



International Journal of Applied Ayurvedic Research ISSN: 2347- 6362

AN ASSOCIATION OF *NIDRA* AND EFFECTS ON *SHUKRADHATU*
W.R.T. REDUCED SPERM QUALITY-A REVIEW

¹Neeraj R. Pathak,

²Kiran.M. Shah

¹PG Scholar, ²HOD, Samhita and Siddhanta, Smt K.G.M.P. Ayurvedic Mahavidyalaya Charni Road Mumbai

ABSTRACT:

Today in this era of competitive world one has to work extra mile in order to sustain in this world. To do this, one starts on compromising on his daily dose of sleep. Sleep deprivation is now being recognized as an increasingly common condition. However, very little is known about how fertility is affected by sleep quantity and quality i.e. to what degree, and by what mechanisms, do *Nidra* (sleep) and/or its disturbances affect fertility. Ayurveda is an eternal system of medicine well known for its multi-dimensional and holistic approach towards humankind. Utility of Ayurveda starts right from *shrushti utpatti* (creation origin) until death. *Nidra* (Proper Sleep) is one of the *trayopasthambhas* (Triads of Health) that is described in classical Ayurveda texts on which the *traya-sthambha* i.e. *vaat*, *pitta*, *kapha* are dependent. According to *Acharya Kashyap*, a good quality sleep at proper time is the characteristics of a healthy man. Taking improper or inadequate *nidra* as per requirements on a regular basis affects once mental, physical, emotional well-being. Several studies have found a relationship between sleep and morbidity, mortality, fertility of an individual. The objective of this review is to synthesize that how sleep disturbances is related to reproductive capacity, according to the ancient literature. This article aims to study the relationship between *nidra* and its effects on *shukradhatu* (Reproductive tissue). Thus, new avenues for clinical intervention about how sleep disturbance is associated with infertility may be possible.

Keywords: Infertility, Sleep, *Kleebata*, *Shukra-kshaya*, *Trayopasthambha*, *Shukra*

INTRODUCTION: Nowadays due to changing lifestyle and competitive atmosphere in the society, man had to work for several hours due to which the demarcating line between day and night is seen to blur away. Sleep deprivation is now being recognized as an increasingly common condition inherent to modern society ^[1]. So, sleep loss is not only a social issue but it's also leading to large number of human disorders including male reproductive impairment^[2]. It has been found that frequency of sleep disturbance in this industrialized world has resulted in the decline in semen quality.^{[3][4]} Ayurveda being the most ancient science of life has its aim of not only just curing the disease but also

preventing them on the whole. Ayurveda emphasizes on keeping equilibrium in between all physiological activity and mind. To do this Ayurveda considers *traya-stambha* of *vaat*, *pitta*, *kapha* which is responsible for structural and functional activity of the body. These *traya-stambha* i.e. *vaat*, *pitta*, *kapha* are dependent on *trayopasthambha* (Triads of Health). The *trayopasthambha* includes *aahar* (Diet), *nidra* (Sleep), *brahmacharya* (Celibacy). Acharyas correctly recognized the constrictive power of proper sleep it helps in endowing strength, complexion, fertility, knowledge until full span of one's life.^[5] *Acharyas* also quotes the merits and de-

merits of sleep and mentioned *kleebata* (Infertility) dependent on sleep^[3].

Definition of Nidra: Acharya Charaka has explained the process and defines the *nidra* as a condition when the mind as well as the soul gets exhausted or becomes inactive the individuals goes into a state of cut-off from the external world this state is called as *Nidra*^[6]. Acharya Sushruta quotes that *nidra* is condition where the *hrudaya* (Heart) get covered by *tama* (destructive quality)^[7] and the body gets cut-off from external world the individual goes into sleep. As per Acharya Vagbhata, when *manovah strotas* (channel of circulation) becomes accumulated with *sleshma* and the mind is devoid of senses due to fatigue of sensory organs, individual goes into sleep.^[8]

Definition of shukra: Shukra (Semen) is the last *dhatu* (tissue) of the seven *dhatu*s (biological tissue of the body)^[9] mentioned by the Acharyas, *shukra* is also considered as the *daspranayatanani* i.e shelter of *prana* (life)^[10]. It is the purest of all *dhatu*s formed by the *saar-bhaga* (pure extract) of all the *dhatu*s and does not have any *mala-bhaga* (Waste product). The *shukra* is said to be *Beeja* (the germ of), and is meant for production of *garbha* (Embryo).

The physical characteristics of ejaculated semen during the time of intercourse are almost similar to the *lakshanas* (Characteristics) of *shuddha shukra* (Quality se-

men). In Ayurvedic texts there is no direct reference of sperm but Acharya Chakrapani in its commentary on Acharya Charaka describes the *roopa dravya* (Physical characteristics) of *shukra* can be considered semen as subtle as sperm^[11]. Few functions of *shukra* like *bala* (Strength), *virya* (Potency), *varna upachaya* (Complexion) coincides with the functions of androgen and also with the functions of *nidra*.

A number of studies have been made on effects of sleep and reproductive health in recent years. Several reports suggest that sleep duration and its association with male androgen. A few studies have examined the relationship between sleep pattern and semen quality, in cross-sectional study among young Danish men from the general population, an inverse U shape curve association was obtained between self-reported sleep disturbance and semen quality. A similar observation was found in Chongqing province of China.^[12]

Relationship between Nidra and Shukradhatu:

Functions of nidra:^{[13][14][15]} A proper *nidra* provides individuals with happiness, nourishments to body and mind, power, virility, knowledge of correct and wrong and longevity to life. Acharya Sushruta adds that regular proper sleep promotes nourishments, increases *agni* (digestive fire) and maintains equilibrium.

Following table can be prepared for merits and demerits of proper *nidra*.^[5]

Merits of proper <i>nidra</i>	Demerits of improper <i>nidra</i>
Provides <i>sukha</i> (Happiness)	Causes <i>dukha</i> (Sorrow)
Provides <i>pushthi</i> (Nourishment)	Causes <i>karshya</i> (Emaciation)
Gives <i>bala</i> (Strength)	Causes <i>abala</i> (loss of power, weakness)
<i>Vrushta</i> (Aphrodisiac)	Causes <i>kleebata</i> (Infertility)
<i>Gyana</i> (Knowledge)	<i>Agyan</i> (Unknowledgeable/ Darkness)

Life	Cause of death
Balances <i>dhatu</i> (Biological tissues)	<i>Jrumbha</i> (excess of yawning)
Alertness	<i>Angamarda</i> (bodyache)
<i>Varynaya</i>	<i>Tandra</i> (Tiredness)
Nourishment to <i>indriya</i> (sense organs)	<i>Shiroroga</i> (head related complaints)
Improves <i>agni</i> (digestive fire)	<i>Netraroga</i> (eye diseases)

Functions of Nidra on Shukradhatu:^[16]

Shukradhatu- Vrushta and utsaha

Effects of Nidra on Doshas:^[17]

Vata-Vridddhi: Nidrabhransha, nidranash.

Vata-Kshaya: Nidra, atinidra

Pitta-Vridddhi: Alpanidra

Kapha-Vridddhi: Atinidra, nidra, tandra

Nidra – one of the Adharniya vega:

Acharya Charak in *sutrasthan* stated 13 natural urges, one should never suppress these natural urges and *nidra* is one of them.^[18] Charkacharya mentioned the diseases caused due to suppression of *nidra*, excess yawning, body ache, drowsiness, various diseases of eyes and head, etc.^[19]

Thus staying awake at night causes *vata prakopa* and *agnimandya* (loss of digestive fire). Acharya charaka mentions following diseases caused due to improper sleeping schedule: *halimaka* (form of anaemia/ jaundice), *shirshul* (headache), *gurugatrata* (laziness/Heaviness in body), *jwara* (fever), *kaasa* (cough), *indriya asamarthyia* (loss in function of sense organs).^[20] Acharya Charaka compares improper sleep to the night of destruction which takes away both happiness and life of an individual and causes ultimate demise of the individual who either takes excess or no sleep at all.^[21]

Thus it becomes clear from the above discussion that sleep have important role in maintaining equilibrium of the body i.e. homeostasis. Also the balance of *dhatu*s in our body is also much more depends on sleep. Proper sleep is responsible for

*dhatu*samyā and nourishment of the body, increase strength and stability of life.

But this above synchrony will be broken if there is improper *nidra*. Due to improper sleep, the above said *doshas* taking part in physiology of *nidra* gets vitiated and thus leading to improper balance in *dhatu*samyā which in turn have impacts on the quality of *shukradhatu*.

Lack of *nidra* leads to vitiation of all three *doshas* viz. *Vata*, *pitta*, *kapha* and that ultimately leads to various health problems like yawning, body aches, *tandra*, loss of concentration and digestion problems.^[17] The vitiated *vata*, causes *Nidrabhransha, nidranash* which in turn disturbs the function of *nidra* on all *dhatu*s and thus also vitiates the function of *nidra* on *shukradhatu* i.e. *Vrushta* and *utsaha*.^[16]

Due to improper *nidra* there occurs *Vata prakop* mainly *apana vayu* have its effects on *shukradhatu*:

Apana vayu- control of *Shukra nishkramana kriya* is functions of *apana vayu*. Thus vitiated *apana* loses this control i.e. *upaghata* of these factors.^[22]

DISCUSSION: HPA (Hypothalamic pituitary axis) activation may directly interfere with the production of semen and sperm as deranges production of follicle stimulating hormones from the pituitary.^[23]

Sleep interferes with the TSH level also. It is seen that TSH appears to increase prior to sleep onset and continues to increase over the course of the sleep period and then decrease during the day. But under

acute sleep deprivation TSH increases, whereas under extended sleep deprivation, TSH may become diminished.^[24] This interfere in the metabolism of the body thus hampering the production of healthy bodily *dhatu*s (biological tissues).

Sleep also interfere with the production and its functions it has been found that the level of FSH is lower by 20% in individuals who are short sleepers as compared to long sleepers where age and BMI were controlled.^[25]

Sleep duration and androgen concentration is positively in an inversely proportionate manner. Men with acute sleep restriction (those who sleep less than 4 hrs) and those with moderate sleep restrictions (those who sleep between 4 to 6 hrs) had significantly lower androgenic concentration as compared with the individuals taking enough sleep of 7 to 8 hrs.^[26] Sleep also interferes with the cytokine and immune response. Individuals taking less sleep have higher level of IL-6, CRP, TNF. Such raised level of IL-6, CRP are observed in individual with unexplained infertility.^[27] This might be due to the infections of the genital tract which is considered as the common causes of male fertility disorders.^[28]

It was also found that individuals with sleep deprivation have low sperm motility as compared to other individuals.^[29]

CONCLUSION: It was observed through various literary as well as clinical articles that *nidra* (sleep) has a positive effect on the *shukra dhatu* (Reproductive tissue). Hence for treating the individuals with low sperm counts or motility of the sperm one has to consider sleep cycle of the individual as well as the medicinal aspect. A further study can be done for individuals those who cannot work upon their sleep

cycles so that they can overcome the adverse effect of their working hours on their health.

REFERENCES:

- 1) Niederberger C.: Re impairment of male reproductive functions after sleep deprivation. J. Urol, 2015; 194:1712.
- 2) Liu.M – M. et al.: Effect of sleep time on sperm quality; Med Sci Monit, 2006.
- 3) Ramharsh Singh: Charaka Samhita, Chakrapani tika; Chaukhamba Sanskrit Pratishthan, Sutrasthan 21/36:2017, Pg 118.
- 4) Anna Moreswar Kunte and Krishna Ramchandra Shashtri Navre; Ashtang Hruday; Sarvangsundar tika of Arundatta and Ayurved Rasayana of Hemadri; Chaukhamba Sanskrit Pratishthan; Sutrasthan 7/53; page no. 140.
- 5) Dr. Brahmanand Tripathi, Charaka Samhita, Su21/36, Chaukhamba Surbharti Prakashana; Varanasi, 2013, Vol-1, p406-407
- 6) Vidyadhar Shukla, Ravidatta Tripathi; Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan; 2011; Su21/35; pg .304.
- 7) Priyavat Sharma, Anantram Sharma; Sushrut Samhita, Sushrut Vimarshini Hindi Vakhyas; Chaukhamba Surbhartati Prakashan; 2015; Sharirasthan 4/33, pg . 56.
- 8) Priyavat Sharma; Ashtang Sangraha of Vagbhata text with English translation; Chaukhamba Surbharati Prakashan; 2011, Sutrasthan 9/20, page no. 224.
- 9) Vidyadhar Shukla, Ravidatta Tripathi, Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan, 2011, Su28/4, pg no. 427.
- 10) Vidyadhar Shukla, Ravidatta Tripathi, Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan, 2011, Su29/3, pg. 435.
- 11) Vidyadhar Shukla, Ravidatta Tripathi, Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan, 2011, Chikitsasthan 30/145, page no. 757.
- 12) Jensen TK, Andersson AM, Skakkebaek NE, et al. Association of sleep

disturbances with reduced semen quality: a cross-sectional study among 953 healthy young Danish men. *Am J Epidemiol* 2013; 177:1027–37.

13) Sushruta Samhita with Sushruta Vimarishini Hindi commentary by Anantram Sharma; volume -; Chaukhamba Surbharati Prakashan, Varanasi;2015;Chikitsasthan24/88;pg 364.

14) Sushruta Samhita with Sushruta Vimarishini Hindi commentary by Anantram Sharma; volume -; Chaukhamba Surbharati Prakashan, Varanasi;2015;Sha 4/39;pg no.58.

15) Priyavat Sharma; Ashtang Sangraha of Vagbhata text with English translation; Chaukhamba Surbharati Prakashan;2011, Su 9/22,pg. 204.

16) [https://shodhganga.inflibnet.ac.in/bitstream/10603/213755/9/09 chapter%204.pdf](https://shodhganga.inflibnet.ac.in/bitstream/10603/213755/9/09%20chapter%204.pdf)

17) Tripathi Ravidatta, Vagbhata, Astanga Hrudaya, Su 7/64, Chaukhamba Sanskrit Pratishthana, Delhi, 1st edition, 2009, p. 130

18) Vidyadhar Shukla, Ravidatta Tripathi, Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan, 2011, Su7/3-4, pg. 121.

19) Vidyadhar Shukla, Ravidatta Tripathi, Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan, 2011, Sutrasthan 7/23, page no. 124.

20) Vidyadhar Shukla, Ravidatta Tripathi, Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan, 2011, Sutrasthan 21/46-49, page no. 306.

21) Vidyadhar Shukla, Ravidatta Tripathi, Charak Samhita vol.1; Chaukhamba Sanskrit Pratishthan, 2011, Su21/37, p 304.

22) Tripathi Ravidatta, Vagbhata, Astanga Hrudaya, Sutra Sthana 12/9, Chaukhamba Sanskrit Pratishthana, Delhi, first edition, 2009, p. 190

23) Champagne D. Should fertilization treatment starts with reducing stress? *Hum*

*Reprod.*2006; 21:1651-8.

24) Van Cauter, E.; Tsali, E. Endocrine physiology in relation to sleep and sleep disturbances. In: Kryger, MH; Roth, T.; Dement, WC, editors, Principles and Practice of Sleep Medicine5, Elsevier; 2011.

25) Touzet S, Rabilloud M, Boehringer H, Barranco E, Ecochard R. Relationship between sleep and secretion of gonadotropin and ovarian hormones in women with normal cycles. *Fertil Steril.* 2002; 77:738–738 [PubMed: 11937126]

26) [Goh VH, Tong TY. Sleep, sex steroid hormones, sexual activities, and aging in Asian men, *J Androl.* 2010; 31:131–131 [PubMed: 19684340]

27) Demir B, Guven S, Guven ES, Atamer Y, Gul T. Serum IL-6 level may have role in the pathophysiology of unexplained infertility. *Am. J Reprod Immunol.* 2009; 62:261–261 [PubMed: 19706022]

28) Sleep deprivation and late bedtime impair sperm health through increasing antisperm antibody production: A prospective study of 981 healthy men, Mei-Mei Liu, 2017 Apr 16

29) Urogenital infection as a risk factor for male infertility, Hans-Christian Schuppe, Prof. Dr. med, Adrian Pilatz, PD Dr. med. & Wolfgang Weidner Prof. Dr. med.

Corresponding Author: Dr. Neeraj R. Pathak, PG Scholar, Samhita and Siddhanta, Smt K.G.M.P. Ayurvedic Mahavidyalaya Charni Road Mumbai
Email: neerajpathak3011@gmail.com

Source of support: Nil Conflict of interest: None Declared

Cite this Article as : [Neeraj R. Pathak et al : An Association of Nidra and Effects on Shukradhatu W.R.T. Reduced Sperm Quality-A Review] www.ijaar.in : IJAAR VOL V ISSUE IV SEP-OCT 2021 Page No:271-275