

Sleep Deficiency: The Major Effects

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**1** You stare at the clock, unsure whether you want sleep or morning to come faster. Your doctor has recommended that you stay in bed for a minimum of five hours a night and slowly add time as you begin to sleep. There hasn't been any improvement in the last two weeks and you're tired of feeling so gloomy all of the time. You can't seem to focus during the day because of your drowsiness, but as quickly as night comes, sleep won't. You might as well be spending that time accomplishing something productive. Other than feeling tired, your limited sleep hasn't had any serious effects on you—or has it?

**2** In the fast-paced world of today's society, those who are able to accomplish more while running on less sleep are often seen as successful. It is not until the effects of sleep deficiency are accounted for that a second look should be taken at this "successful" lifestyle. Many know sleep is beneficial, but fewer are aware of just how essential sleep is to our health. There is no defined amount of sleep that a person must receive to escape being sleep deprived; every individual requires a different quantity of rest to stay alert and healthy. There is, however, a general recommendation of sleep needed at specific ages. According to current research (see Table 1), many do not receive the amount of sleep recommended. No serious health consequences will occur if the necessary amount of sleep is not achieved for a short time, although the effects may be noticed the next day. Chronic sleep loss, on the other hand, can generate dire health results.

**3** Sleep deprivation can be caused by numerous factors. One simple cause that can often be linked with short term sleep deficiency is life's stress; once the stress or problem is resolved, the capacity to sleep returns. Medical and psychological conditions may also limit a person's ability to sleep. Symptoms such as nightmares or jerking leg movements, common in people who suffer from Post-Traumatic Stress Disorder, can wake a person in the night resulting in the inability to

fall back to sleep (“Insomnia,” 2007). A major schedule change or use of alcoholic or caffeinated substances can also make a person incapable of falling asleep. Ironically, stressing about the amount of sleep acquired is also a cause of lack of sleep. In fact, Dr. Simon Kyle (2016), a lecturer in Clinical and Health Psychology at the University of Manchester, stated that it was normal for people to be concerned about the outcome of sleep deficiency: “The findings of the Great British Sleep Survey tell us that 68% of poor sleepers surveyed were bothered by thoughts about how they would cope the next day” (para. 1). This is troubling, as lack of sleep can contribute to serious consequences to both the physical and mental health of an individual.

### **Physical Health Effects**

**4** One of the major benefits that sleep has on the body is a better ability to fight off infection, and a lack of sleep can have direct effects on the body. Cytokines, a hormone that fights infections, is released during sleep. As a result, people who receive less sleep are facing the day with a reduced immune system. According to research done by Sheldon Cohen at Carnegie Mellon University, those who sleep less than seven hours a night are three times more susceptible to flu and cold symptoms than those who receive over eight hours a night (as cited in Brody, 2013). People getting less sleep on a regular basis also have a shorter life expectancy. Studies have shown that those who receive less than five hours of sleep per night have a 15% mortality risk increase (“Sleep and Disease Risk,” 2007). The increase risk of death is generated from health factors and a greater capacity for accidents.

**5** Another result of sleep deficiency is weight gain. Not just the fact that those who sleep less have more time to eat, although that does play a role in weight gain, but not receiving necessary sleep throws numerous functions of the body off course. A lack of sleep changes the distribution of certain hormones such as leptin and ghrelin. Leptin, a hormone which produces

the sensation of being full, decreases with a lack of sleep while the hormone that controls appetite, ghrelin, is increased in production (Kyle, 2016). This causes those suffering from sleep deprivation to feel hungry more often and not recognize when they are finished eating. It also results in a desire for more sugary foods to satisfy the craving of a quick boost of energy (“Sleep and Disease Risk,” 2007). Those with sleep deficiency also tend to be too exhausted to exercise, keeping any extra calories as a consequence. With all factors considered, a good night’s sleep on a regular basis may assist in weight loss.

**6** An additional consequence of a lack of sleep is being prone to disease. Sleep deficiency has an influence on the whole body and how it performs. Various parts of the body are no longer able to process new information as quickly, causing changes in important bodily functions. One extensive symptom of a lack of sleep is raised blood pressure and heart rate. The rise of blood pressure increases the chances of hypertension, stroke, and heart disease (“Sleep and Disease Risk,” 2007). Limited sleep also affects the way the body processes glucose. When glucose is processed slowly, there is a higher risk of acquiring type two diabetes. Likewise, lack of sleep reduces the level of melatonin produced in the body, which is linked to an increase risk of breast cancer in women (Brody, 2013). All diseases that accompany sleep loss may have a reduced risk if regular recommended sleep is acquired.

### **Mental Health Effects**

**7** Just as being prone to certain physical diseases can be a result of poor sleep, a lack of rest can also cause mental disorders. After only one night of minimal sleep, the prospect can be temperamental and irritable; it’s not surprising that chronic sleep deprivation can cause long term mental disorders such as depression and anxiety. Sleep can produce the feeling of renewal and a sense of hope for a new day. When people are unable to receive that refreshed feeling, that sense

of hope fades away leaving depression. Low amounts of sleep likewise increase the levels of cortisol, recognized as the “stress hormone.” Increased cortisol consequently causes a person to feel increased amounts of stress a majority of the time (“Sleep and Disease Risk,” 2007).

Amplified anxiety and depression are catastrophic factors to substance abuse, initiating an incline of health problems further in life.

**8** Sleep plays a major role in mental health, not only in assisting to prevent emotional disorders, but to help the brain function properly as well. A lack of sleep slows down the brain and makes it more difficult to concentrate, make judgements, solve problems, and learn new information. During sleep is the period when the brain creates new pathways of learning and stores memories; therefore, those with limited sleep take more time to learn a task and have a lower chance of remembering what they have learned. *USA Today* reporter, Elizabeth Weise (2010), stated that if those who get less than six hours a night on average go without sleep for one night, their reaction time and abilities are ten times worse than if they would have received over eight hours a night before going without sleep for a night (para. 4). This is a terrifying thought as many prestigious members of our community are required to limit their sleep to perform their duties. Similarly, Jane Brody (2013), a Personal Health Columnist for *New York Times*, found, “In driving tests, sleep-deprived people perform as if drunk, and no amount of caffeine or cold air can negate the ill effects” (para. 19). In fact, research by the Department of Health and Human Services (2012) estimates that “100,000 car accidents and 1,500 deaths each year are caused from drowsy drivers because of impaired thinking.” It is clear that for safety reasons along with cognitive growth, sleep is an important factor in helping the brain to function properly.

**9** Many are unaware of the full effect sleep deprivation can have, but it truly is a dire issue in society. From physical health to mental health, getting sufficient sleep can prevent disease and enhance concentration. Sleep assists the immune system and increases the length of life expectancy. Sleep acts as a weight-loss program and fights mental disorders such as depression. Various factors play into the causes of sleep deficiency, but all sleep deficiency is solved in one way: sleep.

## References

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Table 1

*Amount of Sleep Recommended Within Age Groups*

<b>Age (years)</b>	<b>Recommended Amount of Sleep</b>
Newborns (0-2)	16–18 hours a day
Preschool-aged children (3-4)	11–12 hours a day
School-aged children (5-12)	At least 10 hours a day
Teens (13-19)	9–10 hours a day
Adults, including the elderly (20+)	7–8 hours a day

*Note.* Adapted from "How Much Sleep Is Enough," February 22, 2012, Department of Health and Human Services, National Institutes of Health, retrieved from <http://www.nhlbi.nih.gov/>