

“Sleep Medicine: An Emerging Speciality”

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In a normal night's sleep, a person goes through four stages of sleep cycle. These include one of rapid eye movement sleep (REM) and three of non REM (NREM) sleep.¹ The NREM sleep further consists of three stages, stage 1 usually lasts for 1-5 mins and also termed as the ‘dozing off’ stage. As the person moves through further sleep cycle and goes into stage 2 of NREM that leads to muscle relaxation, drop in temperature and slow breathing and heart rate. Stage 2 sleep lasts for 10-25 minutes during the first sleep cycle and every N2 stage may become longer during the night. Overall, a person typically spends about half of his sleep time in N2 sleep. It is difficult to wake up a person from the N3 stage of sleep as it's the deeper sleep as the muscle tone, pulse and breathing rate decrease further, brain activity in this stage shows delta waves and hence this is also called as delta sleep or slow wave sleep. This stage lasts for 20-40 mins in each sleep cycle. These stages keep on getting shorter further sending the person in REM sleep. During REM sleep, even though the eyes are closed, they can be seen moving quickly, hence the name. The body experiences atonia with two exceptions of the eyes and the muscles that control breathing. Under normal circumstances, a person does not enter REM sleep stage until for about 90 minutes after sleep.²

REM sleep is essential for cognitive functions like memory, learning and creativity. REM sleep is the sleep of vivid dreams, owing to the increase in brain activity. Though dreams can occur in any sleep stage, but they are less common and intense in the NREM. REM stages get longer as the night goes further.³ Regular 6-7 hrs of sound sleep is essential for health. We usually experience disturbed sleep patterns during travel across time zones, change in work shifts, students while studying late during exams or even teenagers when they use excess of mobile phones till late nights or in elderly due to age. Such events lead to lethargy, decreased ability to work, personality disturbances, impaired cognitive function and even depression.⁴

Inadequate sleep leads to decrease concentration and memory, gastric disturbances and hyperacidity, obesity and diabetes have also been linked to poor sleep. Poor sleep hygiene in adolescents leads to disturbed homeostatic mechanism, delayed secretion of melatonin and disturbed sleep-wake cycle.

Sleep deprivation may lead to disturbed sleep patterns. Some people tend to fall asleep instantly at night, which indicates severe sleep deprivation. Even falling asleep during the day, getting over impulsive and unable to concentrate are the red flags of extreme sleep deprivation.⁵ It is best to maintain proper sleep hygiene which is determined by good sleeping environment and behaviour. It's important to maintain a balance between the body's internal clock and the environment. These days, TV sets and web series keep people busy throughout the night leading to late night sleeping and day time sleeping leading to a disturbed internal body clock. The best ways to improve sleep hygiene is to stick to a schedule time of sleep, avoid alcohol, nicotine or caffeine which activates the brain. Walking or cycling for 10mins before sleep, reading a good book, listening soft music and keeping the bedroom dark and comfortable.⁶

Sleep labs function all over the world, polysomnography (PSG) being the gold standard test for the same. Wide across the country the concept of sleep labs has evolved and sleep clinics developed. Sleep labs give an insight of sleep wakefulness cycle, PSG, multiple sleep latency tests, CPAP titration, daytime maintenance of wakefulness test, split study, epilepsy monitoring and home sleep study among others.⁷ The ISSR has achieved a milestone in developing these clinics across the country at reputed institutions and offers various courses and workshops.⁸ Further establishment and development of sleep labs will give a boost for effectively managing sleep disorders across the world.

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REFERENCES

1. What is "normal" sleep? [Internet]. InformedHealth.org [Internet]. Institute for Quality and Efficiency in Health Care (IQWiG); 2016 [cited 2022 May 26].
2. Ayyar VS, Sukumaran S. Circadian rhythms: influence on physiology, pharmacology, and therapeutic interventions. *J Pharmacokinet Pharmacodyn*. 2021 Jun;48(3):321–38.
3. Peever J, Fuller PM. The Biology of REM Sleep. *Curr Biol*. 2017 Nov 20;27(22):R1237–48.
4. Papadopoulos D, Sosso F, Khoury T, Surani S. Sleep Disturbances Are Mediators Between Socioeconomic Status and Health: a Scoping Review. *International Journal of Mental Health and Addiction*. 2022 Feb 20(1); 480-504
5. Ramar K, Malhotra RK, Carden KA, Martin JL, Abbasi -Feinberg Fariha, Aurora RN, et al. Sleep is essential to health: an American Academy of Sleep Medicine position statement. *Journal of Clinical Sleep Medicine*. 17(10):2115–9.
6. Hauri PJ. *Sleep disorders*. Routledge; 2021 Sep 30.
7. Kumar VM, Mallick HN. Early History of Sleep Research and Sleep Medicine in India. *Sleep and Vigilance*. 2021 Jun;5(1):3-4.
8. Kumari R. ISSR Conference - National Sleep Medicine Course (NSMC) [Internet]. ISSR. [cited 2022 May 22].