

Sleep, Mental Health, and Human Functioning: An Integrated Review

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Abstract: Sleep is a fundamental biological process essential for physical, cognitive, and emotional wellbeing. Across history, cultures have interpreted sleep in diverse ways, yet modern scientific research consistently demonstrates its central role in mental health, physiological restoration, and daily functioning. This paper integrates historical perspectives, physiological mechanisms, mental health associations, and lifestyle interventions by synthesizing two comprehensive documents on sleep. Evidence from psychiatric research, sleep science, and behavioral health demonstrates that sleep disturbances both contribute to and result from mental health disorders, forming a bi-directional relationship. The review concludes with practical strategies for improving sleep quality and reducing the burden of sleep related dysfunction.

Keywords: Sleep, Mental Health, Human Functioning

INTRODUCTION

Sleep is deeply intertwined with human health, cognition, and emotional stability. As one document states, *“Sleep and mental health are closely connected. Sleep deprivation affects your psychological state and mental health”*. Historically, sleep has been viewed as a spiritual, biological, and restorative process, and modern research continues to affirm its essential role in maintaining physical and mental well-being. This paper integrates historical, physiological, and clinical perspectives to provide a comprehensive understanding of why humans sleep, how sleep affects mental health, and how sleep disorders can be managed.

HISTORICAL BACKGROUND OF SLEEP

Even while our need for sleep has remained constant over the ages, our sleep patterns have evolved and changed. People from all walks of life and all times have made tremendous efforts to either make sleep more comfortable or to include sleep into their daily routines. How we conceptualize sleep has changed throughout time, both in reaction to new scientific evidence and as a result of cultural influences.

Almost every religion in the world attributes significant meaning to sleep and dreams, which have been there since the dawn of recorded history, often serving as a holy portal to enlightenment. ⁽¹⁾ In Genesis 28, God uses a dream to reveal his plan to Jacob:

To get some rest, he collected stones from the area, made pillows out of them, and went to bed there. Then he had a dream in which he saw the angels of God climbing and descending a ladder that had been built up on the ground and extended to the heavens. Above it all, the Lord appeared and spoke, saying, "I am the Lord God of Abraham, your father, and Isaac: the land where you dwell will be given to you and to your seed....."⁽²⁾

Sleep has also been regarded as a divine and sacred phenomenon in Indian spiritual traditions. In the Durga Saptashati, a revered Hindu scripture, the following verse highlights sleep as a manifestation of divine energy:

“या देवी सर्वभूतेषु निद्रा रूपेण संस्थिता।
नमस्तस्यै नमस्तस्यै नमस्तस्यै नमो नमः॥”

This verse translates to the idea that the Goddess resides in all living beings in the form of sleep, emphasizing that sleep is not merely a biological necessity but a universal power responsible for restoration, balance, and continuity of life. Such interpretations reflect how ancient traditions recognized sleep as both a physiological and spiritual process.

According to legend, the Greek philosopher and physician Alcmaeon (450 BC) was the first to propose a hypothesis on sleep. Sleep, he says, is a loss of awareness that happens as blood flows out of the body's surface veins and arteries. While his reasoning may seem oversimplified now, it was revolutionary when he developed it via careful observation and experimentation.

Sleep, according to Aristotle's beliefs put forward a century later (350 BC), is a period of bodily rejuvenation. Sleep, he said, "renders it unable to actualize its powers; arising of necessity...for the sake of its conservation." He maintains that the warm vapors that rise from the stomach during digestion are the direct cause of the beginning of sleep, as he thinks that the center of awareness lies in the heart.

Even more mysterious than sleep itself were and are dreams. Dream interpretation became a popular practice during the Enlightenment. In the early 17th century, a movement began among educated individuals to write down their dreams and their interpretations in personal

journals. This practice was established by scientists Louis Ferdinand Alfred Maury and Marie-Jean-Léon Lecoq, Marquis d'Hervey de Saint-Denis.

People back then thought of sleep as consisting of two distinct phases rather than a continuous one. ⁽³⁾ In *The Odyssey*, Homer makes a reference to the "first sleep," which is one of the first examples of segmented sleep. People would often play music, chat softly, relax, have sex, or do nothing during the interval between the two sleep cycles. For ages, this remained the situation.

People throughout the Industrial Revolution saw sleep as unimportant and a waste of time. According to David Randall, "backwaters filled with people who weren't fit for the industrialized world" were ridiculed when some areas stuck to their customary sleeping times.

Many people found that getting even six hours of sleep a night became impossible as working hours throughout the day began to be extended. Actually, the early labor movement was motivated by the growing workday and the fact that it came at the cost of sleep.

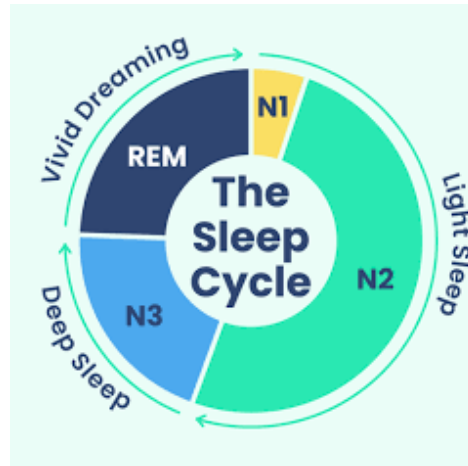
With the introduction of the 40-hour work week and the eight-hour work day in 1926, Ford was the first big American firm to do so. Despite modern society's rekindled interest in sleep, many people still dream of working a standard 40-hour week.

There were more than two hundred sleep institutes and laboratories in the United States by the 1990s, and the first peer-reviewed medical magazine dedicated to sleep was published in the 1970s. However, Simultaneously with our growing understanding of sleep, we faced the challenge of obtaining sufficient amounts, leading to the development of sleeping aids. The first one, barbitol, came out in 1903 and was an immediate success; by 1930, Americans were reportedly taking more than a billion sleeping pills annually. Even though the names have changed, the brands' appeal has grown. The United States sleep business is worth \$32 billion, with 60 million prescriptions for sleep aids written annually.

With more and more people paying attention to people's physical and mental health, sleep is quickly becoming a trending subject in publications, online communities, and news articles. Nevertheless, time spent in front of screens is rapidly overtaking sleep time. New companies are springing up where you can really hire a person or a dog to help you sleep, thanks to the proliferation of apps that monitor, track, and assist with sleep.

SLEEP PHYSIOLOGY

A typical sleeper cycles between quiet (non-REM = Rapid Eye Movement) & REM (Rapid Eye Movement) sleep every 90 minutes. Quiet sleep includes four stages of increasing depth, during which “*body temperature drops, muscles relax, and heart rate and breathing slow*”. Deep sleep supports immune function and physical restoration.



REM sleep, characterized by dreaming, increases brain activity and supports emotional processing and memory consolidation. Disruptions to these cycles impair neurotransmitter balance and stress hormone regulation, “*wreaking havoc in the brain, impairing thinking and emotional regulation*”.

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Key Differences Between REM and Non-REM Sleep

Non-REM (NREM) Sleep

Stages: Comprised of three stages: N1 (light sleep), N2 (deeper light sleep), and N3 (deep or slow-wave sleep).

Functions: Repairs tissues, builds bone & muscle, strengthens the immune system, and clears waste from the brain.

Physical Activity: Heart rate and breathing slow down, muscles relax, & body temperature drops.

Duration: Makes up about 75% of the night.

REM Sleep

Brain Activity: Brain waves are highly active, resembling wakefulness.

Body Activity: Muscles are temporarily paralyzed (except for eyes and breathing muscles), which prevents acting out dreams.

Functions: Essential for memory consolidation, processing emotions, learning, and creativity.

Duration: Makes up about 25% of the night, mostly occurring in the second half of the night.

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The Sleep Cycle

A normal night involves about 4–5 cycles of these stages.



Johns Hopkins Medicine

- 1. NREM Stage 1 (N1):** Short transition between being awake and falling asleep.
- 2. NREM Stage 2 (N2):** Deeper light sleep, where the body relaxes further.
- 3. NREM Stage 3 (N3):** Deepest sleep, crucial for feeling refreshed, often called "slow-wave sleep".
- 4. REM Sleep:** Follows N3, lasting about 10–60 minutes per cycle.

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Throughout the night, NREM dominates early on, while REM periods get longer during the later cycles.

SLEEP DISORDERS

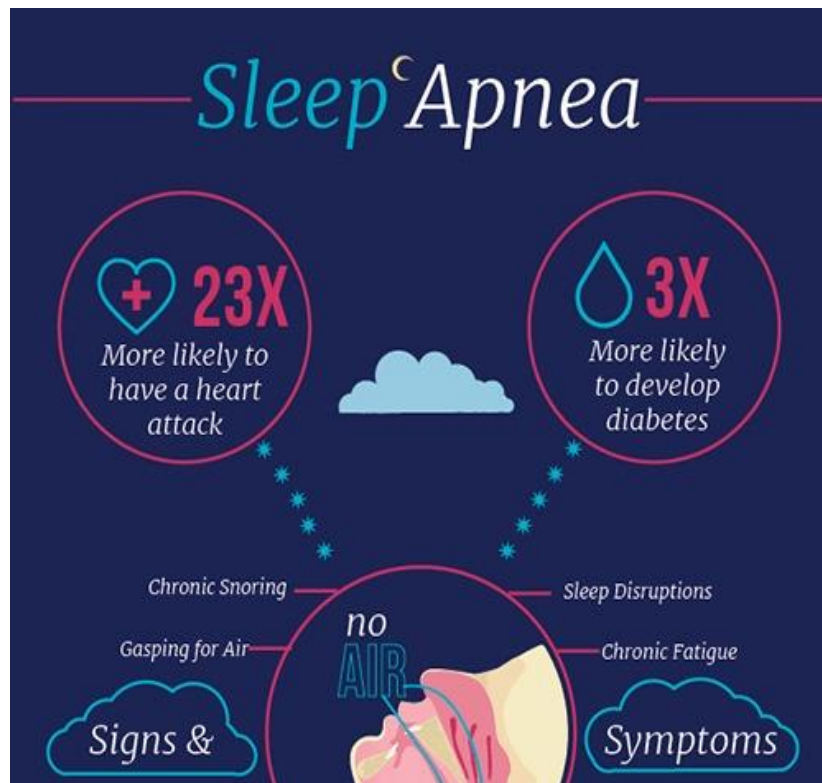
Common Sleep Disorders

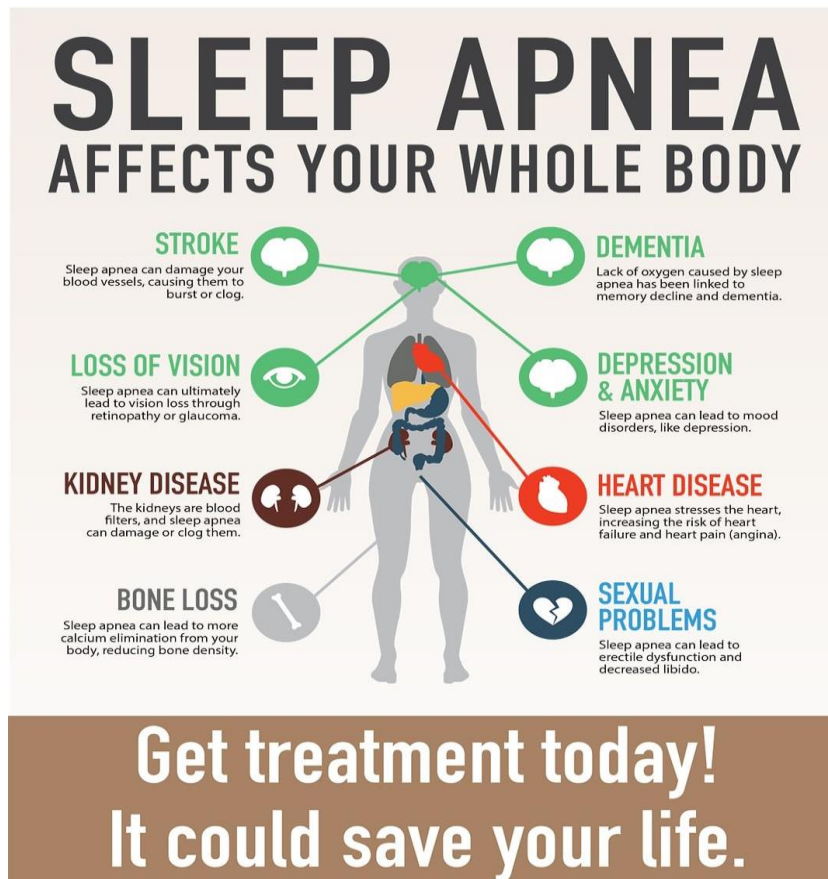
Insomnia

The most prevalent disorder, affecting 20% of people. Symptoms include difficulty falling asleep, staying asleep, or waking too early.

Sleep Apnea

Characterized by repeated breathing interruptions, often accompanied by loud snoring.





Narcolepsy

A neurological disorder causing sudden sleep attacks.

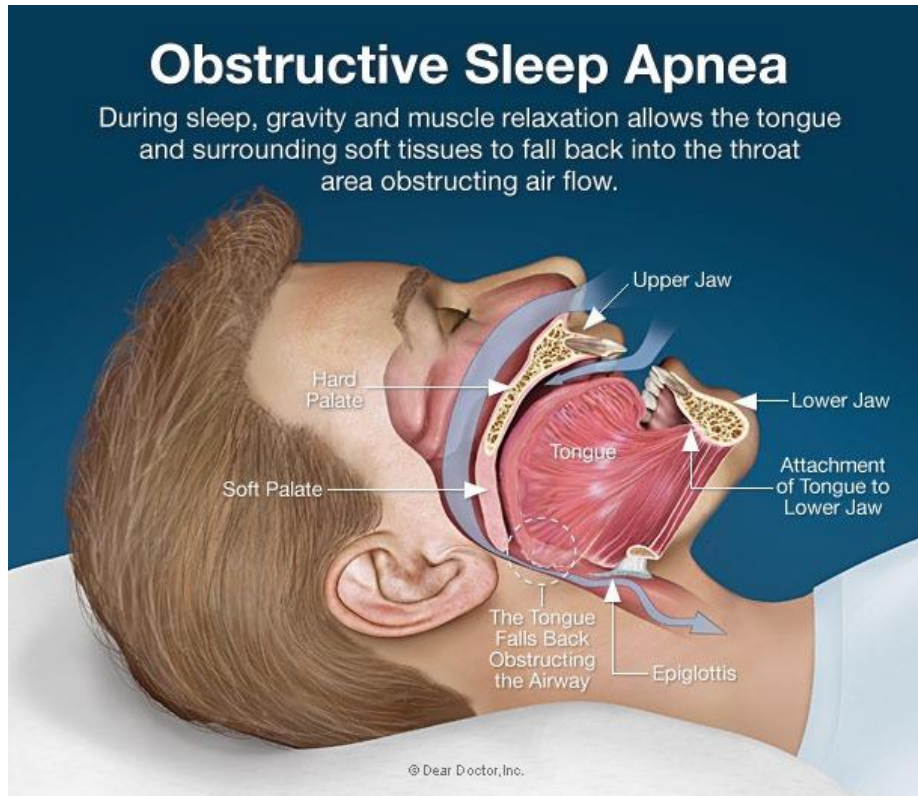
Parasomnias (e.g., Sleepwalking)

More often in youngsters, sleepwalking happens during deep non-REM sleep. Conditions like Restless Sleep Syndrome (RLS) and Obstructive Sleep Apnea (OSA) may set it off, as can stress.

It is possible to classify insomnias according to the stage of the sleep cycle in which they manifest. Typically occurring during stage III of the sleep cycle, commonly called deep sleep, sleepwalking occurs during non-REM (NREM) sleep. Sleepwalking is one of many non-REM disorders of arousal, which include sleep talking, sleep terrors, and confusional arousals. ⁽⁴⁾

Although sleepwalking can be caught through genes it can be also a result of unhealthy lifestyle, sleep deprivation, alcohol consumption, drug abuse, brain injury, stress, medications and syndromes which may cause it such as :-

OSA Obstructive sleep apnea (OSA): Obstructive sleep apnea (OSA) is characterized by brief episodes of shallow breathing during sleeping. The occurrence of sleepwalking might be precipitated by these pauses, which can happen many times during the night.

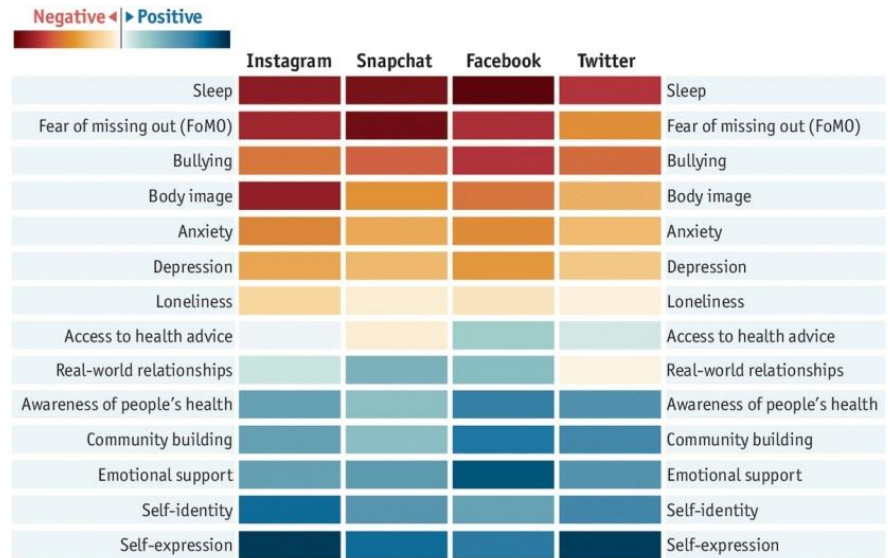


Restless Leg Syndrome (RLS): Repetitive leg syndrome (RLS) is a sleep condition characterized by an overwhelming need to move the limbs, particularly the legs, when laying down. The involuntary awakenings that occur throughout the night might lead to episodes of sleepwalking.

MENTAL HEALTH

Like, obsessed

Britain, social media users, 14- to 24-years-old, reported impact on well-being, 2017



Source: Royal Society for Public Health

Economist.com

Bi-directional Relationship

Trouble sleeping may be an indicator of a mental health problem as well as a symptom in and of itself. Out of the whole population, about 10–18% suffer from chronic sleep disorders; however, this number rises to 50–80% among mental patients. We can now add this to the growing body of evidence suggesting a bi-causal link between sleep and mental health.

Depression

Between 65–90% of adults with major depression and 90% of depressed children experience sleep problems. Insomnia increases the risk of developing depression fourfold, as shown in a longitudinal study of 1,000 adults. Persistent insomnia also predicts poorer treatment outcomes and higher suicide risk.

Anxiety Disorders

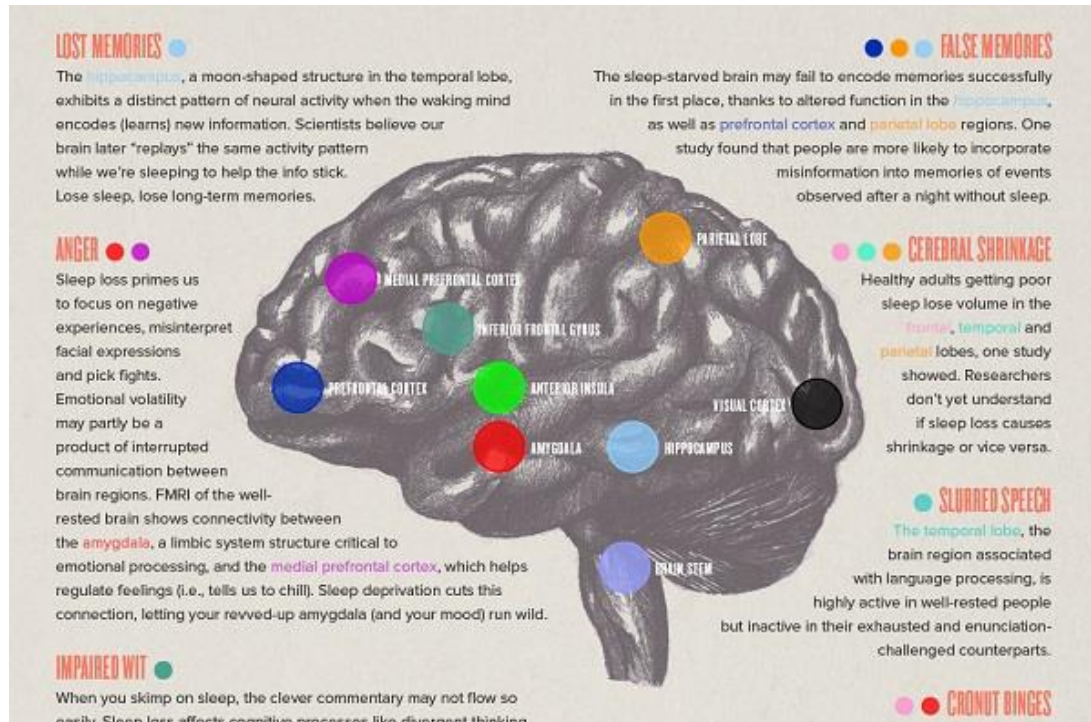
More than half of adults with generalized anxiety disorder experience sleep problems. Children with anxiety “took longer to fall asleep, and slept less deeply” in laboratory studies. Sleep disruptions in PTSD may reinforce traumatic memories, hindering recovery.

Bipolar Disorder

Up to 99% of individuals in manic episodes experience reduced need for sleep. Sleep loss can trigger mania, and hypersomnia is common during bipolar depression.

ADHD

Between 25–50% of children with ADHD experience sleep disturbances, including restless sleep and sleep-disordered breathing.



BENEFITS

There are many benefits of sleep, which have been discovered through researches and study on this topic. Some of the several advantages that health experts link to obtaining enough sleep are:

1. Higher Efficiency

Scientists and researchers have concluded that lack of sleep leads to lower alertness and concentration, it's difficult to focus for an individual who is sleep deprived. Sleep deprivation can cause confusion and can slow one's reaction time. This can hamper an individual's ability to perform tasks efficiently. If a person sleeps soundly and sufficiently it makes them more productive and active towards the surroundings.

"You're putting energy in the bank when you go to sleep," "Sound Sleep, Sound Mind: 7 Keys to Sleeping through the Night" was written by Barry Krakow, MD, medical director of Maimonides Sleep Arts and Sciences, Ltd. in Albuquerque, N.M. "On a cellular level, the

body is literally repairing and restoring itself. Without it, you can't do what you want -- physically or mentally.”

A more recent study in the Journal of Child Psychology and Psychiatry showed that children's sleep patterns can have a direct impact on their behavior and academic performance.

2. Lower risk of Obesity

According to several studies and publications poor sleep has repeatedly been linked to a higher body mass index (BMI) and weight gain. According to a report by PubMed Central, A major review found that short sleep duration increased the likelihood of obesity by 89% in children and 55% in adults.

Another study followed about 60,000 non-obese nurses for 16 years. At the end of the study, the nurses who slept five or fewer hours per night were 15% more likely to be obese than those who slept at least seven hours a night.⁽⁵⁾ While these studies were all observational, weight gain has also been seen in experimental sleep deprivation studies. A person who sleeps well is at a lower risk to be affected by obesity.

3. Improved Appetite and digestion

Sleep helps your body to rest and the digestive system highly benefits from it because during the sleep when body is at rest, the need for glucose is reduced and thus the digestive system can slow down and this provides the energy and kind of recharge to the digestive system when you are active again. When your digestive system is energized your appetite is balanced and you get enough fuel to break down your calorie intake.

4. Better Athletic performance

According to a study on “The effects of sleep extension on the athletic performance of collegiate basketball players”, by National Library of Medicine (National center for Biotechnology information) ⁽⁶⁾, longer sleep was shown to significantly improve speed, accuracy, reaction times, and mental well-being. The results also concluded, Improvements in specific measures of basketball performance, post sleep extension which are indicative of optimal sleep is likely beneficial in reaching peak athletic performance.

5. Improved Cardiac Health

Sufficient deep sleep helps towards heart health due to muscle relaxations and a study proved that short duration of sleep was associated with a greater risk of developing or dying of stroke.⁽⁷⁾

6. Social interaction and Mental health

People often attribute social awkwardness and nervousness to sleep deprivation. Not getting enough sleep may have negative effects on mental health as well. This has been validated by other research that included emotional face recognition tests.⁽⁸⁾ A lack of sleep impairs one's capacity to distinguish between angry and happy facial expressions, according to one research. Scientists have shown that people's emotional intelligence and capacity to read social signals are both negatively impacted by insufficient sleep.

7. Improved Immunity

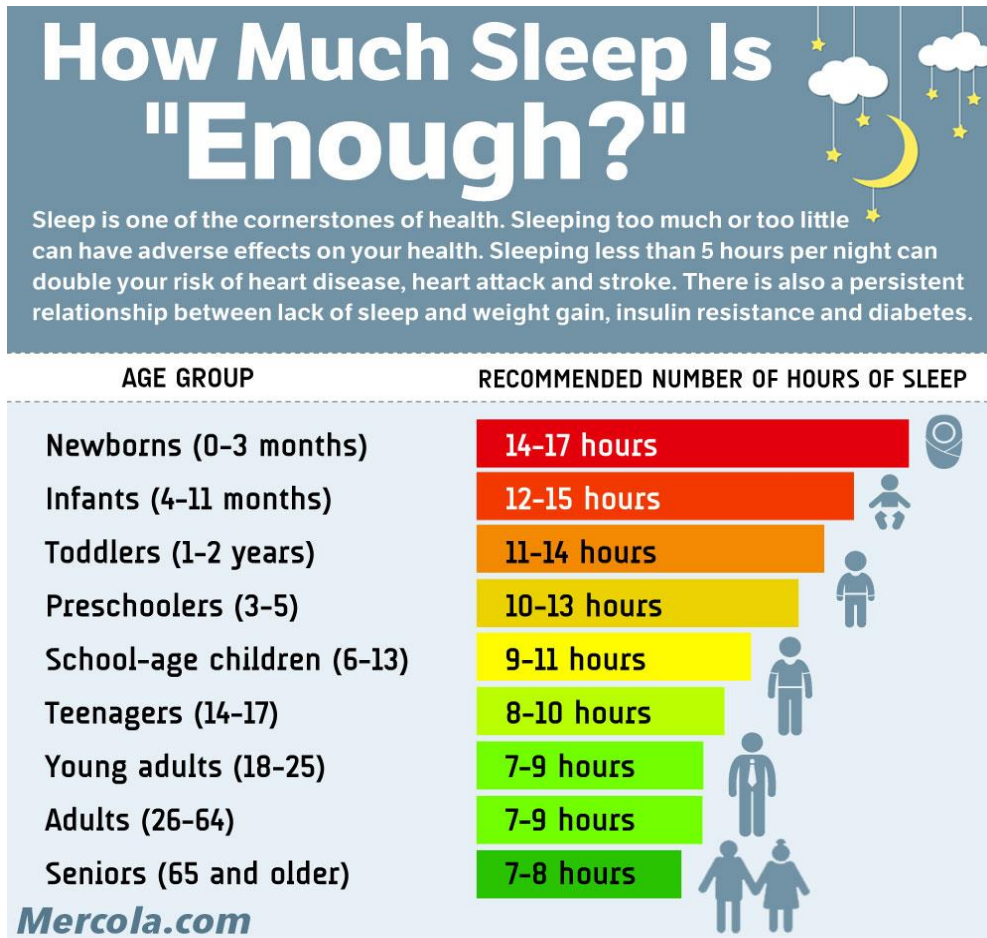
The immune system is said to be strengthened by regular sleep. As you sleep, your immune system receives vital assistance. A balanced, protective, and adaptable immune system is possible with the help of enough hours of deep, quality sleep. Scientific research has linked the quality of our sleep to the strength of our immune systems, further supporting the idea that sleep is an essential time for resting the body. The immune systems' innate and adaptive mechanisms are both aided by sleep.⁽⁹⁾

8. Improved Sex Life

If you want to sleep better, have a good sex life. There is a true mutual dependence between sex and sleep. Because sex releases endorphins, which help calm you and alleviate anxiety, having sex before bed may enhance the quality of your sleep, according to research. The production of the hormone oxytocin, often called the "love hormone," during sexual activity has several positive effects on the body and mind, one of which is the induction of a state of relaxation.

HOW MUCH SLEEP IS TOO MUCH SLEEP?

How much sleep is sufficient for your age? Some people are sleep deprived while some oversleep and both of this is harmful for health. The most believed opinion is that 8 hours of sleep is important for an individual's overall health. But why is it so? National Sleep Foundation guidelines advise that the amount of sleep required by a human depends on the age.



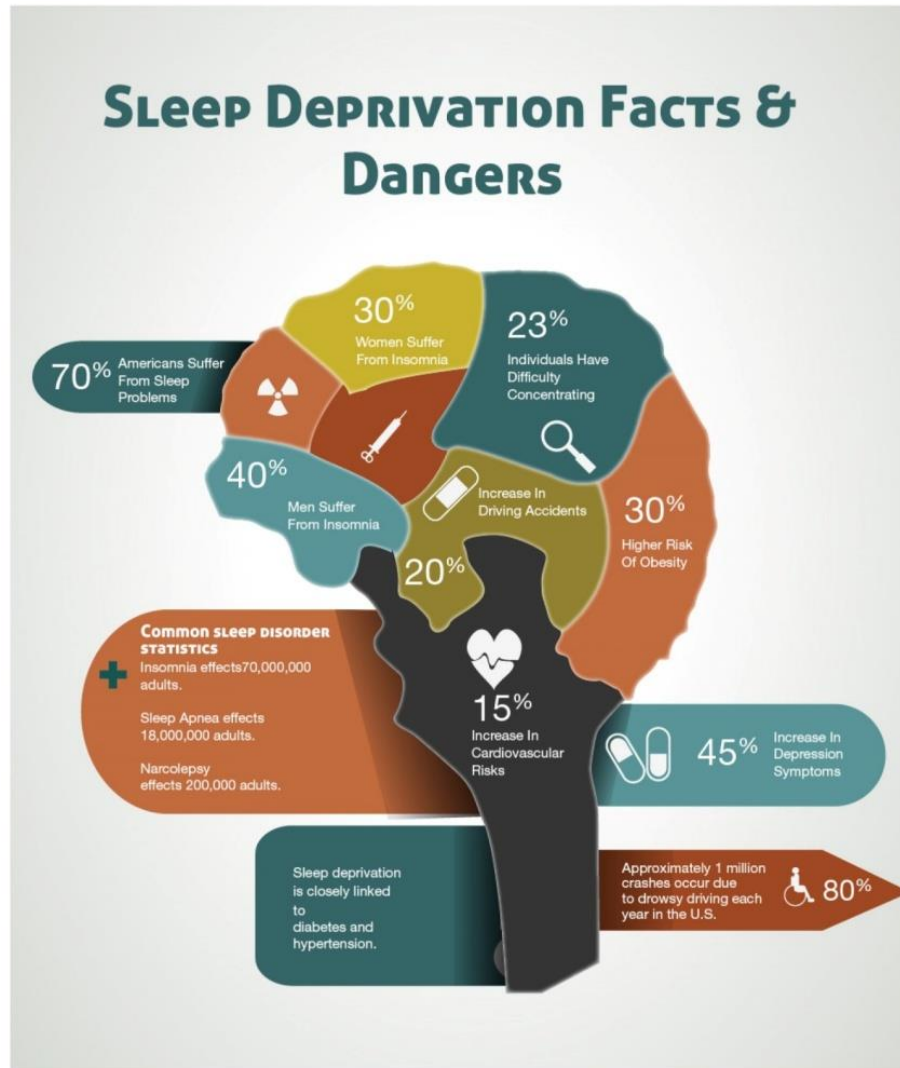
Even with just a few hours of sleep every night, some individuals report feeling refreshed and ready to take on the day, but it's safe to assume that their productivity takes a hit. People who obtain less than seven hours of sleep nightly are not as effective at complicated mental activities as those who get seven or more hours of sleep nightly, according to research. But those who sleep less but aren't sleep deprived might still benefit from meditation.

In addition to age, there are other factors that can affect how many hours of sleep you need. For example:

Pregnancy: During pregnancy a body goes through various physical, mental and hormonal changes and thus body might need more rest and sleep as the months pass by.

Aging: Adults of all ages need about the same amount of sleep. On the other hand, compared to younger individuals, elderly adults often sleep lightly and for shorter periods of time.

Previous sleep deprivation: If you don't get enough sleep, you'll end up with a sleep deficit, which means you'll need even more sleep to feel well.



Sleep quality: If you have trouble falling asleep and staying asleep due to frequent awakenings, you may not be receiving enough deep sleep. Getting a good night's sleep is just as vital as getting enough of it.

HOW TO SLEEP BETTER?

There are many individuals who face problems in falling asleep. The change in lifestyle, decreased physical activity, increased screen time and stress are some of the common reasons why one may find difficult to fall asleep.

There are many ways which can help an individual sleep better.

1. **Scheduling:** Taking charge of your daily sleep schedule is a great step towards a better sleep cycle. Fixing wake-up and sleep time helps induce sleep. When you sleep and wake-up at the same time every day it helps your body to get accustomed to sleep, and

this way you fall asleep easier and faster. Monitoring the day time schedule is also important, the nap during the day should be 15-20 min and the best time for it is post-lunch. This helps your body relax a bit and you are re-charged for the rest of the day.

2. **Pre-bed routine:** It is important that you sleep in a comfortable environment and in a comfortable position. It is recommended to disconnect from all electronic devices and screens one hour prior your sleep time. However, listening to gentle music or reading is recommended to induce healthier and sound sleep. Hot showers or bubble baths are also relaxing activities which one can use to induce sleep.
3. **The bedroom:** It is recommended that the bed room should not have a TV or a study table with computer, or any other screens and should only have comfortable bed with quality mattresses and cozy atmosphere with soothing lights to help you sleep better. An agreeable room temperature with aromatic infusers and candles is also helpful for better sleep. The bedroom should be for sleep and sex only.
4. **Minimize light and sound:** Both ambient light and noise levels may influence how well and how many hours you sleep. The brain secretes melatonin, a sedative, as it becomes dark, which puts you to sleep. It may be difficult to fall asleep even when you turn off all electronic devices. Take them out of your bedroom and make sure it's as dark as possible by using blackout shades or putting on an eye mask.
5. **Physical-Activity:** If you want to sleep better, it's advised that you exercise for at least 30 minutes per day. Consistent exercise improves sleep quality and reduces daytime drowsiness. Exercising regularly not only reduces sleep apnea and insomnia symptoms, but it also lengthens the time spent in the deep, rejuvenating phases of sleep. If you're having trouble falling or staying asleep, try doing some yoga poses just before you turn in for the night. You could find that you sleep better and for longer periods of time if you make yoga a regular part of your evening practice. Among yoga's many advantages include its ability to help with sleeplessness, ease tension, and generally enhance one's quality of life. Yoga postures including Child's Pose, Corpse Pose, and Nidra, a kind of guided meditation, are known to promote restful sleep. Some individuals may feel too awake if they engage in vigorous activity just before going to bed. If you're looking for an easy yoga pose to practice before bed, this is it.

6. **Diet:** All day long eating habits impact nighttime slumber. Caffeine and similar foods and drinks can make it difficult to fall or stay asleep. If you eat something too acidic or spicy just before bed, you can get heartburn and indigestion. White bread, white rice, spaghetti, and other high-calorie, sugary, and refined carbohydrate items eaten during the day could keep you awake at night and prevent you from getting into the deep, rejuvenating phases of sleep. You may enhance and promote sleep by taking supplements like Ginkgo Biloba, Valerian Root, Magnesium, or Lavender. Always start with a single supplement before adding more. Stay away from liquids for at least an hour and a half before you turn in for the night. Although it's essential to drink enough of water during the day, doing so too close to bedtime could disrupt your sleep.

7. **Clear your head:** When you hit the bed, then is the time you take to self-introspect and reflect on your day. Clearing your head before bed is a good idea which helps reduce stress, overthinking and anxiety and helps you fall asleep faster. Writing a diary or short meditation before bed can assist better sleep.

LIFESTYLE AND BEHAVIORAL INTERVENTIONS

Both documents emphasize non-pharmacological strategies:

Sleep Hygiene

- Maintain consistent sleep–wake times
- Use the bedroom only for sleep and sex
- Keep the room dark, cool, and quiet

Relaxation Techniques

Meditation, deep breathing, guided imagery, and progressive muscle relaxation reduce anxiety and promote sleep.

Physical Activity

Regular exercise improves sleep depth and reduces insomnia.

Dietary Considerations

Avoid caffeine, alcohol, spicy foods, greasy foods and heavy meals before bed; consider supplements like magnesium or valerian root.

Pre-Bed Routine

Warm baths, journaling, reading, and yoga help transition the body into sleep.

Environmental Optimization

Use blackout curtains, reduce screen exposure, and create a calming bedroom atmosphere. Avoid television, cell phone, blue lights etc. at least 45 minutes before sleeping or pre-sleep.

DISCUSSION

The integrated evidence demonstrates that sleep is not merely a passive state but a dynamic biological process essential for mental and physical health. The bi-directional relationship between sleep and psychiatric disorders highlights the importance of early intervention. Lifestyle modifications, behavioral therapies, and environmental adjustments can significantly improve sleep quality and overall, well-being.

CONCLUSION

Sleep is foundational to human functioning. Historical perspectives, physiological research, and modern clinical findings converge on the same conclusion: adequate, high-quality sleep is essential for mental health, emotional resilience, cognitive performance, and physical vitality. Addressing sleep problems is therefore a critical component of preventive health care and psychiatric treatment.

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