

**A review article on Ayurvedic and Modern concept of sleep****Dr. Manjushree Wankhede**

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**Abstract:**

According to Ayurveda, Ahar (diet), nidra (sleep) and Brahmacharya are three pillars of our life. Sound sleep plays an important role in good health along with exercise and diet. Sleep is a natural physiological state which gives rest and relaxation to body, mind and brain. Sleep resets, detoxify and rejuvenate our body. If a person gets proper good night sleep it will give direct impact on his quality of work on the next day. His daily activities including physical, mental and social depends on proper brain functioning and proper sleep. But now-a-days a person does not get enough sleep because of high work load and busy life. So objectives of this study is to study the benefits of good and healthy sleep and to draw society's attention to the burden of sleep problems and their medical, educational, and social aspects, and to promote the prevention and management of sleep disorders.

Keywords: Nidra, Insomnia

**Introduction:**

**S**leep is a condition of body and mind that typically recurs for several hours every night, in which the nervous system is relatively inactive, the eyes closed, the postural muscles relaxed, and consciousness practically suspended.

Sleep is a natural time for the body and mind to rest, reset, detoxify, and rejuvenate—and sleep is carefully regulated by our bodies.

In Ayurveda, sleep is mentioned as Nidra. The word 'Nidra' is derived from the root "Dra" with a prefix 'Ni'. The root "Dra" means undesired. Therefore, Nidra is considered as a state in which there will be no desire. This is also a state of nature, which causes encapsulation to the consciousness of the person.

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**Patho physiology of sleep:**

The most pronounced physiological changes in sleep occur in the brain. The brain uses significantly less energy during sleep than it does when awake, especially during non-REM sleep. In areas with reduced activity, the brain restores its supply of adenosine triphosphate (ATP), the

molecule used for short-term storage and transport of energy. In quiet waking, the brain is responsible for 20% of the body's energy use, thus this reduction has a noticeable effect on overall energy consumption.

Sleep increases the sensory threshold. In other words, sleeping persons perceive fewer stimuli, but can generally still respond to loud noises and other salient sensory events.

During slow-wave sleep, humans secrete bursts of growth hormone. All sleep, even during the day, is associated with secretion of prolactin.

The biological clock of our body is situated in hypothalamus of brain. This clock is a group of nerve cells called suprachiasmatic nucleus, or SCN. The SCN controls secretion of hormone melatonin which makes us sleepy. When there is less light, the SCN sends signals to brain to secrete more melatonin. This is called Circadian rhythm. Thus the sleep and wake cycle are in rhythm with night and day. Hence Ayurveda recommends to follow ayurvedic daily routine or "dinacharya" and ayurvedic seasonal routine "rutucharya", which coexist with Circadian rhythm. Texts of ayurveda explain various remedies to reduce the harmful effects of disturbing this body clock, which is prevalent in shift workers.

**Ayurved literature description:** Since the down of the civilization the experts of various countries in the

world have tried to study the sleep, its nature and causes which is a mysterious thing. But in India our ancient Acharyas had clear idea regarding the physiology of sleep but explained in different manners.

- Shayanam, Svapah, Svapnam, Sambashah (Amarakosa)  
Sambasaha Suptih , Svapnam ( Vaidyak a Sabdhasindhu )  
Susupti (Manduka Upanisad )
- Sleep is mentioned as one among the thirteen  
Adharaneeya Vegas. (Ch. Su. 7/4, A.H.Su.4/1).
- Sleep is nothing but the temporarily loses the contact with Jnanendriya and Karmendriya which is termed as Nidra (Su.Su. 15140).
- Sushruta mentions that when the Sanjavaha srotas are filled with Kapha and Indriyas are deprived from their respective objects of senses, the person goes to sleep. He also clearly mentions the role of Kapha and Tama for Nidra Utpatti (Su.Sha.416, 33).
- Dalhana states that Nid ra is the state of combination of mind and intellectual in which the person feel s happy ( Dalhana on Su.Su. ] 51 Chapter).

**Types of Sleep:**

Various Acharyas have given various opinions regarding the types of sleep. But broadly it can classify into 2 types.

- 1) Svabhavika Nidra – which comes regularly and naturally at night.
- 2) Asvabhavika Nidra – which comes due to some other causes.

Other types of Nidra according to different Acharyas are as follows:

- 1) According to Acharya Charaka –
  - a) Tamobhava
  - b) Shleshmasamudbhava
  - c) & (d) Manashareera Shrama Sambhava
  - e) Agantuki
  - f) Vyadhyanuvartini
  - g) Ratri svabhava ( Ch.Su. 21158)

2) Acharya Sushruta classifies as follows:

- A) Tamasi
- b) Svabhavika I Vaishnavi
- c) Vaikarika  
(Su.Sha. 4143)

3) Vagbhata’s classification of sleep is similar with Charak’s classification but the names differ.

- a) Tamobhava
- b) Kaphabhava
- c) Chittakhedaja
- d) Dehakhedaja
- e) Agantuki
- t) Kalasyabhava •
- g ) Amayaja

**Vyadhyanuvartini:**

In some diseases due to severe weakness the patient falls asleep called Vyadhyanuvartini. Example- in Sannipataj jwar (Typhoid fever). Agantuki:

Sometimes the cause of sleep is unexplainable. Chakrapani and Gangadhar commented as Agantuki. Nidra is indicative of bad prognosis which leading to definite death (Arista lakshana) (Chakrapani & Gangadhar on Ch. Sut. 21158).

**Types of sleep – Modern aspects- Non-REM and REM sleep:**

Sleep is divided into two broad types:

- Non-rapid eye movement (non-REM or NREM) sleep - The American Academy of Sleep Medicine (AASM) divides NREM into three stages: N1, N2, and N3, the last of which is also called delta sleep or slow-wave sleep. The whole period normally proceeds in the order: N1 → N2 → N3 → N2 → REM
- Rapid eye movement (REM) sleep- REM sleep occurs as a person returns to stage 2 or 1 from a deep sleep.

A full sleep cycle is all about 90-100 minutes plus a standard sleep comprises 4-5 total sleep cycles. A sleep cycle includes about 5 phases, where the initial 4 sleep cycles ensure the NREM sleep period. The NREM cycles finish after and reverse again to be followed closely by the REM cycle.

- Stage 1 non-REM sleep marks the transition from wakefulness to sleep. This stage

typically lasts less than 10 minutes and is marked by a slowing of your heartbeat, breathing, and eye movements, as well as the relaxation of your muscles.

- Stage 2 non-REM sleep is a period of light sleep before you enter deeper sleep, lasts roughly 20 minutes. Stage two is characterized by further slowing of both the heartbeat and breathing, and the brain begins to produce bursts of rapid, rhythmic brain wave activity known as sleep spindles.
- Formerly known as stages 3 and 4, stage 3 (N3) is the final stage of non-REM sleep. This is the deepest period of sleep and lasts 20 to 40 minutes. Your heartbeat and breathing slow to their lowest levels, and your muscles are so relaxed that it may be hard to awaken you. This is known as Delta sleep or slow-wave sleep.
- REM sleep occurs 90 minutes after sleep onset, and is a much deeper sleep than any of the three stages of non-REM sleep. REM sleep is defined by rapid eye movements and an almost complete paralysis of the body, and a tendency to dream.
- Non-REM and REM sleep are so different that physiologists identify them as distinct behavioral states. Non-REM sleep occurs first and after a transitional period is called slow-wave sleep or deep sleep. During this phase, body temperature and heart rate fall, and the brain uses less energy. REM sleep, also known as paradoxical sleep, represents a smaller portion of total sleep time. It is the main occasion for dreams (or nightmares), and is associated with desynchronized and fast brain waves, eye movements, loss of muscle tone, and suspension of homeostasis.

**Duration of sleep:**

Duration of sleep, according to age:

Birth to 1 month - 18-20 hrs.

1-6 months - 15-18 hrs.

6 months - 1 year 14-16 hrs.

1-2 yrs. - 12-14 hrs.

2-5 yrs. - 10-12 hrs.

5-16 yrs. - 9-10 hrs.

Adults - 8 hrs.

Old persons - 4-6 hrs.

**Benefits of Sleep:**

- 1) Sleep plays a critical role in supporting the emotional centers of the brain—as well as overall emotional and behavioral health

- 2) Properly and timely taking sleep brings the happiness, nourishment, strength, virility, knowledge and maintains the life (Ch.Su. 21136).
- 3) As the real knowledge brings about siddhi in a yogi similarly properly intake of sleep brings about happiness and longevity in human beings (Ch.Su. 21138).
- 4) Proper sleeping at the night time makes the balance of the body constituents (Dhatusamyata) and provides alertness, good vision, good complexion, good strength and good digestive power ( Y.R. & B.P. Pu. Kh.)
- 5) Persons who intake proper sleep in proper time will not suffer from diseases, their mind will be peaceful, they will gain strength, good complexion, good virility, attractive body and they will not be too lean or too fatty and they live good 100 years (Su.Sha. 4/40 and Su.Chi. 14/88).
- 6) Sleep is important for temperature regulation, maintaining hormonal imbalance and maintaining heart rate.

**Position of sleep:**

Ayurveda advises to rest on the left side after the meals. When you sleep on your left side, it aids your digestion. *How?* In our body there are two main energy channels (nadi) called *Ida* (moon) and *Pingala* (solar nadi). Breathing through *Ida* (which goes through the left nostril) brings calmness to your body and mind. Breathing through *Pingala* (right nostril) energizes and stimulates your whole being (including your digestive fire). The air always comes through one of the nostrils at a time, producing the corresponding effect. Now, when you sleep on your left side, *Pingala* is at work, which means that the air gets into your body through the right nasal passage. Thus, you get more energy, your digestion and metabolism increase. So, Ayurveda advises to rest on the left side after the meals (well, actually not immediately; firstly, you need to walk about 100 steps before lying on the side of your body).

When you are on that side of the **foree** body, *Ida* nadi is working, so it calms you down and serves as a good way to beat insomnia (though not the only one, of course).

Your sleep is sound, deep and rather peaceful. Waking up is refreshing. Therefore, the

right side is, probably, the best position for the restful sleep.

**Polysomnography**, also called a sleep study, is a test used to diagnose sleep disorders. Polysomnography records your brain waves, the oxygen level in your blood, heart rate and breathing, as well as eye and leg movements during the study. Key physiological methods for monitoring and measuring changes during sleep include electroencephalography (EEG) of brain waves, electrooculography (EOG) of eye movements, and electromyography (EMG) of skeletal muscle activity. Simultaneous collection of these measurements is called polysomnography, and can be performed in a specialized sleep laboratory.[11][12] Sleep researchers also use simplified electrocardiography (EKG) for cardiac activity and actigraphy for motor movements.[12]

#### **Conclusion and discussion:**

Ayurveda has given more importance to Nidra (Sleep) by considering it one among three pillars of life. Sleep is a natural time for the body and mind to rest, reset, detoxify, and rejuvenate. Sleep is important for proper brain functioning and supporting emotional centers in brain.

Detailed descriptions regarding physiology of Sleep are available in Ayurveda and Upanishadas. In modern science, sleep is divided into NREM and REM which involves five stages. Brain uses significantly less energy using sleep and stores ATPs in the brains. Polysomnography is the sleep study use to determine the quality of sleep and sleep disorder. So sleep is not just a phenomenon to ignore but it has great impact on our body and so study of sleep phenomenon is important to early diagnosis of sleep disorder.

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