

# Sleep hygiene and good sleep habits: A review

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## Abstract

Adequate sleep is necessary for physical and mental well being. Sleep is influenced by multiple factors such as physiological, psychological, environmental and sociocultural factors. Sleep hygiene refers to the habits, environmental factors, and practices that may influence the length and quality of one's sleep. It is rarely effective when used alone, particularly in those with severe or chronic insomnia, but it makes the basis for more specific behavioral intervention. It is usually a component of Cognitive Behaviour Therapy treatment programs for insomnia. So, the most important step in non pharmacological treatment is the institution of proper sleep hygiene, or good sleep habits.

**Keywords:** Sleep, sleep hygiene, CBT.

## Introduction

Sleep is recognized as an important bodily function, even though the exact mechanism and purpose remain unclear<sup>1, 2</sup>. Sleep hygiene refers to the habits, environmental factors, and practices that may influence the length and quality of one's sleep.<sup>3</sup> It may be described as 'practicing behaviors' that facilitate sleep and 'avoiding behaviors' that interfere with sleep<sup>4</sup>. This includes general guidelines about health practices (e.g., diet, exercise, substance use) and environmental factors (e.g., light, noise, temperature) that may promote or interfere with sleep. This may also include some basic information about normal sleep and changes in sleep patterns with aging<sup>5</sup>. Inadequate sleep hygiene is defined in the International Classification of Sleep Disorders as a "sleep disorder due to the performance of daily living activities that are inconsistent with the maintenance of

good quality sleep and full daytime alertness."<sup>6</sup> These include bedtime, nighttime rituals, and disruptions to one's sleep. Most of these are usual norms but in the hustle and bustle of modern life are often neglected.

**Why is sleep important?** Without adequate sleep, one feels rundown, tired, irritable, impatient and depressed resulting in increased risk of accidents and stressed relationships. Poor sleep quality can result in excessive daytime sleepiness associated with significant socioeconomic consequences such as loss of productivity and increased road traffic accidents<sup>7-19</sup>. Nurses on night shift duty or irregular shifts tend to doze off more often while working compared to those who worked in normal day shifts<sup>20-22</sup>.

Sleep has a major role in both memory consolidation and brain plasticity<sup>23</sup>. Sleep spindle activity has been related specifically to improved memory recall<sup>24</sup>. Lack of sleep can cause impairment in memory and concentration. Uninterrupted sleep specially rapid eye movement (REM), sleep are necessary for learning, problem solving and memory consolidation.

Sleep loss has also been associated with high cortisol levels and poor glucose tolerance, resulting in poor

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insulin responses to hyperglycemia, a reaction characteristic of individuals in a prediabetic metabolic state who show insulin resistance<sup>25-26</sup>. A number of hormonal changes resulting from inadequate sleep time may result in greater calorie intake. The circadian fluctuations of blood leptin a hormone that reduces hunger and is depressed with lack of sleep peaks with normal sleep<sup>27</sup>. Sleep time reduction increases the hormone ghrelin, which increases hunger, appetite, and cravings for sweet, starchy, and salty snacks<sup>28-29</sup>.

There is ample evidence that inadequate sleep quantity and quality are linked to the lifestyle of teenagers<sup>30-31</sup>. Sleepiness may be a widespread problem in the school setting, where both suboptimal sleep duration and sleep disturbances are associated with reduced academic performance, including attention difficulties and increased absences<sup>32-33</sup>. Substance abuse is greater among teenagers with sleep related symptoms<sup>34-35</sup>. On the highway, more than 50% of driving accidents are caused by people under 25 years<sup>36</sup>. Importantly, disturbed sleep quality is associated with deficits in psychologic, behavioral, and somatic functioning and predicts the emergence of deficits in interpersonal and psychosocial functioning<sup>35,37-39</sup>. Although causal relationships have not been firmly established, these findings raise the possibility that adolescent academic, emotional, health, and behavioral problems may be prevented or meaningfully improved by interventions that result in increased quantity and quality of sleep<sup>40-41</sup>.

**Sleep Hygiene:** The first step in non pharmacological treatment is the institution of proper sleep hygiene, or good sleep habits. Sleep hygiene is rarely effective when used alone, particularly in those with severe or chronic insomnia, but it makes the basis for more specific behavioral intervention. Sleep hygiene measures are intended to strengthen the physiologic processes that govern sleep. Sleep hygiene measures also address issues of substance use and eating behaviors may interfere with sleep<sup>5</sup>.

Sleep hygiene a component of Cognitive Behaviour Therapy treatment programs for insomnia. Previous studies have determined that people who go to bed and rise at the same time each day, including the weekend, have higher quality of sleep and are less likely to report sleep deprivation<sup>42</sup>. There is good evidence that non-pharmacological treatments can improve sleep quality and reduce the use of sleep medications in older adults including elderly with dementia<sup>43-48</sup>. Sleep hygiene

recommendations, such as reducing daytime sleep and improving the sleep environment and routine, are widely recommended as a first intervention for improving the sleep of with dementia patients<sup>49-51</sup>.

## General Areas to Sleep Hygiene

**Circadian rhythm:** It greatly influences the quantity and the quality of sleep. The more stable and consistent the circadian rhythm is, the better is the sleep quality. This cycle may be altered by of various factors, including naps, bedtime, exercise, and especially exposure to light (from traveling across time zones to staring at that laptop in bed at night). Shift workers suffer from a worse sleep quality than day workers. Two to 5 day rotation shifts is the worst schedule for workers to tolerate, having the worst health and sleep quality. The employee working in a shift schedule is associated with a high possibility of sleep disordered breathing, exposed to a higher risk of developing poor general health and sleep quality. It is important to understand the impact of shift schedule and sleep breathing disorders on the worker's general and mental health. A better shift schedule is very important to improve the general health of the employee and the productivity of the company<sup>49</sup>.

**Aging :** After the age of 40, the sleep patterns changes, and there are many more nocturnal awakenings than at a younger age. It is known that the elderly with visual impairments are 30-60% more likely to have impaired nighttime sleep than those with unimpaired vision. Age related reduced photic inputs due to macular degeneration, cataracts and other pathology of the eye or neuronal losses at the level of the suprachiasmatic nucleus (SCN) play a role<sup>50</sup>. These awakenings not only directly affect the quality of sleep, but also interact with other conditions that may cause arousals or awakenings, like the withdrawal syndrome that occurs after drinking alcohol close to bedtime.

**Psychological stressors:** Psychological stressors like deadlines, exams, marital conflict, and job crises may prevent them from falling asleep or wake up from sleep. It takes time to "turn off" all the noise from the day. Working right up to the time one turns out the lights, or reviewing all the days events cannot one just "flip a switch" and drop off to a blissful night's sleep.

**Social or Recreational Drugs:** Social or recreational drugs like caffeine, nicotine, and alcohol has a larger impact on sleep than realized. Caffeine, which can stay

in the system as long as 14 hours, increases the frequency of awakening at night and decreases the total amount of sleep time. The effects of nicotine are similar to those of caffeine, with the difference being that at low doses, nicotine tends to act as a sedative, while at high doses it causes arousals during sleep. Alcohol may initially have sedative effect, making it easier to fall asleep; however, as it is metabolized and cleared from the system during sleep, it causes arousals that can last as long as two to three hours after it has been eliminated.

### **Sleep Hygiene: DO's and Don'ts**<sup>51-52</sup>

There are certain rituals that help in relaxing before sleep. This may include such things as a warm bath, light bedtime snack, a cup of hot tea, a glass of warm milk or a few minutes of reading a light, entertaining book or magazine, listening to soft music, making simple preparations for the next day. Hobbies such as knitting or jigsaw puzzles may also be helpful.

Establishing a regular bedtime and, in particular, a regular wake up time reinforces the circadian rhythm; in combination with avoiding napping, it allows for a normal build of sleep deprivation across the day to create a homeostatic need for sleep at night<sup>5</sup>. Regular times for meals, medications, chores, and other activities help keep the inner body clock running smoothly. The daily schedule should be followed regularly even on weekends and holidays.

Duration of sleep should be adequate to provide physical and mental rest. Sufficient sleep is the amount necessary to permit optimal daytime functioning<sup>53</sup>. A general guideline for adults is 7-8 hours of sleep a night. However, individual sleep requirement may vary from 6 to 10 hours. Adolescents need slightly more than 9 hours of sleep each night, although this varies slightly among individuals<sup>30</sup>. Older adults need similar to adult, but the sleep may be lighter and may include a brief nap during the day.

One should try to get rid of all his worries at bedtime. If it is difficult, one should find a time during the day to get all of his worries out of his system. Bedroom should be quiet, dark, and comfortable. The bedroom environment is important in that light, noise, and heat, all can disturb sleep<sup>5</sup>.

Bed should be used for only sleep and sex. All stimuli from bed room that are not associated with sleep should

be removed. Activities like eating, drinking, arguing, discussing a problem should be done elsewhere. Daytime outdoor natural light exposure is also helpful in synchronizing the body clock<sup>5</sup>. Light is important for body to produce melatonin which is a sleep promoting substance.

Regular exercise each day on a regular basis is also helpful. Periods of exercise should be around 20-30 minutes at least 3-4 days a week. Exercise should not occur within three hours of bed time, because the autonomic arousal accompanying exercise may delay sleep onset.

Medications should always be taken as per directions. It is helpful to take medications prescribed for sleep one hour before bedtime to have adequate effect and 10 hours before getting up to avoid daytime drowsiness. Understanding of sleep is also important and unrealistic expectations of sleep needs should not be nurtured.

Bed should not be used unless one gets sleepy. If someone is not sleepy or does not asleep after 20 minutes then he should do something relaxing in another room, to take his mind off of worries about sleep. This will relax his body and distract his mind. Once he feels sleepy again, he should go back to bed. Bedroom should not be a place to go when someone is bored.

Day time naps should be avoided. If one must take a nap, it should be kept short (less than one hour) and before 3 p.m. Bed sharing with children or pets should be avoided. Clock watching should not be done. Clocks with bright numbers are a distraction and obsessing over time, will just make it more difficult to sleep. Caffeine containing food products should be avoided after lunch. Coffee and tea are the obvious caffeine containing drinks but soft drinks like colas. also contain caffeine. Beer, wine, or any other alcohol containing drink should not be taken within 6 hours of bedtime. Cigarette other source of nicotine before bedtime should be avoided. Going to bed hungry or over full stomach can also disturb sleep.

**Cognitive Behaviour Therapy-** CBT for chronic insomnia has proven effective in a number of studies<sup>54-55</sup>. CBT includes three components: education, behavioural modification, and cognitive therapy<sup>54</sup>. CBT is first line treatment for chronic insomnia, including insomnia that is comorbid with medical and psychiatric disorders<sup>55</sup>. This treatment method is used exclusively for people who have problem sleeping because of some

psychological disorders. But what is more important here is that this treatment method is a comprehensive one. This includes a host of individual treatments like relaxation therapy, stimulus control therapy, sleep restriction therapy as well as cognitive therapy. Behavioral therapy can be used to cure insomnia separately as well as in combination with other medications<sup>5</sup>.

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