



## Sleep Hygiene And Its Role In Overall Health

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Sleep is an indispensable part of human life with innumerable benefits. The Roman word for sleep is Somnus, the Greek word is Hypnos and in Hindu mythology the Goddess of Sleep is Nidradevi. In Goa the commonly used terms are gem or nid for sleep.

An adult requires 7 to 8 hours of sleep daily, a teenager needs 8 to 9 hours and a school child requires 9 to 10 hours. However many individuals do not achieve this recommended duration. A consistent sleep schedule is essential. Going to bed at the same time and waking up at the same time every day helps regulate the body's internal clock.

The sleeping environment plays a crucial role. The bedroom must be cool, dark and silent. It should ideally not have a television. If present one must avoid watching television or using laptops, mobile phones or screens for at least one hour before sleep. Reading a book or taking a warm bath is beneficial. Electronic screens emit blue light which disrupts the secretion of melatonin, a hormone released in darkness.

Consumption of alcohol or coffee before sleep should be avoided. Dinner should be moderate and not heavy. Good quality sleep ensures physical health, mental stability and emotional wellbeing. It provides rest and benefits the cardiovascular system, regulates blood pressure and enhances cognitive function and memory. Adequate sleep reduces stress, anxiety and depression and helps in tissue and muscle repair. Lack of sleep contributes to overweight and obesity. An afternoon nap of about one hour can be beneficial.

Sleep consists of 4 to 5 cycles each lasting around 90 minutes. The stages include Non REM sleep and REM sleep. The stages are N1 which is light sleep, N2, N3 which is deep restorative sleep and REM sleep where dreams occur. Deep sleep is particularly important for restoration.

Melatonin produced by the pineal gland induces sleep. Its release is triggered by darkness and it peaks between 2 am and 3 am. During sleep body temperature, heart rate and mental activity decrease leading to a calm state. Milk helps in melatonin production. Melatonin also has antioxidant properties, reduces cell damage and

improves immune and gut function. The gut also produces melatonin. Foods such as nuts, fish, eggs and milk promote its production.

During the COVID 19 pandemic routines were disrupted due to lockdowns, reduced social interaction and widespread uncertainty, illness and death. This led to disturbed sleep patterns in many individuals.

Globally average sleep duration varies. In India and China it is about 7 to 7.5 hours. In New Zealand and the Netherlands it is around 7 hours. In the USA it is also 7 hours. In Japan and South Korea it is approximately 6.5 hours and similarly in Saudi Arabia.

Sleep has a complex physiology. GABA acts as the primary inhibitory neurotransmitter during Non REM sleep while acetylcholine plays a role in REM sleep. During sleep blood pressure, heart rate and respiratory rate decrease. Metabolism slows down. Growth hormone and cortisol levels are reduced. Immune function improves and memory is consolidated.

Snoring occurs due to vibration of the upper airway and soft tissues such as the palate, uvula and pharyngeal walls. It is associated with high velocity turbulent airflow. Obese individuals tend to have louder snoring episodes. Yawning is an involuntary reflex involving deep inhalation, wide opening of the jaws and rapid exhalation lasting 5 to 10 seconds. It is regulated by the hypothalamus.

Sleep disorders are common. Insomnia refers to difficulty in falling asleep, staying asleep or waking up too early. Sleep related breathing disorders include sleep apnea. Hypersomnia refers to excessive daytime sleepiness. Other conditions include sleep walking, sleep talking, jet lag and disturbances due to shift duties.

In the author's experience young individuals with inadequate sleep have suffered heart attacks in their 40s. Another individual with sleep deprivation developed anxiety and depression and eventually committed suicide. These examples highlight the serious consequences of poor sleep.

In the elderly sleep is often fragmented and lighter. This may be due to arthritis, pain, nocturia, medications, anxiety, depression or loneliness. Certain medications can cause insomnia including pseudoephedrine, steroids, antidepressants, beta blockers used in hypertension, drugs used in asthma and medications for weight loss.

Sleep follows a circadian rhythm. Melatonin induces sleep while cortisol promotes wakefulness. Humans are diurnal and sleep at night. In contrast owls, bats and moths are nocturnal. The koala bear sleeps for 20 to 22 hours daily. It is often observed that individuals with high intellectual activity tend to sleep longer. Albert Einstein reportedly slept for about 10 hours a day.

World Sleep Day is observed on 13 March each year to highlight the importance of sleep. Sleep deprivation and sleep disorders increase the risk of heart disease, diabetes and depression. Studies indicate that approximately 25.7 percent of Indians suffer from insomnia.

Sleep deprivation has been described as one of the largest silent epidemics in the world. Many individuals resort to the internet instead of seeking medical advice for sleep problems. There is a need for proper counselling and education regarding sleep hygiene especially among the youth.

Sleep is of paramount importance for a healthy, happy and productive society. It is essential for maintaining physical health, mental balance and emotional wellbeing. Awareness regarding sleep hygiene, reduction in screen time and timely medical consultation can significantly improve quality of life.

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