Central Medical College Journal
Vol 6 No 1 January 2022
DOI: https://doi.org/10.3329/cemecj.v6i1.66412

EDITORIAL

PROPER TIMING AND QUALITY SLEEP MAINTAIN HEALTHY LIFE

Sleep is the State of unconsciousness from which a subject can be aroused by appropriate stimuli. Depending on EEG criteria - during each night we go through 2 types of sleep that alternate with each other, SWS (Slow-Wave Sleep) and REM (Rapid Eye Movement) sleep. SWS sleep is an exceedingly restful type of sleep. It is typically exemplified in the first hour of sleep that follows a prolonged period of sleep deprivation. With decrease in peripheral vascular resistance (10-30% decreases in BP), decrease in respiratory rate and Basal Metabolic Rate (BMR). Sometimes dreams, even nightmares, occur during SWS sleep. However, dreams are more characteristic of REM sleep. REM sleep also called Paradoxical Sleep. In this type of sleep the person makes rapid movements by his eyes, in spite of the fact that he is sleeping. In a normal night of sleep, episodes of REM sleep lasting 5 to 30 minutes usually appear on the average every 90 minutes. REM sleep is not as restful as SWS. When the person is extremely sleepy, each episode of REM sleep is short and it may even be absent. Conversely, as the person becomes more rested through the night, the durations of the REM episodes increase. In a young adult SWS (NREM sleep) occupies 75-80% of a night sleep time & REM sleep occupies 20-25% of the sleep time. This cycle is repeated at intervals of about 90 minutes throughout the 8 hours or so of night sleep.

The excitatory areas of the upper brain stem, the reticular activating system, simply fatigued during the waking day and became inactive as a result. This was called the passive theory of sleep. An important experiment changed this view to the current belief that sleep is caused by an active inhibitory process. It was discovered that transecting the brain stem at the level of the midpons creates a brain whose cortex never goes to sleep. In other words, a center located below the midpontile level of the brain stem appears to be required to cause sleep by inhibiting other parts of the brain. Complex pathways between the reticular formation of brainstem, diencephalon and cerebral cortex are involved in the onset and maintenance of sleep. Raphe nucleus is situated in lower pons and medulla. Activation of this nucleus results in non-REM sleep. It is due to release of serotonin by the nerve fibers arising from this nucleus. Serotonin induces non-REM sleep. Activation Locus Ceruleus of Pons c produces REM sleep. Noradrenaline released by the nerve fibers arising from locus ceruleus induces REM sleep. Melatonin (released from Pineal Gland) plays a role in day-night alternation of sleep. Alternating “Sleep-Wake Cycles” are under marked Circadian Control. Darkness (e.g., at night) stimulates the Pineal Gland to secrete the hormone melatonin .Melatonin inhibits the RAS & thereby induces SWS. Daylight falling on the retina stimulates the Suprachiasmal Nucleus (SCN) of hypothalamus. SCN inhibits melatonin secretion by the Pineal Gland & thereby it inhibits sleep and promotes wakefulness. Circadian rhythm also dictates your natural bedtime and morning wakeup schedules. Once one get used to going to bed and waking up at the same time each day, his or her brain adapts to this schedule.

Most experts recommend that adults get at least 7 hours of sleep per night. In an adult person daily requirement of sleep is about 6to 9 hours, its vary with age, in case of new born its about 15 - 20 hours, children 10 -15 hours, in old age 5 - 6 hours. Early to bed and wake up in the early morning matches our biological sleep pattern. The best time to go to sleep at night is a time frame in which one can achieve the recommended sleep for age group. Irregular sleep pattern may cause circadian rhythm off-balance. This can result in periods of daytime sleepiness. It is a sign of not getting enough sleep at night, and also one might experience accidents, irritability and forgetfulness. Not getting enough sleep on a regular basis can also lead to more long-term health consequences including hypertension, diabetes, heart disease, obesity, depression.

Overall, it’s best to go to bed earlier in the night and wake up early each day. Still, this type of sleep schedule may not work for everyone. It’s far more important to make sure to get enough good quality sleep. One can ensure this happens by going to bed and waking up at the same time every day. Talk to a doctor if you’re having trouble falling asleep at night, or if you continue to experience daytime sleepiness despite sticking with a consistent bedtime schedule. This could indicate issues with sleep quality, which could warrant further investigation and report required a lot of sleep disorder.

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