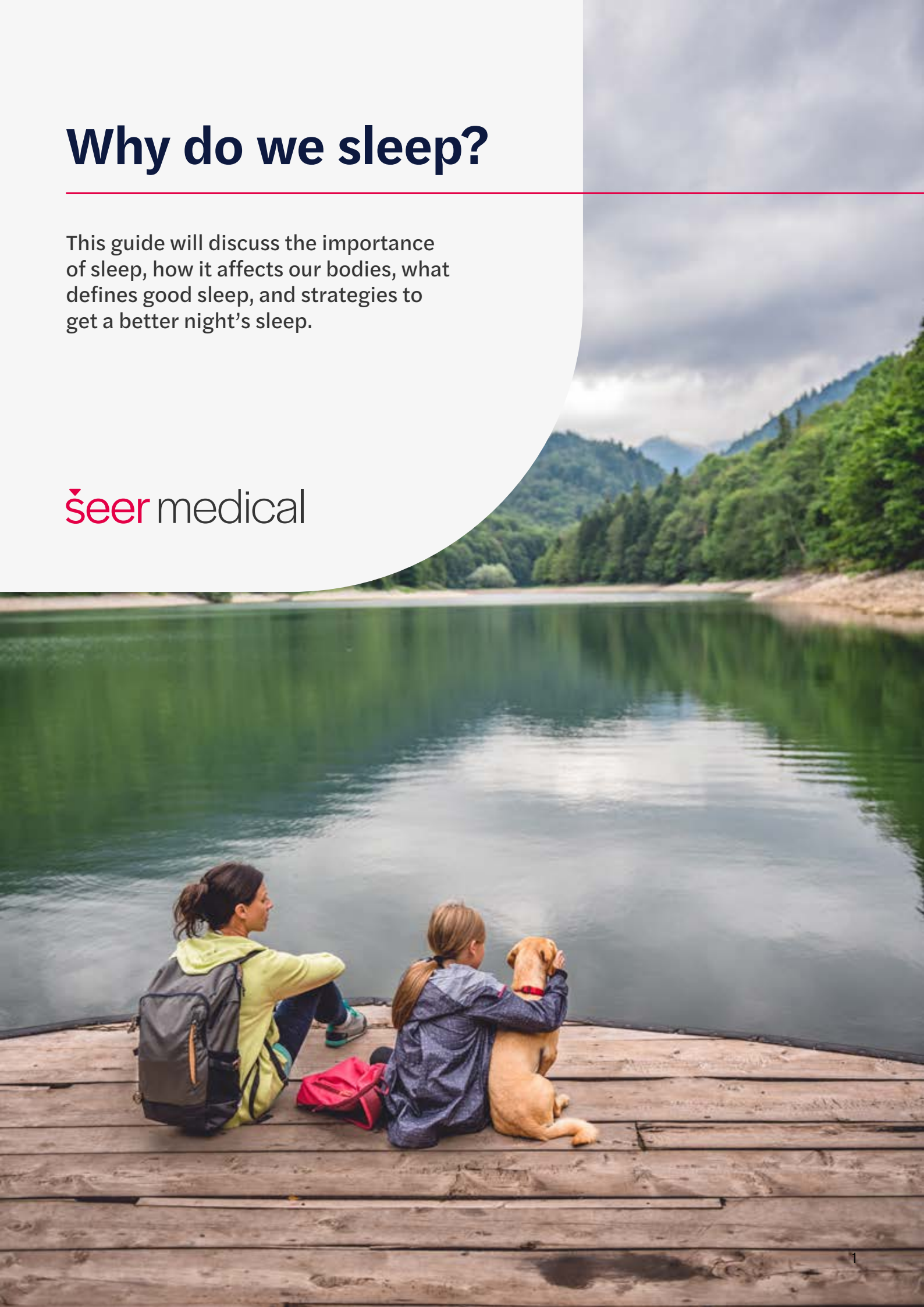


# Why do we sleep?

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This guide will discuss the importance of sleep, how it affects our bodies, what defines good sleep, and strategies to get a better night's sleep.

**seer** medical



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## Why our body needs sleep

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For decades, scientists have researched the reason why people need sleep. To this day, researchers still aren't exactly sure why sleep is a necessity. There doesn't seem to be one theory that directly answers the question.

What they do know is that it is an essential biological function that is critical for brain function, physical ability, and emotional stability. Our bodies can't function properly when they don't get an adequate amount of quality sleep.

## Healthy brain function

Brain function relies on good sleep. While you sleep, you may be resting, but your body stays quite busy – especially your brain.

Complete and restful sleep allows for memory function to take place:

- Short-term memories are converted into long-term ones
- Information is organised by being stored or forgotten if no longer needed<sup>1</sup>

## Physical health

Sleep doesn't just affect your mental and emotional health. It also plays a critical part in your physical wellbeing.

### Energy conservation and cell restoration

Two theories are used to explain sleep's role in energy conservation and **cell** restoration. While we sleep, the body is hard at work making repairs. This is called the *restorative theory*, where the body needs sleep in order to restore itself.

Restoration processes include:

- Muscle repair
- Tissue growth
- Protein synthesis
- Hormone release
- Cell repair

### What is a cell?

The human body is made up of trillions of cells that provide structure for the body and convert nutrients from food into energy. Cells carry out important functions throughout the body.

Another theory, called the *energy conservation theory*, suggests that sleep is necessary to conserve energy at night when it is least efficient to perform survival skills such as searching for food and water.

Studies have shown that the body's **metabolism** decreases by 10% when sleeping.<sup>2</sup> This theory is based on the belief that even though we do not need them anymore, humans still retain basic survival instincts.

### Metabolism

The chemical reactions the body uses for normal functioning and sustaining life. The purpose of metabolism is to convert food into energy for cells to function, convert food to building blocks for proteins, and to eliminate waste as a result of metabolic processes.





## Immunity

There is a reason you're told to get plenty of rest when you are sick. A substantial amount of research shows that a lack of sleep weakens the immune system.

During sleep, the body makes proteins, antibodies, and immune cells that fight and destroy infections and inflammation. Without adequate sleep, your body has a harder time fighting off illnesses.

## Insulin production

Insulin is a crucial hormone that is used to regulate your body's overall **blood glucose levels**. Those who do not make enough insulin or who are insulin-resistant develop either type 1 or type 2 diabetes due to high blood glucose levels.

Sleep can help protect against developing insulin resistance by keeping your cells healthy and using glucose the way they are supposed to.

### Blood glucose levels

Also known as 'blood sugar' is the amount of glucose in your blood. Glucose comes from food and drink consumed during the day and is a fuel source for your body.

## Weight maintenance

Ghrelin and leptin are the two hormones that control how hungry you feel and can either aid in weight gain or weight loss. An increase in the hormone ghrelin makes you feel hungry, while an increase in the hormone leptin makes you feel full.

Sleep deprivation can cause an increase in the level of ghrelin and a decrease in the level of leptin, making you feel hungry and thus putting you at risk for weight gain.

## Heart health

Adequate sleep is important for heart health and research has shown that a lack of adequate sleep is linked to several risk factors of heart disease, including:

- High blood pressure
- Elevated cortisol levels
- Increased inflammation
- Weight gain

High blood pressure is a risk factor for heart disease.<sup>3</sup> While you sleep, your blood pressure naturally goes down. However, if you aren't getting the amount or quality of sleep your body needs, your blood pressure remains higher for extended periods of time, increasing your risk of developing heart disease.

## Daytime performance and safety

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Sleep has a profound effect on performance throughout the day. A study found that out of 7,480 adults, 23.2% experienced insomnia.<sup>4</sup> Of those participants with insomnia, the average loss of productivity was an incredible 11.3 days more than people who do not suffer from a sleep disorder.

You may notice that on days after a bad night's sleep that you might feel less sharp or motivated. Not to mention, it can be hard to concentrate and focus on the task at hand, no matter how simple it might be.

A lack of sleep can also lead to an occurrence known as microsleep. This is a period in which a person may fall asleep for mere seconds, yet it can have disastrous consequences. For instance, dozing off for even a split second while driving can be enough to cause a tragic accident. Many people who experience microsleep might not even realise when they fall asleep.

Microsleep can be caused by:

- Drowsiness (due to a lack of sleep)
- Narcolepsy
- Obstructive sleep apnoea

**Research shows that after several nights of losing sleep (even a loss of just 1-2 hours per night), your ability to function suffers as if you haven't slept all for a day or two.<sup>5</sup>**

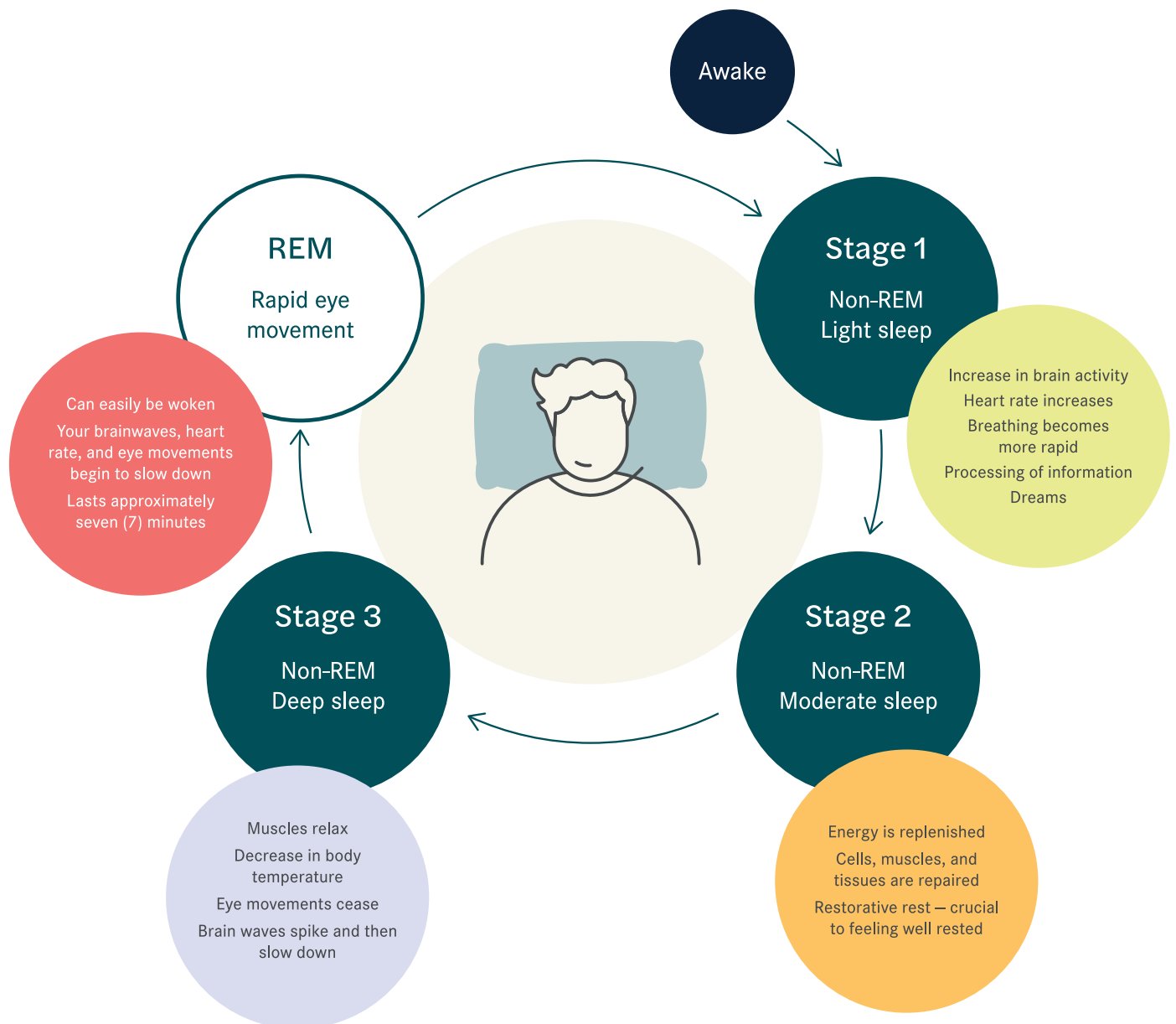


# What is good quality sleep?

## The stages of sleep

Getting enough sleep each night is just one component of good quality sleep. The second component is making sure the sleep you do get is high quality. For example, if you wake a dozen times during the night, chances are, the sleep you are getting is of poor quality.

There are three (3) stages of sleep. The three stages are classified as non-rapid eye movement (non-REM) sleep. After the non-REM sleep stages, you enter rapid eye movement (REM) sleep. During a single night of sleep, you should rotate through the stages and REM about four (4) times each.





## How much sleep do you need?

The amount of sleep a person needs depends on several factors. Some people naturally need a little more sleep than others. However, age plays a role in the amount of sleep needed.

This is the average amount of sleep needed depending on age<sup>4</sup>:

Age		Hours of sleep
Newborns	0-3 months	14 to 17
Infants	4-11 months	12 to 15
Toddlers	1-2 years	11 to 14
Preschoolers	3-5 years	10 to 13
School-aged children	6-13 years	9 to 11
Teenagers	14-17 years	8 to 10
Adults	18-64 years	7 to 9
Older adults	65 years and older	7 to 8



# What happens when you don't sleep (well) enough?

Failing to get adequate sleep has both short-term and long-term negative consequences. The effects can be felt mentally, emotionally, and physically. Let's take a closer look at the most common effects.

## Memory issues

Sleep deprivation can cause problems with your memory. It can be difficult to remember important details such as meeting times, where you last laid something, or even forget simple safety precautions such as looking both ways before you cross the street.

The things that you do automatically without thinking may be difficult to accomplish. This is both frustrating and can be a serious safety hazard.

**Are your memory problems normal?**

BLOG

## Development of health issues

Not getting enough sleep over a long period of time can lead to the development of chronic health problems, which include, but are not limited to:

- Heart disease
- Kidney disease
- Blood disorders
- Diabetes
- Worsening brain disorders (e.g., epilepsy, Alzheimer's)
- Broken bones from falls (especially in seniors)
- Poor motor function (movement of muscles)
- Fatigue
- Weight gain
- Weakened immune system

## Emotional issues

Emotional issues can be just as problematic as physical health problems. A lack of sleep can worsen mood disorders such as depression. Symptoms of mood disorders can be relieved by getting enough sleep on a regular basis. It's important to note that mood disorders can make it difficult to sleep, so it's beneficial to tackle both at the same time.



# How to get better sleep

Getting a better night's sleep may be as simple as fine-tuning your **sleep hygiene** and making adjustments to your daily routine. The following strategies will help you get good quality sleep.

## Sleep hygiene

Healthy practices that can help you get regular, restful sleep. It is divided into three (3) categories – environment, routine, and consumption.

## Make your room a comfortable place to sleep

Your bedroom should be a relaxing environment. Sleep hygiene is crucial, and making sure your room is dark and free from distractions will instantaneously give you a better night's sleep.

## Limit light

The amount of light you are exposed to plays a role in how much **melatonin** your body produces, which helps regulate your sleep-wake cycle. For example, when it's dark outside, melatonin levels increase, which makes you sleepy. During periods of high light, less melatonin is secreted, so you remain more awake. Investing in black-out curtains or an eye sleeping mask will block out light – increasing your melatonin levels and letting your body rest.

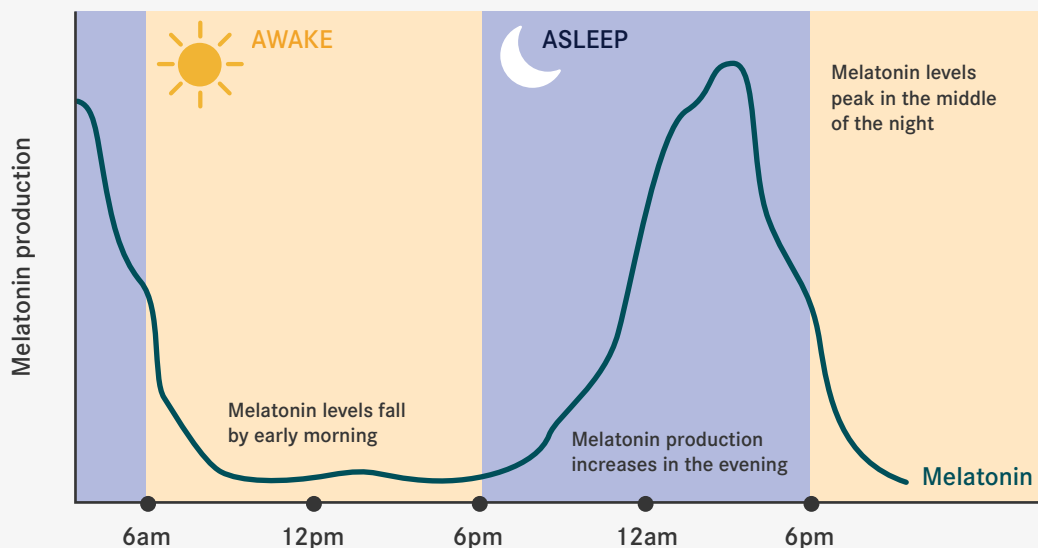
## Melatonin

A hormone produced by the body that is released by the pineal gland at night and helps your body get to sleep. It plays a role in controlling the body's sleep-wake cycle as the amount that is released into the body is determined by the amount of light exposure.

It's also advisable to avoid bright screens and backlit devices an hour or two before bed. The **blue light** emitted from devices causes your body to decrease the amount of melatonin released, making it more difficult to fall asleep.

## Blue light

Blue light is part of the visible light spectrum (what the human eye can see). It has the shortest wavelength and the highest energy. About one third of all visible light is considered blue light, with sunlight being the greatest source of blue light. Screens and LED light bulbs emit artificial blue light, although the exposure is small compared to the amount of light exposure from the sun.





## Work with your circadian rhythm

Your body has an internal clock known as the circadian rhythm. It's your body's natural sleep-wake cycle within a 24-hour period. Following your circadian rhythm will help you get a better night's sleep because you are aligning with what your body naturally needs.

To keep a regular rhythm, wake up and go to bed at the same time each night – including weekends. Yes, this means it's best not to sleep in or stay up extremely late on your days off. Keep naps between 15-30 minutes, this is plenty of time to rejuvenate while allowing yourself to still fall asleep at your normal time.

## Exercise regularly

Exercise gives you a boost of energy and makes it easier to get a good night's sleep. This is because exercise releases endorphins that reduce stress and anxiety, allowing you to rest more peacefully at night and be tired enough to fall asleep quickly. Not to mention working out is great for your physical, emotional, and mental health.

Although, it's best to avoid vigorous exercise close to bedtime as your increased heart rate will make it harder to fall asleep.

## Make time to wind down

Have a 'wind down' routine to get yourself ready for sleep. Make a warm cup of [caffeine-free tea](#). Set aside at least 30 minutes to unplug from the television, phone, and computer before calling it a night.

### 6 caffeine-free teas to help you sleep

1. Chamomile
2. Valerian root
3. Lavender
4. Lemon balm
5. Passionflower
6. Magnolia bark

## Eat and drink right

Poor eating habits can make it difficult to sleep well. Limit the amount of caffeine, nicotine, alcohol, and sugar that you consume in the evening.

It's also advisable to avoid huge meals right before bed. Reducing how much water, soda, or juice you drink before sleep will decrease the number of trips to the bathroom you have to make.

## Are you ready for a better night's sleep?

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Sleep is more than a suggestion. It is a necessity for life's biological processes, including your physical, emotional, and mental health.

Creating the right environment, and implementing sleep strategies can help you get a better night's sleep. However, if you have concerns about your sleep, you should speak with your doctor and see if a sleep study can provide the answers you are looking for. Seer Medical provides at-home sleep studies, [contact us today](#) to find out more.

Looking for more sleep resources? Check out the [Sleep Health Foundation](#)