

# ARE YOU SLEEPING WELL?



A concise  
guide to assess  
and improve  
your sleep

# SLEEP, SUCH A MYSTERY...



We spend close to a third of our lives sleeping. Sleep is one of the body's vital functions just like breathing, digestion and immunity.



## SLEEP IS IMPORTANT FOR MANY REASONS:

- Consolidates what has been learned and memorized;
- Maintains cognitive abilities;
- Reinforces the immune system's defences;
- Regenerates cells (skin and organs);
- Promotes the secretion of many hormones;
- Replenishes the energy supply of muscle and nerve cells;
- Promotes emotional development, regulates mood and controls stress.

It is recommended that we sleep seven to eight hours every night. Pay attention to your internal clock - it will tell you which schedule is right for you.

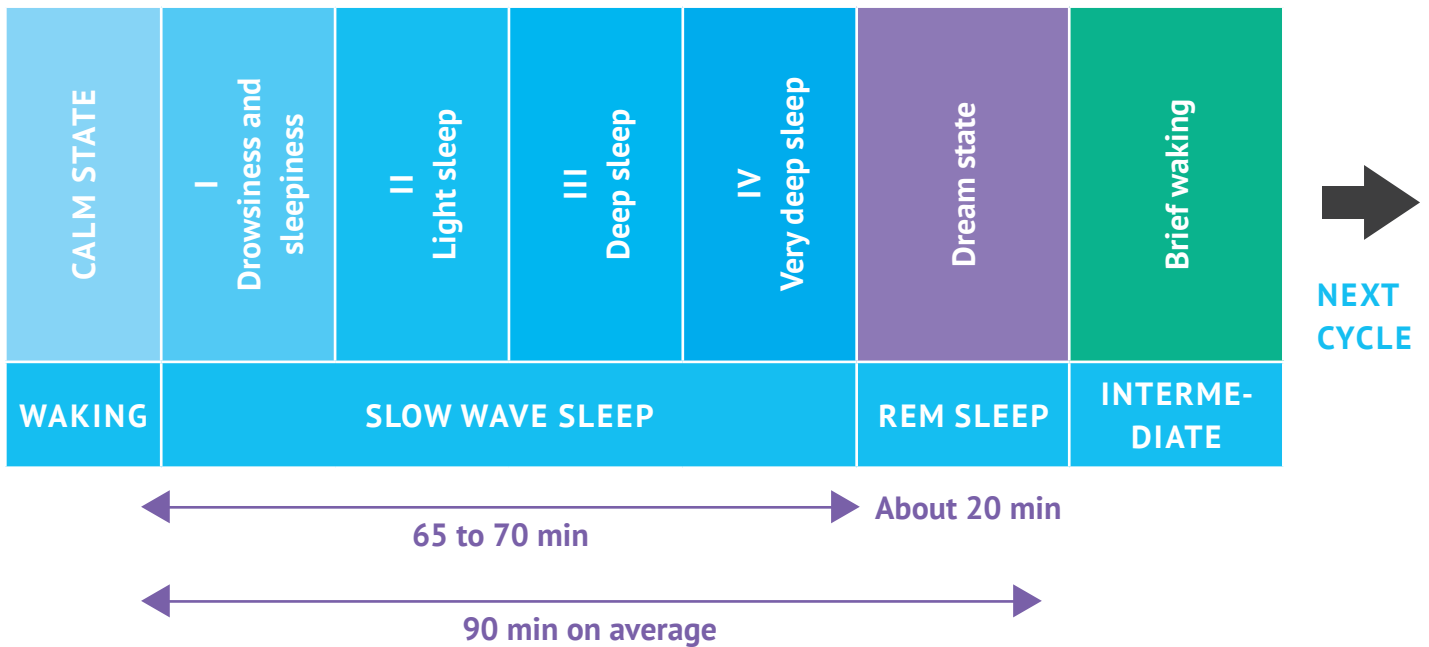
## WHAT HAPPENS WHILE WE SLEEP?

A night's sleep is comprised of many cycles, often four to six, each cycle containing two stages:

- **Slow wave sleep, which covers the light sleep phase to the deep sleep phase**  
Function: physical repair
- **REM sleep (when dreaming occurs)**  
Function: psychological repair

During slow wave sleep, brain activity slows down and, as sleep becomes deeper, the sleeper goes from slow wave sleep to REM sleep. The body's main functions also slowly decrease: the sleeper's pulse and breathing slow, and his blood pressure, muscle tone and body temperature decrease. *Source – Institut national du sommeil et de la vigilance*

# A sleep cycle



## THE CIRCADIAN RHYTHM

This is our “internal clock”, which:

- controls the wake-sleep cycle;
- modulates metabolism and nutrient absorption
- regulates body temperature, heart rate, hormone secretion and muscle tone.



# SLEEP DISORDERS

Sleep disorders can impact our work and our quality of life on a daily basis. There are three basic sleep disorders.

## 1 Sleep issues

Sleep issues can manifest themselves in different ways: lack of sleep, difficulty falling asleep or waking up often during the night. These problems are unpleasant and affect our quality of life, especially if they occur frequently, that is at least three times per week for at least three months.

### Did you know that 40% of adults have sleep issues

*Morin, C. M., M. Leblanc, L. Bélanger, H. Ivers, C. Mérette and J. Savard, "Prevalence of insomnia and its treatment in Canada", Canadian Journal of Psychiatry, vol. 56, no. 19, pp. 540-549, 2011.*

## 2 Chronic insomnia

Chronic insomnia occurs when sleep issues consistently impact our daily lives: drowsiness, trouble concentrating, bad mood, lack of energy, making mistakes, etc. If this is your situation, do not hesitate to consult a health professional who can diagnose the problem and help you get the help you need.

## 3 Obstructive sleep apnea

Obstructive sleep apnea (OSA) is characterized by slight interruptions in breathing during sleep. The sleeper wakes often, sometimes from 50 to 100 times per hour, to take a breath. The consequences of apnea are significant because the individual does not feel as rested as he would after a restorative sleep.

### Did you know that 2 to 10% of the population has OSA

*LEVIA «Sleep: A lever for improved wellness and productivity», 2016. A study prepared in collaboration with the Center of Interuniversity Research and Analysis of Organizations (CIRANO).*

### more than 80% of OSA cases are not diagnosed

*Young, J. H. Barnett, M. Palta, E. W. Hagen and K. M. Hla. "Increased Prevalence of Sleep-disordered Breathing in Adults," American Journal of Epidemiology, 2013, National Center for Biotechnology Information, U.S. National Library of Medicine)*

# Do you have insomnia?

To know for sure, answer the following questions honestly. Check each statement that applies to you.

## A Symptoms

Trouble falling asleep	
Difficulty staying asleep	
Waking up too early	
Your sleep does not feel restorative	

## B Frequency

At least three nights per week	
For at least the past three months	

## C Consequences (during the day)

Fatigue/discomfort	
Attention, concentration and memory problems	
Relationship issues with those around you	
Bad mood or irritability	
Drowsiness during the day	
Lack of motivation, energy or initiative	
Tendency to make mistakes / driving or workplace accidents	
Tension headaches	
Being preoccupied with sleep or thinking about it	

Any combination of these factors can indicate that you are suffering from insomnia. If you checked many boxes, especially the boxes in Section C, we recommend that you consult your doctor.

For insomnia that does not impact your day, check out the 10 easy tips to improve sleep on page 8.



## Do you suffer from sleep apnea?

You are at a higher risk if:

You are obese	<input type="checkbox"/>
You are at least 50 years old	<input type="checkbox"/>
You have a receding chin and a large neck	<input type="checkbox"/>
You suffer from hypertension	<input type="checkbox"/>
You stop breathing or you choke when you are asleep	<input type="checkbox"/>
You snore loudly	<input type="checkbox"/>
You are tired during the day	<input type="checkbox"/>
You are a man	<input type="checkbox"/>

If you think you have sleep apnea, consult your doctor. Sleep clinics have special equipment that identifies and measures sleep interruptions to properly diagnose apnea.

# LACK OF SLEEP IMPACTS OUR HEALTH

## Did you know that

lack of sleep reduces our cognitive functions by 20% to 50%?

*Rosekind, M. "The Importance of Sleep in Enhancing Safety," Sleep Works Summit, September 26-27, 2016, Washington D.C.*



### SHORT TERM CONSEQUENCES OF LACK OF SLEEP

- Concentration is more difficult and our attention span is shorter
- Fatigue and drowsiness during the day
- Mood disorders, irritability and impatience
- Impaired memory
- Higher risk of driving and workplace accidents
- Reduced sensory perception and narrowed peripheral vision
- Decreased muscle reaction time

### LONG TERM CONSEQUENCES OF LACK OF SLEEP



Cardiovascular disease



Diabetes



Hypertension



Weight gain



Compromised immune system



Impaired cognitive functions



Anxiety



Depression



Poor stress management

# HOW TO IMPROVE YOUR SLEEP

## 10 EASY TIPS TO SLEEP BETTER

- 1 Determine how much sleep you need**
- 2 Follow a regular sleep schedule**
- 3 Avoid eating heavy meals and drinking alcohol at night**
- 4 Avoid stimulants before bed: caffeine, tobacco, etc.**
- 5 Avoid engaging in physical activity after 8 p.m.**
- 6 Establish a bedtime routine**
- 7 Turn off all electronic devices at least one hour before going to bed**
- 8 Sleep in a cool room (18 - 20°C)**
- 9 Sleep on an adequate mattress and pillow and make sure your sheets are clean and comfortable**
- 10 Stay active during the day**

### 1 Determine how much sleep you need

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The amount of time you need to sleep for your body to function well. In order to do this, you will need to do the following exercise:

Ideally, this assessment exercise should be done when you are on holiday. If this is not possible, do this exercise many times during the weekends and on your days off when you do not set your alarm.

After a typical day, go to bed as soon as you feel tired, in the conditions you are used to (light, noise, etc.). The following day, wake up on your own, without setting your alarm (or other external means) and write down how many hours you slept. It is important to repeat this exercise a few times to get the best evaluation possible of your sleep needs.

### 2 Follow a regular sleep schedule

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To support your circadian rhythm, which regulates the time spent awake and asleep, you should follow the most regular schedule possible. This helps your body fall asleep more easily, as your internal clock will quickly take over.

For example, if you have determined that you need eight hours of sleep every night and that you must get up at 6 every morning, you should ideally get to sleep by 10 p.m. You should thus be in bed 15 minutes before that time, at 9:45 p.m.

### 3 Avoid eating heavy meals and drinking alcohol at night

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Digesting foods that are too heavy requires an additional effort and will interfere with falling asleep. Alcohol can bring on sleep, but leads to waking up a few hours later and can sometimes disrupt sleep cycles. Despite appearances, alcohol will not help you sleep better, be careful!



# 4

## Avoid stimulants before bed: caffeine, tobacco, etc.

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You should know that the effects of caffeine in the body can be felt up to five hours after ingestion. If you have a coffee at 7 p.m., you risk waking up at around midnight and having a hard time getting back to sleep.

Among the 4,000 chemical substances contained in cigarettes, nicotine is a powerful stimulant that significantly alters sleep. The magazine *Addiction Biology* featured a new study on the effects of smoking on sleep. The more you smoke, the shorter and poorer quality your sleep will be. According to this study, people who smoke the most reported having a poorer night's sleep. When you smoke, falling asleep takes longer, sleep time is shorter and the quality of sleep is not as good.

# 5

## Avoid engaging in physical activity after 8 p.m.

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The ideal body temperature to fall asleep is 36.5°C. We can fall asleep more easily when our body temperature drops. Physical activity close to bedtime raises the body's internal temperature and interferes with falling asleep.

# 6

## Establish a bedtime routine

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Once you have established the best sleep schedule for your health, start getting ready for bed an hour or at least 15 minutes before going to bed and use the same ritual every day.

For example, you can take a shower or a hot bath, read in bed or listen to music, meditate, practise deep abdominal breathing, lightly stretch, drink herbal tea or a glass of hot milk, which are all good habits to have before bed. Evaluate how long your bedtime routine is and make sure you start it at the proper time.

Executing this routine daily will send the signal to your brain to release melatonin, the sleep hormone, so that you can fall asleep faster and sleep better.

# 7

## Turn off all electronic devices at least one hour before going to bed

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The light emitted by electronic devices is similar to that of the sun and tricks the brain into thinking it is still daytime. This delays the release of melatonin (the hormone released by the body a few hours before sleep, which helps us fall asleep).

So turn off your devices earlier. If you must absolutely work, lower your computer screen's brightness. There are applications that gradually reduce screen brightness during the day as well as blue light emissions. Especially avoid all video games involving combat or a lot of action because their stimulating effect interferes with falling asleep.

Do televisions and computers have the same effect? Television screens and computer screens are different because of their respective distance from your eyes and the fact that watching television is generally a passive activity. So watching television can help you fall asleep, especially if you are watching something that is conducive to relaxation.

# 8

## Sleep in a cool room (18 - 20°C)

Keep your room's temperature between 18 and 20°C. If you get into bed and your extremities (feet and hands) are cold, your body temperature will tend to stay higher in order to warm you up. Wear socks and warm the bed before climbing into it.

# 9

## Sleep on an adequate mattress and pillow and make sure your sheets are clean and comfortable

Sleep on an adequate mattress and pillow and comfortable sheets. We sleep better in a clean bed, so wash your sheets regularly. Also make sure that your head is supported by your pillow. Is your pillow suited to your sleeping position? Is it time to replace it?

Does your partner interfere with your sleep because he or she snores or moves too much? Some mattresses are now made with separate coils that prevent the whole bed from moving.

# 10

## Stay active during the day

Exercising moderately for 30 minutes every day (or at least 150 minutes weekly) can help you fall asleep and have a deep and restorative sleep.



Regular physical activity impacts sleep in many ways:

- Helps to regulate our internal clock (circadian rhythm);
- Helps to maintain an ideal body weight;
- Prevents anxiety, depression and can act as a painkiller;
- Stimulates the secretion of many hormones such as endorphins and serotonin, the feel good hormones.

### WANT TO TAKE A NAP? WHY NOT!

Did you know that taking a 20-minute nap after lunch is enough to:

- improve your memory
- unleash creativity
- reduce stress
- restore the balance of your nervous system
- promote good digestion
- improve your cardiovascular system

Choose a quiet place, it does not necessarily have to be in bed. The length of an ideal nap is anywhere between 10 to 30 minutes maximum. The ideal time to take a nap is between noon and 3 p.m. Use a timer so you do not sleep more than 30 minutes.

We recommend that people who drive vehicles stop as soon as they feel sleepy. It's wiser to sleep on the side of the road than to keep on driving. Be vigilant!

# PARTICULAR ISSUES

## Non-standard work schedules

It is important for night and shift workers to closely monitor their sleep habits and problems.

### Tips

- Try to sleep for a total of seven hours daily (it can be divided into two periods of time, one of five or six hours and another of one to two hours).
- Keep a sleep journal.
- Try to choose a dark, quiet place.
- After work, try to avoid stimulating your senses (light, noise, stimulating substances) when you begin your sleep routine.
- Regularly engage in physical activity and eat healthily.
- Cook meals in advance so they are ready when you get home from work.
- Do not hesitate to consult your doctor if you experience sleep problems for many weeks.



## Frequent jet lag

For each hour of time difference, the body takes one day to adapt.

Avoid consuming alcohol, hydrate well and set your watch to the new time as soon as you board the plane.

You are travelling west? Delay your sleep and wake times, as much as possible. Expose yourself to sun or light mainly in the afternoon, and wear sunglasses in the morning. Practise your physical activities at the end of the day or early in the evening.

Are you travelling east? Go to bed and wake up earlier. Expose yourself to sunlight and exercise in the morning. Wear sunglasses in the afternoon.

# Do you really know how well you are sleeping?

## Keeping a sleep journal is the best way to find out

A sleep journal helps you evaluate the quality of your sleep, your sleep habits and sleep hygiene during a one-month period. You need only mark down the following information in the morning and in the evening:

- the time you went to bed 
- how many hours you slept 
- when you woke up during the night 
- what time you got up 
- drowsiness/when you yawned during the day 
- sleepiness during the day 
- meals 
- intense sports 
- medication taken (in the comments column)

Awareness of your sleep hygiene will help you identify the habits that need to be changed. You can also show your journal to your doctor if you often have problems.

## My sleep journal

		EVENING					NIGHT					MORNING					AFTERNOON					Rate the amount of time you slept	Rate the quality of your sleep	Notes / medication taken				
		6 pm	7 pm	8 pm	9 pm	10 pm	11 pm	12 am	1 am	2 am	3 am	4 am	5 am	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	OUT OF 10	OUT OF 10	

DATE																												



# MOBILE APPS

More and more mobile apps are targeting sleep issues. For example, some apps will track your movements or your circadian rhythm at night.

These apps, while not essential, can be interesting to use and can offer good advice and support. Here are a few apps you can try:

- **Sleep Genius**

Developed by the NASA team to help astronauts sleep in space. Sleep Genius contains an alarm, a way to set your sleep schedule, tips on relaxation to help you fall asleep as well as an application for taking naps.

- **SleepBot**

An alarm and sleep tracker, this app logs your sleep statistics on your computer or smartphone.

- **Sleep Cycle**

Developed in Sweden, this app helps you track your sleep cycles and also helps you wake up during light sleep.

- **Motion X 24-7**

This app measures and correlates resting heart rate with sleep quality, determines the optimal time to wake up during your sleep cycle, optimizes your naps and lets you know when you should be active.

- **Sleep Time**

Sleep Time plays music and soothing sounds to help you fall asleep, analyzes your sleep patterns and helps you wake up during the light sleep phase.

- **Health Mate**

Health Mate tracks your daily activity and measures your heart rate through your smart phone's sensors. This app helps you set sleep goals and follow your progress.

- **Sleep as Android**

Sleep as Android analyzes your sleep cycle to help you wake up during the light sleep phase.

- **Smart Alarm Clock**

Smart Alarm Clock records sounds during sleep and analyzes your cycles. The app helps you fall asleep in an optimal way by providing hundreds of soothing sounds.

## TO LEARN MORE

- Centre for Disease Control, [www.cdc.gov/sleep](http://www.cdc.gov/sleep)
- Center for Advanced Research in Sleep Medicine, Hôpital Sacré-Cœur <http://www.ceams-carsm.ca/en>
- Gratton, Nicole. *Are you sleeping well?* Éditions Flammarion Québec, 2006, 222 p.
- Huffington, Arianna. *The Sleep Revolution: Transforming Your Life, One Night at a Time* Hardcover – Apr 5 2016.
- Sleep Association, [www.sleepassociation.org](http://www.sleepassociation.org)
- Sleep Foundation, [www.sleepfoundation.org](http://www.sleepfoundation.org)

### Source:

1. LEVIA, “Sleep, a lever for improved wellness and productivity,” 2016. A study prepared in collaboration with Center for Interuniversity Research and Analysis of Organizations (CIRANO).



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