

Sleep 101

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A lesson on the basics of sleep and how to sleep better.



Image Source: Unsplash

We spend around a third of our lives sleeping, yet few people deeply understand sleep and how to optimize it. This article will explain the basics of sleep and give some advice for how we can improve our sleep.

Why is sleep important?

Before the 1950s, people thought sleep was a passive activity where the brain and body shut off. Now, we know that sleep is a very active. During the regular course of our day, our cells are constantly going through chemical activity and producing waste. During sleep, that waste gets cleaned out from our brain and body. Sleep is also when our brain consolidates memories, and our body grows and repairs itself.

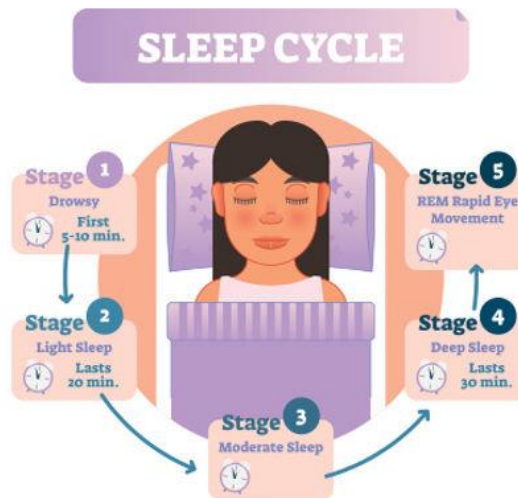
Sleep is also a way for the body to fight illnesses. For example, when get catch the flu, we naturally get sleepy. That's because our immune system produces sleep-inducing chemicals

while fighting an infection. Sleeping helps the body conserve energy and focus on fighting off the infection.

What happens during sleep?

When we sleep, we cycle through five stages:

1. Drowsy
2. Light sleep
3. Moderate sleep
4. Deep sleep
5. REM sleep



[Image Source](#)

In stage 1, we feel **drowsy**, and we kind of drift in and out of sleep, and it's easy to get awoken in this stage. Our eyes move very slowly, and muscle activity slows down.

In stage 2, we enter **light sleep**. Our eye movements stop and our brain waves become slower. This lasts around 30 minutes.

In stage 3, we enter **moderate sleep**. Our brain produce very slow waves called delta waves, with occasional smaller and faster waves.

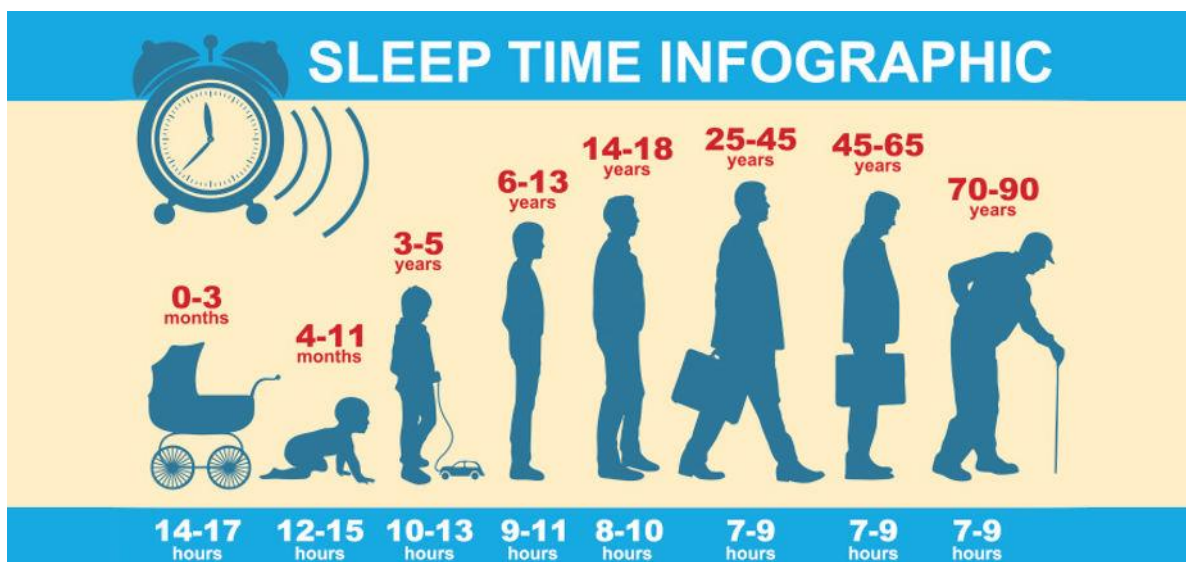
By stage 4, **deep sleep**, our brain produces only delta waves. There is also no eye movement or muscle activity. It is very difficult to wake up people during stages 3 and 4. If they get woken up, they will feel very groggy and disoriented.

In stage 5, **REM sleep**, our eyes jerk rapidly in many directions, our breathing becomes rapid and irregular, and our muscles become temporarily paralyzed. This is also when dreams happen.

The first REM sleep period usually starts around 70-90 after we fall asleep, and a complete sleep cycle takes 90 to 110 minutes. As the night progresses, our time spent in REM increases and the time in deep sleep decreases. By morning, people spend almost all their sleep time in stages 1, 2, and REM.

How much sleep do we need?

How much sleep you need depends on many factors, with a big one being age. According to an [article](#) from the American Sleep Association, most adults do best with 7 to 8 hours of sleep, while teenagers need 9 hours on average.



[Image Source](#)

If we get too little sleep, then we create **sleep debt**, which is like overdrawing money from a bank. Eventually, the body will demand that the debt be repaid, so we end up sleeping a lot more than usual.

Sleep Deprivation

Sleep deprivation is when we don't get enough sleep, which affects our thinking clarity, reaction time, and muscle coordination. Studies show that sleep deprivation is very dangerous. People who are sleep deprived perform hand-eye coordination tasks as badly or worse than drunk people. Therefore, it is very important to not drive while sleepy. Long-term sleep deprivation will weaken the immune system, which makes it easier for us to get ill.

Sleep deprivation is a big problem in our modern society. According to a 2019 Healthline [article](#), 73% of teens don't get enough sleep, which can make them moody, tired, and even depressed. A 2016 [article](#) from the Center for Disease Control (CDC) states that more than a third of American adults don't get enough sleep on a regular basis. Moreover, sleeping less than 7 hours a night is associated with increased risk of chronic conditions like obesity, diabetes, high blood pressure, heart disease, stroke, and frequent mental distress.

If you feel sleepy during the day, even during boring activities, then you are probably sleep deprived. If you often fall asleep within 5 minutes after lying down, then you are probably severely sleep deprived.

How to Improve Sleep

There's a lot of research out there about how to improve sleep. Here are lots of tips to improve sleep. They are broken into four categories: evening routine activities, sleep environment, food and drink, and other sleep tips.

Category 1: Evening Routine Activities

Tip 1: Have an evening routine

Many of us have a morning routine. When we wake up, our body knows what to do without our mind even needing to think. We can do the same for our evenings. Humans are creatures of habit. When we repeatedly do the same thing over and over again before bed, then we can train ourselves to get sleepy before bed.

What can we do for our evening routine? We should do things that relax us and that do not involve electronic devices. For many young people nowadays, it's hard to imagine what to do if you can't look at your phone before bed. Actually, there are so many things we can do! We can do things like meditate, journal, take a warm shower or bath, comb your head, and massage ourselves.

Tip 2: Avoid blue light from screens 60 minutes before bed.

To emphasize again, avoid electronic devices before bed. Blue light keeps us awake and reduces the quality of our sleep. We also get stimulated from the activities we do on our devices, so we should stop using our devices 60 minutes before sleep.



[Image Source](#)

If you really have to use your device, then at least install a blue light blocker app like [f.lux](#). On your phone, you can turn on night shift mode.

Tip 3: Meditate

One of the best ways to calm your mind is using meditation, which has been proven to lower stress and inflammation in our bodies. A simple and super effective way to get sleepy is to do deep breathing through your nose: breathe in for a count of 4, breathe out for a count of 8. Do this for 5 minutes and you will feel much more calm and sleepy.



UCLA (University of California, Los Angeles) also offers [free pre-sleep meditations](#) that you can listen to before bed to help your mind and body relax.

Tip 4: Journal

Journaling helps us bring a conclusion to the day by noting down our thoughts and feelings towards the day. It also helps us trap any thoughts onto paper so that we don't need to think about it anymore at night. If you find yourself still thinking non-stop while lying in bed, you can get up and journal down your thoughts. Once they are on paper, you can always go back and reflect on them in the future.

Another way to journal is to focus on gratitude. You can write down three things you are grateful for that happened today.



[Image Source](#)

Cultivating gratitude brings us peace and puts us in a happy mood before bed, which improves sleep.

Tip 5: Take a warm shower or bath

We can all relate to a shower or bath being very calming and relaxing. Not only does it make us feel clean physically, but it can also make us feel mentally cleansed afterwards. After taking a warm shower or bath, our body will get rid of the heat to make our body temperature drop. That helps makes us get sleepy.



Tip 6: Comb your head

In Traditional Chinese Medicine, [combing your scalp](#) (not hair) is said to stimulate all the acupuncture points on your head and improve qi (energy) flow there. The benefits include calming the mind and improving sleep. Do it 100 times or for 5 to 10 minutes daily.

Tip 7: Massage ourselves

In Traditional Chinese Medicine, there are many acupressure points we can massage ourselves to help improve sleep.

Acupressure Points for Sleep



Spirit Gate



Inner Frontier Gate



Bubbling Spring



Three Yin Intersection



Wind Pool

[Image Source](#)

You can use your thumb or fingers to massage it clockwise 30 times and then counter-clockwise 30 times, or just do it for 5 to 10 minutes on each point. If a certain point hurts, it means there's a qi (energy) flow there. In that case, just apply however much pressure you can tolerate, and over time, the pain will reduce as the blockage reduces.

Tip 8: Set an alarm to start your evening routine

Often times, people are so busy at night that they lose track of time. If you want to sleep at 10, then you can set an alarm for 9. When the alarm goes off, you will remember to finish up what you're doing and go start your evening routine.

Category 2: Sleep Environment

Tip 9: Use your bed only for sleep, not for electronic devices

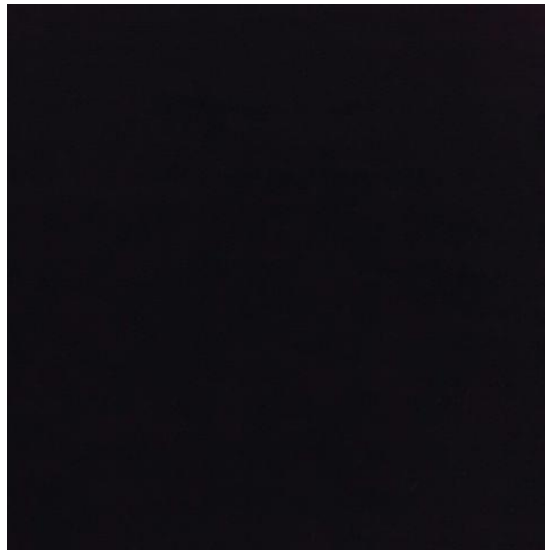
Many people watch TV in bed or play on their phones in bed during the day or even night. As a result, when they get into bed, they don't feel like sleeping. Their body thinks it's time to watch TV or play on the time. Stevenson calls that "sleep suicide." Furthermore, even if you do fall asleep, these electronic devices emit radiation that disrupt sleep quality.

Tip 10: Keep cool

When we sleep, our body temperatures naturally drop. Studies show that the optimal temperature for sleep is around 20 degrees Celsius (68 Fahrenheit). Above 24°C (75°F) or below 12°C (54°F) will make it harder to sleep.

**Tip 11: Sleep in a completely dark room**

Humans have evolved to sleep better in a dark environment. Even small amounts of light make it harder for us to fall asleep.



Well, it might be hard to get your room as dark as that, but the closer to it, the better for your sleep!

Category 3: Food and Drink

Tip 12: Stop caffeine by evening

Caffeine is a stimulant drug that energizes us and makes it hard to sleep. Moreover, if we sleep with caffeine in our blood, the quality of our sleep is reduced.



[Image Source](#)

Caffeine is in coffee, tea, chocolate, sodas, and energy drinks.

According to [The American Academy of Sleep Medicine](#), caffeine has a half life of around 5 hours. That means if you drink a cup of coffee at noon, then half of that caffeine is still in your blood at 5PM, and a quarter of it is still in your blood by 10PM. The American Academy of Sleep Medicine recommends that people stop consuming caffeine at least 6 hours before bed. The earlier, the better. One study found that even consuming caffeine 6 hours before bedtime still reduced total sleep time by 1 hour.

Tip 13: Eat a spoon of honey

The [Medical Medium](#) explains that eating a teaspoon of raw honey can enhance sleep. Another option is to drink a cup of warm lemon honey water.

Tip 14: Don't be full

Stop eating at least 2-3 hours before bed. It's hard to sleep when our stomachs are full.

Category 4: Other Sleep Tips

Tip 15: Sleep at the right time

In the book *Sleep Smarter*, author Shawn Stevenson explains that 10PM to 2AM “Money Time Sleep” because between those hours, humans get the most amount of restful recovery sleep. One hour of Money Time Sleep is worth twice as much as sleep outside those hours.

The [Medical Medium](#) also calls 10PM to 2AM "The Sacred Sleep Window" because that's when your body does most of its healing. He says that if you can't fall asleep during this time, just lie down with your eyes closed and your body will still do some healing. If you have night shift work, then you can nap or lie down with your eyes closed between 10AM to 2PM to get the best healing.

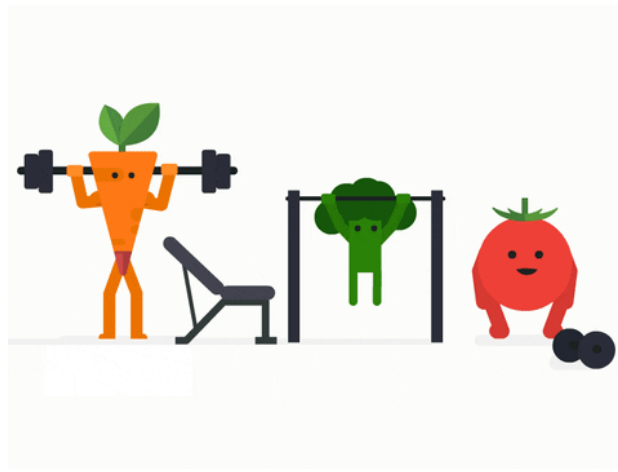
Ayurveda Medicine also views 10PM to 2AM as the most important sleep time, while Traditional Chinese Medicine (TCM) views 11PM to 3AM as the most important sleep time. If 10PM is too early for you to get to bed, at least try to follow TCM's advice!

Tip 16: Wake up early

Humans have evolved to rise with the sun. That will help you tune into the natural sleep pattern and feel sleepy earlier. If, for example, you currently sleep at midnight but you want to feel sleepy at 11PM, then try waking up an hour earlier than usual. That will make it easier for you to feel sleepy one hour earlier.

Tip 17: Exercise during the day

Exercising during the day helps people fall asleep more quickly and also improves sleep quality, but we shouldn't exercise too close to our bed time. That's because exercise causes our body to release endorphins, which keeps the brain awake. It also raises the body's temperature, which prevents sleepiness. Therefore, the latest we should exercise is a couple hours before bed.



In terms of how much exercise we need to improve sleep, studies show that people who do 30 minutes of moderate exercise see improvements in sleep quality that same night! It doesn't take weeks or months to see a benefit.

The type of exercise isn't too important. It could be aerobic exercise, strength, or yoga, the important thing is to get your heart rate up. That will create biological processes in the brain and body to result in better sleep.

Conclusion

People spend a lot of effort trying to improve their waking hours, and we should be doing the same for our sleeping hours. Getting adequate sleep, especially deep sleep, is key to maintain our physical and mental health. If your sleep is not excellent, then take some tips from this article and apply them in your life to see if your sleep improves.

