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## Concept of nidra and its physiological aspect on human body

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### Abstract

The Ancient *Ayurvedic classics* describes the main three milestones of life is *Ahara*, *Nidra* and *Brahmacharya* & *nidra* is one of them; it is very significant for human being. *Nidra* is very crucial factor for day to day life. If *Nidra* is not taken routinely can cause serious diseased condition, which will affect the physical and mental health as well. Lack of *Nidra* causes various pathological conditions called *Anidra* (*Primary insomnia*). After a long time it is converted into Chronic condition called Secondary Insomnia or tertiary insomnia. In *Classical Science*, the Entire study of *Nidra* and its Classification is given in *Samhitas*. In this study, a Critical explanation, presented on “*Nidra* and its physiological aspect on Human body” is explained.

**Keywords:** *nidra*, classification, sleep physiology

### 1. Introduction

#### 1.1 Etymological derivation of *Nidra*

The word *Nidra* is feminine, formed by the prefix *ni+dra+rak+ta*.

This is a state of nature which causes encapsulation to the consciousness of a person [2].

#### 1.2 Definition

The definitions given in ancient texts are as Follows –

- Sleep is the mental operation having the absence of cognition for its grasp. *Acharya Vyas* made a statement that - “sleep is a state of unconsciousness, but the consciousness remains about his own unconsciousness” [3].
- Statement by “*Mandukya Upanishad*”, *Nidra* is a condition in which “*Atma*” does not have any dream or desire for anything and that state is called “*susupti*” [4].
- Acharya Charak* affirmed that when the mind (as well as soul) gets exhausted or becomes inactive and the sensory and motor organs become inactive then the individual gets sleep [5].
- Acharya Susruta*, described the sleep occurs when the *Hridaya*, the seat of *chetana* is covered by *Tamas* [6].
- Acharya Dalhana*, the commentator of *Susruta* states, that- *Nidra* is the state of combination of mind and intellectual in which the person feels happy [7].
- According to *Astanga Sangraha commentary*, stated that, the *manovaha Srotas* become accumulated with *sleshma* and mind is devoid of sense organs because of fatigue, when individual fell asleep [8].

### 2. Material and Methods

Materials related to *Nidra* and Sleep physiology have been collected from Different journals, Ayurvedic text books, authentic websites (Pub Med etc.), Reputed Magazines, Authentic literatures, Manuscripts, Sanskrit Dictionary etc [9].

#### 2.1 Significance of sleep

*Ahara*, *Nidra* and *Brahmacharya* are the three main pyramids of life, which play vital role for maintenance of health in human being. In the Ayurvedic Literature, three factors i.e. *Ahara*, *Nidra* and *Brahmacharya* are compared with the triangles are termed as the three *Upastambhas* or *Tripods* [10].

The inclusion of *Nidra* in the three *Upastambha* establishes its value. While explaining about *Nidra*, *Acharyas* stated, that delight and sorrow, growth and wasting, strength and weakness, virility and impotence, the knowledge and ignorance as well as the survival of life and its termination depend on the sleep [11].

## 2.2 Phenomenon of NIDRA

The different theories stated regarding the phenomena of *Nidra* can be summarized and classified into four groups (Fig no.1) -

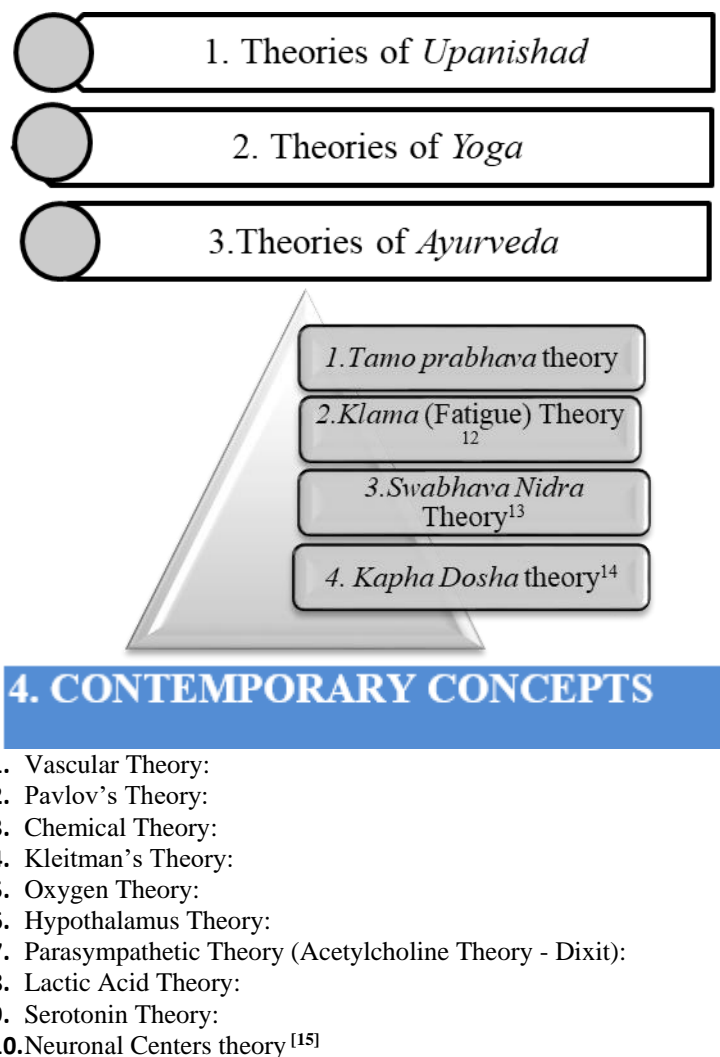


Fig 1: *Nidra* group wise classification.

## 2.3 Acharyas classification of Nidra [16]

Classification of *Nidra* by different Acharyas as follows (Table no.1) –

Table 1: Classification of *Nidra* by different Acharyas.

S. No.	Acharya Charaka	Acharya Sushruta	Acharya Vrudha Vagbhata
1	Tamobhava	Vaishnvi	Tamobhava
2	Shleshmasamdbhava	Vaikariki	Aamayakhedaprabhavaja
3	Manasharira shrama Sambhava	Tamsi	Chittakhedaprabhavaja
4	Agantuki		Aagantuki
5	Vyadhyanuvaritini		Kaphaprabhavaja
6	Ratriswabhavaprabhava		Dehakhedaprabhavaja
7			Kalavabhavaja

## 2.4 Physiology of sleep

When Mind is fatigued then sleep occurs. According to Howell, sleep is due to cerebral ischaemia. Cerebral cortex is the seat of higher centers like pre and post central gyrus & associated area etc., which have the correlation with mental activities described in Ayurveda. So due to the reduction in cerebral blood supply Mind becomes calm that causes sleep [17].

## 2.5 How sleep is regulated

During wakefulness, the brain is kept in an alert state by the interactions of two major systems of nerve cells, in the upper

part of the pons and in the midbrain, which makes acetylcholine as their neurotransmitter (NT), sends inputs to the thalamus, to activate it. It in turn activates the cerebral cortex, and produces a waking Electroencephalography (EEG) pattern.

However, during Random Eye Movement (REM) sleep, the cholinergic nerve cells, thalamus & the cortex are in a condition, similar to wakefulness but the brain is in Random Eye Movement (REM) sleep. The difference is supplied by three sets of nerve cells in the upper part of the brain stem: The nerve cells that contain the neurotransmitter (Fig. no.2) –

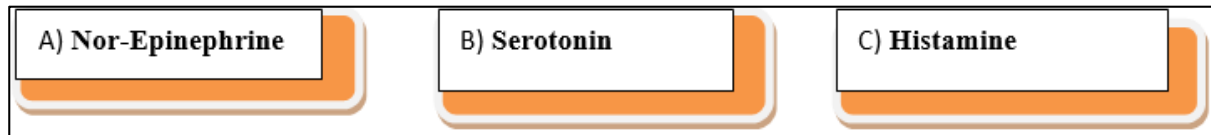


Fig 2: Different Neurotransmitters in nerve cells.

The brain stem cell groups that control arousal are in turn regulated by two groups of nerve cells in the hypothalamus. One group of nerve cells, in the ventrolateral pre-optic nucleus, contains inhibitory NT (neurotransmitter) and GABA. The major influence on sleep cycle is the body's circadian rhythm, the suprachiasmatic nucleus. These nerve cells in the hypothalamus contain clock genes, which go through a biochemical cycle of almost exactly 24 hours sleep, hormones and other bodily functions<sup>[18]</sup>.

## 2.6 The depth of sleep

The depth of sleep is not constant during the sleeping period, but varies from hour to hour. In most adults sleep deepens rapidly to the end of the first hour, after which it lessens sharply for a time, and then more slowly till the time of waking. Generally, sleep taken during the daytime is lighter than that during the night<sup>[19]</sup>.

The following are average figures of different periods of life (Fig. no.3).

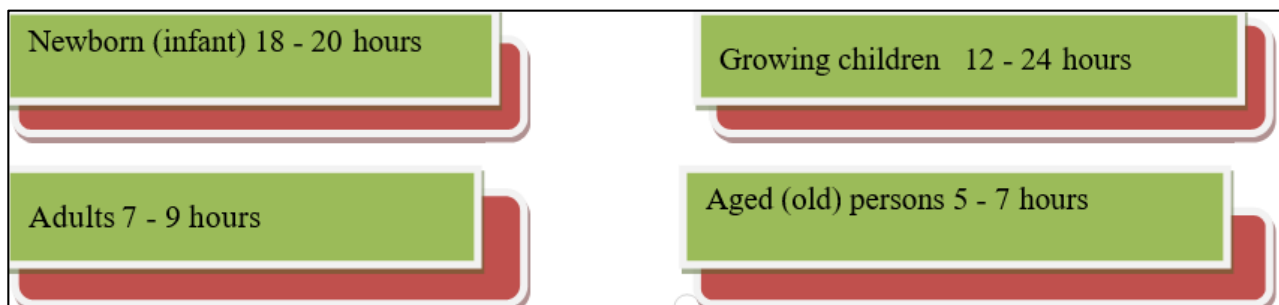


Fig 3: Average of different periods of life.

## 2.7 Physiological effects of sleep

*Acharya Charak* explains that in the night, the *Hridaya* (Heart) gets contracted and the *Srotasa* (the channels of circulation) as well as the *Koshtha* (Gastro-intestinal tract) are contracted, the body elements get softened<sup>[20]</sup> According to modern view, sleep causes two major types of physiological effects.

- 1) Effects on the Nervous System itself.
- 2) Effects on the other structures of the body.

## 2.8 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<sup>[21]</sup>.

*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<sup>[22]</sup>.

## 3. 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<sup>[23]</sup>.

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<sup>[24]</sup>.

## 4. 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 Current Scenario's, due to heavy studies or heavy work schedule, *Anidra* is a big factor now a days. Before 5000 years back, Our *Acharyas* already told about *Nidra*, & its *maintenance, ritu* according *Ahara* and *Vihara* also explained. And *Acharyas* also explained about *Anidra*, its causes, diagnosis and treatment<sup>[25]</sup>.

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