people experience a decrease in melatonin levels, which may be due to the gradual deterioration of the hypothalamic nuclei that drive circadian rhythms.

Appropriate Time for Sleep

The ideal time for sleeping as mentioned in *Kaiyadeva Nighantuis* after the first two *Yamas* (approx 6 hours) of sunset. It is also advised that just before sleeping one should remember and pay respect to the god, sages and their teachers. Generally, for a healthy person, sleep occurs at night around the same time and lasts for a particular duration. *Ayurveda* regards this sleep as *Ratrisvabhava Prabhava*. It is further advised to avoid sleep during the first and last parts of the night, and wake up before the sun rise.

Functions of Sleep

Sleep at the night time makes for the Balance of the body constituents (*Dhatu samya*), attentiveness, good vision, and good complexion and good digestive power.^[10] *Acharya Susruta* described that, those who takes proper sleep in proper time will not suffer from any type of disease, the mind of them will be calm & cool, they gain potency and good features, good virility, their body will be good-looking, they won't be weak or obese and they live healthy long life.^[11]

According to *Acharya Charaka* benefits of Proper Sleep are *Sukha* (happiness), *Dukha* (unhappiness), *Pushti* (good physique), *Karshya* (emaciation), *Vrushta* (sexual power), *Klibata* (impotence), *Gyan* (knowledge), and *Agyan* (illiteracy), *Jivita* (long life), *Ajivita* (death) all these factors depends on *Nidra*. *Samyak Nidra* gives us *Sukha*, *Pushti*, *Bala*, *Vrushta*, *Gyanand Jivan*. *Asamyak Nidra* causes *Dukha*, *Karshya*, *Abala*, *Klibata* and *Agyan*.

According to modern science some effects of proper sleep are - helps to maintain or lose weight, improve concentration and productivity, maximize athletic performance strengthen heart. helps to maintain or lose weight, Affects sugar metabolism and type 2 diabetes risk, supports a healthy immune system, better sleep does better mood, Sleep Reduces Stress, Sleep Improves Memory etc. Improper sleep negatively affects mental abilities and emotional state. The person dealing with it may feel more impatient or prone to mood swings. It can also compromise decision-making processes and creativity. If sleep deprivation continues long enough, he could start having hallucinations seeing or hearing things that aren't really there. A lack of sleep can also trigger mania in people who have bipolar mood disorder. Other psychological risks include: impulsive behaviour, anxiety, depression, paranoia, suicidal thoughts. Poor sleep is linked to increased inflammation also.

DISCUSSION

Sleep is directly connected with mental state. Sleep is particularly relevant to psychiatric illness and frequently part of diagnostic criteria for specific disorders.^[12] In today's era, people are not getting plenty hours of sleep because of busy life schedules and overload, as a result, work hours have engaged the time of sleep. Tension also contributed its share in reducing the sleeping time. If a healthy person not getting proper sleep, he will become a patient. It is not a serious problem in the start. But later on stage it leads to number of health nuisance and ailments.^[13]

CONCLUSION

The main aim of this article is, to overview & highlights, the Concept of *Nidra* & its importance on Human life. In today's era *Nidra* is the very important factors to be studied. *Nidra* is a key factor to play a big role in our healthy life, in today's era there is lot of workloads on the mind of every person, so the stress and overthinking snatches his all comfort including sleep. Relaxing the mood with doing yoga and pranayama can help in this situation.

REFERENCE

1. <https://en.wikipedia.org/wiki/Sleep>
2. <https://www.healthline.com/health/sleep/ayurvedic-guide-to-sleep>.
3. Caraka Samhita by P.V. Sharma Volume 1st Chaukhambha Oreintalia Reprint Edition: Sutra Sthana Chapter, 2008; 21: 147.
4. <https://www.everydayhealth.com/sleep-disorders/sleep/sleep-101-ultimate-guide-on-how-get-better-nights-sleep>.
5. Caraka Samhita by P.V. Sharma Volume 1st Chaukhambha Oreintalia Reprint Edition: Sutra Sthana Chapter, 2008; 21: 149.
6. Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem.
7. Show details
8. Institute of Medicine (US) Committee on Sleep Medicine and Research; Colten HR, Altevogt BM, editors.
9. Washington (DC): National Academies Press (US), 2006.
10. Tripathi R. Astanga Sangraha, Varanasi: Choukhambha Sanskrit Pratishthan, 1996; 9/41: 199.
11. Jadavji T. Susruta Samhita, Dalhana Nibandha Sangraha. Varanasi: Chaukhambha Subharati, 1994; 24/88: 398.
12. Dr. Saritayadav, Dr. Om Prakashdadhich Sleepiness (Nidranaasha) cause and management in nidranaasha.
13. Dr. Yoges. Godkar- Aclinical study of shirodhara in single point drop method and oscillatory drip method in Anidra.