

REVIEW ARTICLE

Sleeplessness: Associated Disorders and Remedial Measures

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ABSTRACT

We all have some sense of the relationship between sleep and our ability to function throughout the day. After all, everyone has experienced the fatigue, bad mood, or lack of focus that so often follow a night of poor sleep. What many people do not realize is that a lack of sleep—especially on a regular basis—is associated with long-term health consequences, including chronic medical conditions like diabetes, high blood pressure, and heart disease, and that these conditions may lead to a shortened life expectancy. Additional research studies show that habitually sleeping more than nine hours is also associated with poor health. The expenditure of poor sleep is much greater than many people think: it may have profound consequences for our long-term health. Research has revealed that people who consistently fail to get enough sleep are at an increased risk of chronic disease, and it's on way to understand why? Treating sleep as a priority, rather than a luxury, may be an important step in preventing a number of chronic medical conditions. Lifestyle factors include not getting enough sleep, having an irregular sleep schedule, and using alcohol or certain medications. Of the more than 70 known sleep disorders, the most common are obstructive sleep apnea, insomnia, narcolepsy, and restless legs syndrome. Large numbers of individuals suffering from these sleep disorders are unaware of—and have not been diagnosed or treated for—their disorder. This article delineates about various chronic ailments associated to sleeplessness and their prolific remedies.

Keywords: Restful sleep; Rheumatoid arthritis; Diabetes; Wakefulness; Thermoregulation Insomnia; OSA; RLS; REM; Parasomnias; Enuresis; Sleep apnea

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INTRODUCTION

We spend about 1/3rd of our lives asleep. Nonetheless, people generally know little about the importance of this behavioral essential activity and natural part of every individual's life. Sleep is not just something to fill time when a person is inactive. Sleep is a required activity, not an option. Even though the precise functions of sleep remain a mystery, sleep is important for normal motor and cognitive function. We all recognize and feel the need to sleep. After sleeping, we recognize changes that have occurred, as we feel rested and more alert. Sleep actually appears to be required for survival. It's not normal for a person to be sleepy at times when he or she expects to be awake. Problem sleepiness may be associated with difficulty concentrating, memory lapses, loss of energy, fatigue, lethargy, and emotional instability. The prevalence of problem sleepiness is high and has serious consequences, such as drowsy driving or workplace accidents and errors (Xi *et al.* 2013).

Lifestyle factors and undiagnosed or untreated sleep disorders can cause problem sleepiness. Problem sleepiness may be associated with difficulty concentrating, memory lapses, loss of energy, fatigue, lethargy, and emotional instability. Problem sleepiness can be deadly. Approximately 100,000 automobile crashes each year result from drivers who were "asleep at the wheel." Crashes in which the driver falls asleep are especially common among young male drivers. One large study found that in over 50 % of fall-

asleep crashes, the driver was 25 years old or younger. In addition to the high risk of automobile crashes, problem sleepiness can cause difficulties with learning, memory, thinking, and feelings, which may lead to poor school and work performance and difficulty with relationships. Furthermore, problem sleepiness leads to errors and accidents in the workplace. Very few textbooks for high school students provide any scientific information about changes that occur in the body during sleep and how those changes affect our ability to move and think (Zhu *et al* 2011).

Of course, we've heard that a good night's sleep will help us perform better on a test the next day, but is this based on scientific fact, or is it just a continuing myth? The lack of information in textbooks may be due to the fact that sleep research is only recently gaining recognition. A great deal remains to be learned through scientific studies, including an answer to the key question, What is the function of sleep? Although its function remains unclear, research is providing a great deal of information about what happens in the brain and body during sleep and how the body regulates sleep. Sleep helps restore your brain. Without sleep, your brain function declines and ages faster. It has been recently discovered that your brain has a waste removal system they're calling the glymphatic system. It gets rid of waste the same way your lymphatic system clears toxins through your liver. The really interesting thing is that this system uses your glia cells and astrocytes, two types of brain cells. What we've learned is that while you sleep, "water channels" that flow between your neurons expand to take away waste and buildup.¹ Without sleep, you can't remove as much waste. Your brain then ages faster and deteriorates. That makes taking care of your glial cells important in preventing diseases like Alzheimer's (Mednick *et al* 2002).

To make sure you get enough sleep, Sleep in quiet and darkness: If you sleep with the TV or the light on, you are interfering with your brain's natural sleep cycle and production of sleep hormones like melatonin. Turn it all off and sleep in total darkness. Even blocking the light from under a door or covering the blue glow from an electronic device could stop you from waking up. Increase your thiamine intake: You might know it better as vitamin B1. It's well known for supporting healthy circulation in the brain. But studies show thiamine improves sleep patterns when you have enough. The best food sources are organ meats, yeast, peas, pork, beans, and sunflower seeds. To regulate sleep, I recommend 40mg a day. A good way to protect your glial cells so they can do their job of removing waste from your brain is with a plant compound called **luteolin**. In one study, luteolin almost completely protected glial cells from free-radical damage and inflammation ((Zhu *et al* 2011). It also improves memory and helps ease depression. You can get luteolin from eating celery, green peppers, the herb thyme, and in chamomile and yarrow teas. There's also a unique source of luteolin... it's from the resin bees use to make their honeycombs called propolis. You can find it in most health food stores. However, sleep and nutrition are just two of the many effective ways you can defend your brain against time and illness (Reimund 1994).

Significance of Sleep for Improved Functionality & Clinical Manifestations Incurring due to Lack of Sleep

Lack of sleep has been associated with increased blood pressure and cholesterol levels, both of which are among the greater risk factors for heart disease and stroke. Our heart can be healthier if we get between 7 and 9 hours of sleep each night. When our body is lacking sleep, it enters a state of stress. Body functions are on high alert. This increases blood pressure and causes the production of stress hormones. Stress hormones then, in turn, make it harder for us to fall asleep, while higher blood pressure, as mentioned above, increases the risk of heart attacks and strokes. By getting a good night's sleep we can break the circle of stress and counteract its effects on our body. The increase in stress hormones, caused by the sleeping disorders, has been associated with chronic inflammation disorders, such as periodontitis, atherosclerosis, rheumatoid arthritis, and even cancer, heart-related conditions, or diabetes. Chronic inflammation is also thought to be one of the causes of aging. A good night's sleep will make us feel more active and alert on the following day. Energy levels after a good sleep are higher, your mental awareness is more acute and you are more likely to smile more. A restful sleep session not only feels great, but it increases our chances for another good night's sleep next time we go to bed.

Researchers may have long been arguing on why we dream, but they do agree on the many processes that occur during sleep, among which something called memory consolidation. While the body is resting, our brain is busy processing our day, and making connections between events, feelings, experiences and memories. Sleeping time is the most important time for our brain to shape memories and make the connections, which can make it easier for us to retrieve those memories in the future. Researchers have found that people who sleep for less than seven hours per night are more likely to be overweight or obese. Lack of sleep affects the levels of ghrelin and leptin, the hormones responsible for regulating our appetite. So, to put it simply, if you want to stay in shape, get more sleep! Napping during the day is not only an effective and refreshing alternative to caffeine, but can also make us more productive³. After even a short sleep session, especially during the day, our mind regains focus and we can better tackle those

tricky mental challenges. Sleep can also trigger creativity. Just remember all those "Eureka" moments you've had, waking up after a short nap (Gopalakrishna *et al*, 2004).

Among the various biochemical substances affected by sleep, serotonin is perhaps the most famous one. Serotonin is a neurotransmitter that affects our mood. High serotonin levels create the feeling of happiness, and low serotonin levels can make us vulnerable to depression and other disorders. Making sure we are getting enough sleep, between 7 and 9 hours every night, will help us regulate serotonin levels, thus feeling happier and more productive. Sleep is the time for our body to repair any damage caused by stress, ultraviolet rays and other harmful exposures. During sleep, cells produce more protein which is used in repairing damaged cells. Muscle injuries and other trauma also heal faster during sleep.

HOW MUCH SLEEP ONE REQUIRE DAILY?	
Age Group	Requisite Sleep (Hours)
Newborns (0-2 M)	12 to 18
Infants (3-11 M)	14 to 15
Toddlers (1-3 yrs)	12 to 14
Preschoolers (3-5 Yrs)	11 to 13
School-age children (5-10 yrs)	10 to 11
Teens (10-17Yrs)	8.5 to .9.5
Adults	7 to 9

Source: National Sleep Foundation

Sleep loss and wakefulness. About 30 to 40 % of adults indicate some degree of sleep loss within any given year, and about 10 to 15 % indicate that their sleep loss is chronic or severe. In addition, millions of Americans experience problems sleeping because of undiagnosed sleep disorders or sleep deprivation. Adolescents and shift workers are at very high risk of problem sleepiness due to sleep deprivation and the desynchronized timing of sleep and wakefulness, respectively. Sleep and wakefulness are linked in part to the activity of the circadian clock. Recent studies show that individual preferences for morning and evening activity may have a biological basis.³⁷ In addition, studies show that adolescents experience a delay in the circadian timing system that results in a tendency for them to stay up later and sleep in later. Loss of sleep creates an overwhelming and uncontrollable need to sleep and affects virtually all physiological functions.

Sleep loss causes problems with memory and attention, complex thought, motor responses to stimuli, performance in school or on the job, and controlling emotions. Sleep loss may also alter **thermoregulation** and increase the risk for various physical and mental disorders. Many adolescents are chronically sleep-deprived and hence at high risk of drowsy-driving crashes. Sleep loss affects personal safety on the road. The NHTSA (National Highway Traffic Safety Administration) has estimated that approximately 100,000 motor vehicle crashes each year result from a driver's drowsiness or fatigue while at the wheel.²⁸ Driving at night or in the early to mid afternoon increases the risk of a crash because those are times that our biological clocks make us sleepy. Drowsy driving impairs a driver's reaction time, vigilance, and ability to make sound judgments. Many adolescents are chronically sleep-deprived and hence at high risk of drowsy-driving crashes. In one large study of fall-asleep crashes, over 50 % occurred with a driver 25 years old or younger.

Sleep Disorders

Problem sleepiness is feeling sleepy at inappropriate times.

Problems with sleep can be due to lifestyle choices and can result in problem sleepiness—that is, feeling sleepy at inappropriate times. Environmental noise, temperature changes, changes in sleeping surroundings, and other factors may affect our ability to get sufficient restful sleep. Short-term problem sleepiness may be corrected by getting additional sleep to overcome the sleep deficit. In other cases, problem sleepiness may indicate a sleep disorder requiring medical intervention. Alcohol abuse can cause or exacerbate sleep disorders by disrupting the sequence and duration of sleep states. Alcohol does not promote good sleep, and consuming alcohol in the evening can also exacerbate sleep apnea problems.

More than 70 sleep disorders have been described, the most common of which are (Everson CA, Laatsch, Hogg, 2005).

- **Insomnia**, the most prevalent sleep disorder, is characterized by an inability to fall asleep and/or by waking up during the night and having difficulty going back to sleep. Primary insomnia is more common in women than men and tends to increase with age. Short-term or transient insomnia may be caused by emotional or physical discomfort, stress, environmental noise, extreme temperatures, or jet lag, or may be the side effect of medication. Secondary insomnia may result from a combination of physical or mental disorders, undiagnosed or uncontrolled sleep disorders (that is, sleep apnea,

restless legs syndrome, narcolepsy, and circadian rhythm disorders), and effects of prescription or nonprescription medications. Treatment will differ for primary and secondary causes of insomnia. Treatment may include behavioral aspects, such as following a specific nighttime routine, improving sleep environment, reducing caffeine and alcohol intake, or reducing afternoon napping. Pharmacological treatments may alleviate symptoms in specific cases. Some individuals try to overcome the problem of insomnia by drinking alcoholic beverages. Alcohol inhibits REM sleep and the deeper, restorative stages of sleep, and therefore does not promote good, restful sleep. Obstructive sleep apnea is a potentially life-threatening disorder in which breathing is interrupted during sleep.

- **Obstructive sleep apnea (OSA)** is a potentially life-threatening disorder in which breathing is interrupted during sleep. An estimated 12 million Americans have OSA. This condition may be associated with bony or soft tissue that limits airway dimensions and is made worse in the presence of excess fatty tissue. Repetitive episodes of no effective breath, very shallow breaths, or adequate breaths but with high airway resistance can occur 20 to 30 times per hour or more. These episodes cause temporary drops in blood oxygen and increases in carbon dioxide levels, which lead to frequent partial arousals from sleep. Limitations in upper-airway dimensions are typically associated with chronic loud snoring. The frequent arousals result in ineffective sleep and account for the chronic sleep deprivation and the resultant excessive daytime sleepiness that is a major hallmark of this condition. Additional effects include morning headaches, high blood pressure, heart attacks, heart-rhythm disorders, stroke, and decreased life expectancy. OSA also occurs in children and is generally related to enlarged tonsils or adenoids. It occurs equally often in boys and girls and is most common in preschool-age children. Because many of the factors contributing to OSA appear to have significant genetic influences (such as bony dimensions of upper airways), genetic risk factors are likely important in the occurrence of OSA. Treatment for adult OSA can include behavioral therapy (losing weight, changing sleeping positions, and avoiding alcohol, tobacco, and sleeping pills), use of mechanical devices (continuous positive airway pressure to force air through the nasal passages, or dental appliances that reposition the lower jaw and tongue), and surgery to increase the size of the airway.
- **Restless legs syndrome (RLS)** is a neurologic movement disorder that is often associated with a sleep complaint. People with RLS have unpleasant leg sensations and an almost irresistible urge to move the legs. Symptoms are worse during inactivity and often interfere with sleep. RLS sufferers report experiencing creeping, crawling, pulling, or tingling sensations in the legs (or sometimes the arms) that are relieved by moving or rubbing them. Sitting still for long periods becomes difficult; symptoms are usually worse in the evening and night and less severe in the morning. Periodic leg movements, which often coexist with restless legs syndrome, are characterized by repetitive, stereotyped limb movements during sleep. Periodic limb movement disorder can be detected by monitoring patients during sleep. Some people with mild cases of RLS can be treated by exercise, leg massages, and eliminating alcohol and caffeine from the diet. Others require pharmacological treatment, and it may take some time to determine the right medication or combination of medications for the individual. Estimates suggest that RLS may affect between 10 and 15 % of the population.
- **Narcolepsy** is a chronic sleep disorder that usually becomes evident during adolescence or young adulthood and can affect both men and women. In the United States, it affects as many as 250,000 people, although fewer than half are diagnosed. The main characteristic of narcolepsy is excessive and overwhelming daytime sleepiness (even after adequate nighttime sleep). A person with narcolepsy is likely to become drowsy or to fall asleep at inappropriate times and places. Daytime sleep attacks may occur with or without warning and may be irresistible. In addition, nighttime sleep may also be fragmented. Three other classic symptoms, which may not occur in all people with narcolepsy, are **cataplexy** (sudden muscle weakness often triggered by emotions such as anger, surprise, laughter, and exhilaration), **sleep paralysis** (temporary inability to talk or move when falling asleep or waking up), and **hypnagogic hallucinations** (dreamlike experiences that occur while dozing or falling asleep). People with narcolepsy have difficulty staying awake, and in extreme conditions, narcoleptic episodes can occur during periods of activity. Narcolepsy is not the same as simply becoming tired or dozing in front of the TV after a day's work.

REM sleep in people with narcolepsy frequently occurs at sleep onset instead of after a period of NREM sleep. Consequently, researchers believe that the symptoms of narcolepsy result from a malfunction in some aspect of REM sleep initiation. Some scientists believe that the immune system causes narcolepsy by attacking the nervous system (that is, an autoimmune response). In this view, exposure to an unknown environmental factor results in an immune response against nerve cells in the brain circuits that control

arousal and muscle tone. The discovery of a narcolepsy gene in dogs indicates that genetic risk factors for narcolepsy may also be pertinent in humans.¹⁸ Studies of narcoleptic dogs suggest that altered receptors for a specific neurotransmitter in the hypothalamus can cause cataplexy and the other symptoms of narcolepsy. Many individuals with narcolepsy appear to have a deficiency of this hypothalamic transmitter. There is no definitive cure for narcolepsy, but several treatment options alleviate various symptoms. Treatment is individualized depending on the severity of the symptoms, and it may take weeks or months for the optimal regimen to be worked out. Treatment is primarily by medications, but lifestyle changes are also important. Sleep walking, sleep talking, and sleep terrors are more common in children than adults. Children generally have no memory of such events, usually do not require treatment, and usually outgrow the disorder (Cirelli, Tononi, 2000).

Parasomnias are sleep disorders that involve a range of behaviors that occur during sleep.³⁸ These include sleepwalking, sleep talking, **enuresis** (bed-wetting), and sleep terrors, which are NREM disorders that occur early in the night. Many of the parasomnias (including sleepwalking, sleep talking, and sleep terrors) are more common in children. Children generally have no memory of such events, usually do not require treatment, and usually outgrow the disorder. Enuresis may respond to drug treatment, and like other parasomnias in children, it generally resolves as the child becomes older. REM sleep behavior disorder is a parasomnia that occurs later in the night than NREM disorders. It differs from the parasomnias discussed previously because it usually affects middle-aged or elderly individuals. Frequently, sufferers will also have a neurological disorder. The temporary muscle paralysis that normally occurs during REM sleep does not occur in this disorder. Because the muscles are not paralyzed, individuals may act out potentially violent behaviors during sleep and cause injuries to themselves or their bed partners.

Exploring the Linkage between Sleep Extent and Unremitting Diseases

There are 3 main types of study that help us understand the links between sleep habits and the risk of developing certain diseases. The 1st type (called sleep deprivation studies) involves depriving healthy research volunteers of sleep and examining any short-term physiological changes that could trigger disease. Such studies have revealed a variety of potentially harmful effects of sleep deprivation usually associated with increased stress, such as increased blood pressure, impaired control of blood glucose, and increased inflammation. The 2nd type of research (called cross-sectional epidemiological studies) involves examining questionnaires that provide information about habitual sleep duration and the existence of a particular disease or group of diseases in large populations at one point in time. For example, both reduced and increased sleep duration, as reported on questionnaires, are linked with hypertension, diabetes, and obesity. However, cross-sectional studies cannot explain how too little or too much sleep leads to disease because people may have a disease that affects sleep, rather than a sleep habit that causes a disease to occur or worsen. The 3rd and most convincing type of evidence that long-term sleep habits are associated with the development of numerous diseases comes from tracking the sleep habits and disease patterns over long periods of time in individuals who are initially healthy (i.e., longitudinal epidemiological studies). We do not yet know whether adjusting one's sleep can reduce the risk of eventually developing a disease or lessen the severity of an ongoing disease. However, the results from longitudinal epidemiological studies are now beginning to suggest that this is likely.

Several studies have linked insufficient sleep and weight gain. For example, studies have shown that people who habitually sleep less than six hours per night are much more likely to have a higher than average body mass index (BMI) and that people who sleep eight hours have the lowest BMI. Sleep is now being seen as a potential risk factor for obesity along with the two most commonly identified risk factors: lack of exercise and overeating. Research into the mechanisms involved in regulating metabolism and appetite are beginning to explain what the connection between sleep and obesity might be. During sleep, our bodies secrete hormones that help to control appetite, energy metabolism, and glucose processing. Obtaining too little sleep upsets the balance of these and other hormones. For example, poor sleep leads to an increase in the production of cortisol, often referred to as the "stress hormone." Poor sleep is also associated with increases in the secretion of insulin following a meal. Insulin is a hormone that regulates glucose processing and promotes fat storage; higher levels of insulin are associated with weight gain, a risk factor for diabetes. Insufficient sleep is also associated with lower levels of leptin, a hormone that alerts the brain that it has enough food, as well as higher levels of ghrelin, a biochemical that stimulates appetite. As a result, poor sleep may result in food cravings even after we have eaten an adequate number of calories. We may also be more likely to eat foods such as sweets that satisfy the craving for a quick energy boost. In addition, insufficient sleep may leave us too tired to burn off these extra calories with exercise.

Researchers have found that insufficient sleep may lead to type 2 diabetes by influencing the way the body processes glucose, the high-energy carbohydrate that cells use for fuel. One short-term sleep

restriction study found that a group of healthy subjects who had their sleep cut back from 8 to 4 hours per night processed glucose more slowly than they did when they were permitted to sleep 12 hours. Numerous epidemiological studies also have revealed that adults who usually slept less than five hours per night have a greatly increased risk of having or developing diabetes. In addition, researchers have correlated obstructive sleep apnea—a disorder in which breathing difficulties during sleep lead to frequent arousals—with the development of impaired glucose control similar to that which occurs in diabetes. Studies have found that a single night of inadequate sleep in people who have existing hypertension can cause elevated blood pressure throughout the following day. This effect may begin to explain the correlation between poor sleep and cardiovascular disease and stroke. For example, one study found that sleeping too little (less than six hours) or too much (more than nine hours) increased the risk of coronary heart disease in women (Sigurdson and Ayas, 2007).

There is also growing evidence of a connection between obstructive sleep apnea and heart disease. People who have apnea typically experience multiple awakenings each night as a result of the closing of their airway when they fall asleep. In addition to these sleep disturbances, apnea sufferers also experience brief surges in blood pressure each time they wake up. Over time, this can lead to the chronic elevation of blood pressure known as hypertension, which is a major risk factor for cardiovascular disease. Fortunately, when sleep apnea is treated, blood pressure may go down. Given that a single sleepless night can cause people to be irritable and moody the following day, it's conceivable that chronic insufficient sleep may lead to long-term mood disorders. Chronic sleep issues have been correlated with depression, anxiety, and mental distress. In one study, subjects who slept four and a half hours per night reported feeling more stressed, sad, angry, and mentally exhausted. In another study, subjects who slept four hours per night showed declining levels of optimism and sociability as a function of days of inadequate sleep. All of these self-reported symptoms improved dramatically when subjects returned to a normal sleep schedule.

It's natural for people to go to bed when they are sick. Substances produced by the immune system to help fight infection also cause fatigue. One theory proposes that the immune system evolved "sleepiness inducing factors" because inactivity and sleep provided an advantage: those who slept more when faced with an infection were better able to fight that infection than those who slept less. In fact, research in animals suggests that those animals who obtain more deep sleep following experimental challenge by microbial infection have a better chance of survival. Studies have shown that alcohol use is more prevalent among people who sleep poorly. The reason for this is twofold. First, alcohol acts as a mild sedative and is commonly used as a sleep aid among people who have sleep problems such as insomnia. Second, the sedative quality of alcohol is only temporary. As alcohol is processed by the body over a few hours it begins to stimulate the parts of the brain that cause arousal, in many cases causing awakenings and sleep problems later in the night. Considering the many potential adverse health effects of insufficient sleep, it's not surprising that poor sleep is associated with lower life expectancy. Data from three large cross-sectional epidemiological studies reveal that sleeping five hours or less per night increased mortality risk from all causes by roughly 15 % (Hublin *et al* 2004).

To pave the way for better sleep, it's recommended that you and your family members follow these sleep tips:

- Establish consistent sleep and wake schedules, even on weekends
- Create a regular, relaxing bedtime routine such as soaking in a hot bath or listening to soothing music – begin an hour or more before the time you expect to fall asleep
- Create a sleep-conducive environment that is dark, quiet, comfortable and cool
- Sleep on a comfortable mattress and pillows
- Use your bedroom only for sleep and sex (keep "sleep stealers" out of the bedroom – avoid watching TV, using a computer or reading in bed)
- Finish eating at least 2-3 hours before your regular bedtime
- Exercise regularly.
- Avoid caffeine and alcohol products close to bedtime and give up smoking

CONCLUSION

It's not surprising that poor sleep is associated with lower life expectancy. Lifestyle factors and undiagnosed or untreated sleep disorders can cause problem sleepiness. Problem sleepiness may be associated with difficulty concentrating, memory lapses, loss of energy, fatigue, lethargy, and emotional instability. Furthermore, problem sleepiness leads to errors and accidents in the workplace. Of course, we've heard that a good night's sleep will help us perform better on a test the next day, but is this based on scientific fact, or is it just a continuing myth? The lack of information in textbooks may be due to the fact that sleep research is only recently gaining recognition. A great deal remains to be learned through

scientific studies, including an answer to the key question. To make sure you get enough sleep, Sleep in quiet and darkness: If you sleep with the TV or the light on, you are interfering with your brain's natural sleep cycle and production of sleep hormones like melatonin. Turn it all off and sleep in total darkness. Even blocking the light from under a door or covering the blue glow from an electronic device could stop you from waking up. Among the various biochemical substances affected by sleep, serotonin is perhaps the most famous one. Serotonin is a neurotransmitter that affects our mood. High serotonin levels create the feeling of happiness, and low serotonin levels can make us vulnerable to depression and other disorders. Making sure we are getting enough sleep, between 7 and 9 hours every night, will help us regulate serotonin levels, thus feeling happier and more productive. Sleep is the time for our body to repair any damage caused by stress, UV rays and other harmful exposures. During sleep, cells produce more protein which is used in repairing damaged cells. Muscle injuries and other trauma also heal faster during sleep. Researchers may have long been arguing on why we dream, but they do agree on the many processes that occur during sleep, among which something called memory consolidation. While the body is resting, our brain is busy processing our day, and making connections between events, feelings, experiences and memories. Sleeping time is the most important time for our brain to shape memories and make the connections, which can make it easier for us to retrieve those memories in the future. Researchers have found that people who sleep for less than seven hours per night are more likely to be overweight or obese. Lack of sleep affects the levels of ghrelin and leptin, the hormones responsible for regulating our appetite. So, to put it simply, if you want to stay in shape, get more sleep!

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