

AN AYURVEDIC APPROACH ON NIDRA AND ITS PHYSIOLOGICAL CHANGES

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ABSTRACT

Ayurveda; an eternal system of medicine, is known for its multidimensional approach towards mankind. Utility of this science starts from fertilization till death. Health of a person means healthy physical body and mind together. *Ayurveda* helps in keeping balance, harmony and equilibrium in all physiological activities of body and mind. The ancient *Ayurvedic* classics describes the main three milestone of life is *Ahara*, *Nidra* and *Brahmacharya* and *Nidra* is one of them; it is very significant for human being. *Nidra* is very crucial factor for day to day life. Lack of *Nidra* causes various pathological conditions called *Anidra*. After a long time it is converted into Chronic condition called Secondary insomnia or tertiary insomnia. *Nidra* is

prime among the factors responsible for sustenance of life. Sleep is defined as a state of unconsciousness from which a person can be aroused. In this state, the brain is relatively more responsive to internal stimuli than external stimuli. Sleep is essential for normal, healthy functioning of the human body. When the mind gets exhausted or become inactive and the sensory and the motor organs become inactive then the individual gets sleep. Proper sleep can destroy half the diseases. *Tamas* and *Satva* qualities are responsible for sleep as well as awakening respectively. *Ratriswabhava Prabhava Nidra* is a natural sleep, is called as *Bhutadhatri* and nourishes all living being.

KEYWORDS:- *Nidra*, Classification, Regulation and physiological changes.

INTRODUCTION

Both *Charaka* and *Sushruta* have mentioned in their respective *Samhitas* that *Nidra* is a

condition or state of both body and mind where the sense organs are divorced of the sense objects from their respective senses. This phenomenon is mainly due to klama (fatigue) of the body and mind. Vagbhata has mentioned that *nidra* is *tamomoola* and *tamomayee* i.e, predominance of *Tamoguna*. But *Sushruta* has mentioned that- *Nidra* is illusory creation of Lord Vishnu and is called as *Papma* (sinful) because of blocking of auspicious activities, which affects all the living beings by its nature. When *Kapha dosha* is predominated by *Tamoguna* reaches to the consciousness carrying channels and induces sleep.^[1]

Ayurveda is an eternal science. *Nidra* (Sleep) being an integral part of our life plays an important role in promotion of health and prevention of diseases. The word *Nidra* is obtained by adding prefix to the *dhatu* “*dra*”. “*dra*” *dhatu* means to sleep. Hence the term *Nidra* means back to sleep, into sleep, down to sleep.^[2]

The three supports of life are intake of food, sleep and observance of Brahmacharya. Being supported by these three well regulated factors of life, the body is endowed with strength, complexion and growth, and continues until the full span of life; provide a person does not indulge in such regimen as are detrimental to health.^[3]

Mechanism of sleep (physiology of sleep) as *ayurveda*

Sleep is a state of consciousness that differs from the alert or wakefulness, by loss of critical reactivity to events in the environment with profound alternative in the respiration etc. When sense organs are exhausted due to exertion or hard work done by the individual at the same time it increases *Vata dosha* in the body that *Vata dosha* carries *Kapha dosha* from their own site and obstructs the *Manovaha* and *Samjnavaha Srotas*. As we know that *Kapha* is predominated by *Tamoguna* that *Tamoguna* impairs the normal activities/functions of *Manovaha* and *Samjnavaha Srotas*. As a result of which a person falls to sleep.^[4]

As per modern science mind including sensory and motor organs due to work/exertion they are exhausted and dissociate themselves from their object as a result of which it includes sleep.^[5]

Importance of sleep^[21]

More than half of the life is invariably spent in sleep hence if it not enjoyed properly it may leads to several diseases and at the same time if it is properly enjoyed it proves most beneficial to the life. Thus *Sukha*, *Duhkha*, *Pushti*, *Karshaya Bala*, *Dourbalya*, *Purushatwa*,

Kleebatwa, Jnana, Ajnana and Mrityu are all depended upon the proper and improper enjoyed sleep. Any anomaly in sleep *Hinyoga, Atiyoga* or *Mithyayoga* enjoyed keeps the body healthy and mind sharp and sound. *Acharya Sushruta* in 24th chapter of *chikitsa sthan* said that “Wholesome and timely sleep brings about homeostasis in bodily tissue”.^[6]

Classification of *nidra*^[9]

Nidra is of seven types viz.

1. ***Kalawabhavanaya*** – sleep is produced by the accustomed time (night)/ normal daily routine sleep.
2. ***Amayajana*** – due to the effect of the disease.
3. ***Chittakheda*** – due to the mental exertion.
4. ***Dehakheda*** – due to the physical exercise.
5. ***Kapha*** – due to increase of *Kapha*.
6. ***Agantuja*** – due to the external factors e.g. head injury resulting in fainting and sleep.
7. ***Tamobhava*** – due to the predominance of *Tamoguna* in the body.^[7]

Out of these the first one that due to the accustomed times i.e., in every night, which protects the body while the last one, is due to predominance of *Tamoguna* i.e. sinful and destroys the body which appears just before the death and all the others are due to the disease conditions.^[8]

In this connection *acharya charaka* has also classified the *nidra* into seven types^[21]

1. ***Tamoguna*** – due to predominance of *Tamoguna* in the body.
2. ***Sleshma Samudbhava*** – due to predominance of *Kapha* especially vitiated *Kapha*.
3. ***Manashshrama-sambhava-*** due to mental exertion.
4. ***Sharira-Shrama-Sambhava-*** due to physical exertion.
5. ***Agantuki*** – due to the external factors.
6. ***Vyadhyanuvartini*** – due to disease especially caused as a complication of other disease like *Sannipatika jwara*.
7. ***Ratriswabhanayanya*** – caused by the very nature of the night i.e. physiological sleep.^[9]
8. Again *Charaka* has mentioned that^[21]

The night sleep is caused by the nature; the sleep is par excellence, which is known as *Bhutadhatri* i.e. that nourishes all the living beings. The one caused by the *Tamas* is the root cause of all sinful acts because *Tamas* always causes excessive sleep. Thus the individual is

unable to perform the various rites and so he subjects himself to sinful behavior. The remaining types are to be treated as diseases because it is caused as such it is in self incurable.^[10]

Effects of proper sleep^[21]

For good health how the proper food is required like that manner proper sleep is also very essential for the maintenance of the body. Corpulence and emaciation are specially conditioned by proper and improper sleep and diet. Happiness, misery, nourishment, emaciation, strength, weakness, virility, sterile, knowledge, ignorance, life and death all these depend up on the proper and happiness and longevity in human being as the real knowledge brings about *Siddhi* (spiritual power) in a *Yogi*.^[11]

Time for sleeping^[4]

The person who wants to remain free from the diseases, cheerful, endowed with strength and complexion, sexually potent, of moderate physique and glorious and wants to live for 100 yrs. Such wise person should not keep awake in night time and sleep during daytime because they are considering both these as harmful, should take moderate sleep.^[12]

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Happiness, misery, nourishment, emaciation, strength, weakness, virility, sterility, knowledge, ignorance, life and death all these depend up on the proper and improper of sleep. The same sleep, if properly enjoyed brings about happiness and longevity in human being as the real knowledge brings about *siddhi* (spiritual power) in a *yogin*.^[14]

Effect of night awakening^[7]

If one remains awake in *Vatakala* i.e. in late night then *Vata* gets vitiated which vitiates the *Agni* and leads to inappropriate digestion than *Pitta* and *Kapha*. If one remains awake in *Kapha* and *Pitta kala* i.e. first two *Praharas*, and sleep in *Vatakala* i.e. in last *Prahara* then definitely food gets digested properly. Vigil during night causes roughness in the body, sleeping during day time give rise to unctuousness and dosing in sitting posture does neither cause roughness nor unctuousness.^[15]

Sleeping pattern^[21]

After taking the dinner, one should walk for hundred steps before going to sleep, then one should lie down in recumbent posture up bed taking 8 times breath and changes the posture to right lateral till taking 16 times breath and thereafter to left lateral taking 32 times breath and then can sleep in any posture. But it is always advisable to sleep in left lateral position because the *Agni* (digestive fire) lies in the left side of the body above the *Nabhi*, which is responsible for the digestion.^[16]

Time suitable to wake^[21]

Though the duration of sleep is not directly mentioned in the *Ayurvedic* classics but indirectly it can be understood by the verse given by *Acharya Vagbhata* i.e. one should wake up in the *Brahmamuhurta* i.e. 48 minutes before the Sunrise following the proper digestion of food taken at night.^[17]

Depth of sleep

The intensity or the depth of sleep varies during the sleep. It reaches its maximum 2-3 hours after the onset of sleep. After that the intensity or depth of sleep is diminished. The depth of sleep can be measured by the intensity of sound which is required to wake up the sleeping individual. Deep sleep is not attended with dreams. Sleep does not affect all the senses equally. Smell and taste are most depressed. Pain and touch and hearing are least affected. Hence, a sleeping man can be more easily aroused by the letter stimuli.^[18]

Relation of age with sleep

Age	Daily sleep time
1-5 days	16 hrs
3-5 months	14 hrs
2-3 yrs	13 hrs
5-9 yrs	11 hrs
10-14 yrs	9 hrs
19-30 yrs	8 hrs
33-45 yrs	7 hrs
50-70 yrs	6 hrs

Mechanism of sleep

Sleep occurs due to the activity of some sleep-inducing centers in brain. Stimulation of these centers induces sleep. Damage of sleep centers results in sleeplessness or persistent wakefulness called insomnia.^[19]

- **Sleep centers-** Complex pathways between the reticular formation of brainstem,

diencephalon and cerebral cortex are involved in the onset and maintenance of sleep.

However, two centers which induce sleep are located in brainstem:

1. **Raphe nucleus.**
2. **Locus coeruleus of pons.**

Recently, many more areas that induce sleep are identified in the brain of animals.

Inhibition of ascending reticular activating system also results in sleep.^[20]

Physiological changes during sleep

During sleep somatic activity is greatly decreased. Threshold of many reflexes is elevated and responsiveness is also lessened. Man cannot remember the events occurring during sleep. Basal metabolic rate brings least; all tissues and organs perform the least work. Changes are given below.^[21]

1. **Circulatory system:** Pulse rate, cardiac output, vasomotor tone and blood pressure reduced.
2. **Respiratory rate:** (a) May be costal or periodic, especially in children. (b) Tidal volume, rate of respiration and therefore, pulmonary ventilation- lowered (sometimes rate may be unchanged or even high due to shallow breathing).
3. **Basal metabolic rate:** Reduced by 10-15%.
4. **Urine:** Volume less, reaction variable, specific gravity and phosphates- raised.
5. **Secretions-** (a) Salivary and lachrymal- reduced, (b) Gastric unaltered or raised, (c) Sweat- raised.
6. **Muscles-** Relaxed (tone minimum).
7. **Eyes-** (a) Eyeballs- roll up and out-due to flaccid external ocular muscles. (b) Eyelids- come closer, especially due to drooping of the upper lids. (c) Pupils- contracted.
8. **Blood-** Volume increased (plasma diluted).
9. **Nervous system-** (a) Electroencephalogram- Appearance of α - waves. (b) Deep reflexes- reduced. (c) Babinski- extensor. (d) Superficial reflexes- unchanged. (e) Vasomotor reflexes- more brisk. (f) Light reflex- retained.
10. **Electroencephalographic changes during sleep-** The EEG pattern changes at different stages from normal waking state to sleep- depending upon the degree of sleep.
 - a) α - Waves gradually diminished in amplitude and percent time followed by.
 - b) Further diminution or abolition of α -waves with low voltage fluctuations and occasional α -waves.

- c) This stage is characterized by 14 cycles per second spindle bursts associated with low voltage α - wave background (light sleep).
- d) When α -wave frequency becomes lower amplitude associated with disappearance of spindle burst (medium sleep).
- e) In this stage, α -wave becomes more prominent with higher amplitude and longer duration (deep sleep).^[22]

DISCUSSION

The important observation made during the study-Sleep is directly connected with mental state. *Ayurveda* emphasized that *Sharira* and *Satva* both interact with one another in all sphere of life. Sleep is particularly relevant to psychiatric illness and frequently part of diagnostic criteria for specific disorders.^[23]

In today's era, people are not getting plenty hours of sleep because of busy life schedules and overloaded, 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/she 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 ailment.^[24]

CONCLUSION

The main aim of this article is, to overview and highlights, the Concept of *Nidra* and its importance in 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 life. In current scenarios, due to heavy studies or heavy work schedule, *Anidra* is a big factor now a day. Our *Acharyas* already told about *Nidra*, and its maintenance, *Ritu* according *Ahara* and *Vihara* also explained. Ancient description of *Ayurveda* and *Yoga* have given importance to sleep and described different patterns of sleep with their significance in the maintenance of positive health.^[25]

REFERENCES

1. Trikamji Yadavji, Caraka Samhita, Varanasi, Caukhambha Surbharti, 1992; 11(35): 36- 38.
2. Trikamji Yadavji, Caraka Samhita, (Chakrapanidata) Varanasi, Caukhamba Surbharti Prakasana, 1992; 11-35.
3. Sastri Ambikadatta, Susruta Samhita, Varanasi, Caukhamba Sanskrita Sansthana, 2005; 4-40.

4. Tripathi Ravidatta, Astanga Sangraha (Sutrasthana), Delhi, Chaukhamba Sanskrita Pratisthan, 2005; 9(38): 41-68.
5. Sharma R. Caraka Samhita Chakrapani Ayurveda Deepika. Sutra Varanasi: Choukhambha Sanskrit Samsthan, 2012; 1: 381.
6. Sastri H. Amarkosh. Varanasi: Choukhambha Sanskrit Samsthan, 2006.1/7/36:110. Choukhambha Sanskrit Samsthan, 2003; 40.
7. Bahadur R. Shabdakalpadrum, Varanasi: Chaukhambha Sanskrit series, 1967; 1: 1.
8. Tripathi Ravidatta, Astanga Sangraha (Nidansthana), Delhi, Chaukhamba Sanskrita Pratisthana, 2005; 3-22.
9. Kushwaha H, Charak Samhita, Part II, Chaukhambha Orientalia, Varanasi Chikitsa, 2009; 420: 15-241.
10. Tripathi R. Ashtanga Sangraha, Varanasi: Choukhambha Sanskrit Pratisthana, 1996; 9(41): 199.
11. Chatterjee C. Human Physiology Calcutta: Medical Allied Agency, 1991; 5: 267-68.
12. Notes on Human Physiology Current Books International, Calcutta, 1977; 448.
13. Dr Chitta Ranjan Das, A textbook of Physiology, Chaukhambha Sanskrit Pratishthan, 2019; 9.
14. Guyton Arthur & Hall John, Textbook of Medical Physiology, Elsevier Publications, 2006; 11.
15. Sujeet Kumar, Rohit Ranjan, Deovrat Narayan Singh, Dineshwar Prasad, Role of Ideal Nidra in Maintaining Good Health: Ayurvedic Rewiew. World journal of Pharmaceutical and Medical Research, 2017; 3(4): 83-86.