

## Pain Foundations

# Sleep Wellness

Adults need 7 to 9 hours of sleep each night. Sleep helps you to restore physically and emotionally so that you can perform well during the day.

Getting less sleep than you need can affect many areas of your life.

## Benefits of sleep

### Pain

- Improved pain tolerance
- Lowered pain intensity
- Less sensitivity to triggers of pain

### Brain health

- Better brain function including memory, decision-making, concentration, and problem solving.
- Improved ability to learn new information and skills

### Mood

- Decreased stress hormones
- Lowered levels of depression and anxiety
- Improved emotional well-being

### Immune function

- Improved function of the immune system
- Less likely to become ill
- Improved response to medications and vaccines

### Physical health

- Improved repair after injuries to the body
- Increased energy levels
- Decreased risk of chronic illnesses such as diabetes, heart disease and stroke
- Less weight gain



Visualization of the circadian rhythm taken from [www.livelli.com/blogs/the-wave/circadianrhythm](http://www.livelli.com/blogs/the-wave/circadianrhythm)

## How sleep works

The **circadian** (say **sir-kay-dee-un**) rhythm is like a clock inside your body. It controls when you feel sleepy.

Light and darkness affect your circadian rhythm, which tells your body to make chemicals such as melatonin and cortisol.

Being in light during the day helps you to be more alert, awake, and active. As night comes and it gets darker, your body makes melatonin. This hormone helps you fall asleep, and stay asleep through the night.

You might get “jet lag” when you travel to a new time zone. This is because your internal clock has not yet adjusted to the new time zone. Working different shifts can also affect your circadian rhythm. It can cause sleep issues long term.

**Sleep drive** is your body's increase in pressure to sleep.

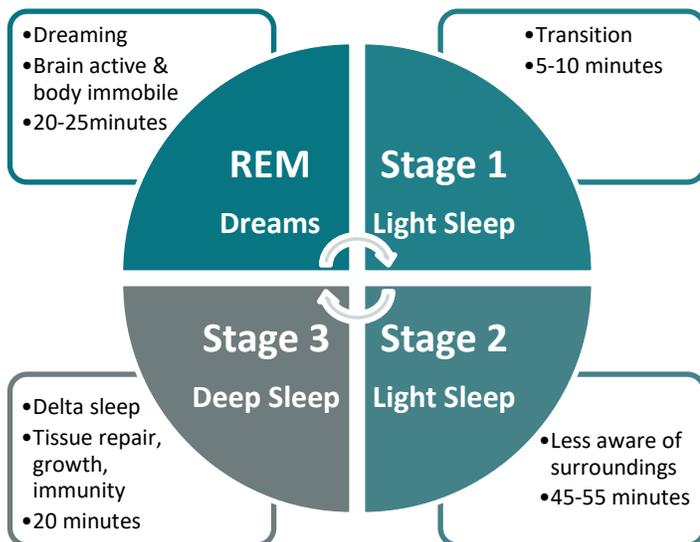
The longer that you are awake, the more your sleep drive builds up.

Physical activity also affects your sleep drive. When you do physical activity, your body releases a chemical called adenosine (say uh-den-uh-seen). As adenosine builds up, it increases your sleep drive.

## Stages of sleep

When we sleep, we move through multiple sleep cycles. Each cycle lasts about 90 to 120 minutes. During each cycle, we progress from Stage 1 to Stage 3 and then to R.E.M. (Rapid Eye Movement) sleep.

As we move through the stages, it is normal to wake up 6 or more times. Most of these times we do not remember. If you are experiencing stress or pain, it might be more difficult to get back to sleep when you wake up.



### Stage 1

This light stage of sleep is when you are between being awake and falling asleep.

You can still be aware of surroundings and easily awakened.

### Stage 2

During stage 2 you are starting to become less aware of your surroundings. During this stage:

- Body temperature drops
- Breathing and heart rate start to slow

### Stage 3

This is the deepest stage of sleep. It is difficult to wake up during stage 3. During this stage:

- Blood pressure and breathing slow down
- Muscles are more relaxed and receiving more blood supply
- Tissue growth and repair occurs and hormones are released
- Immune response can be activated to fight illness

### R.E.M. Sleep

R.E.M. means **R**apid **E**ye **M**ovement. During this stage:

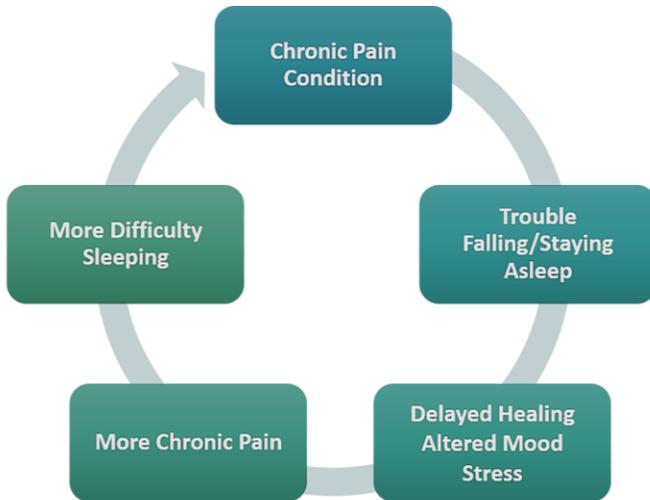
- Electrical activity in the brain increases
- Muscles are very relaxed and body does not move
- Energy is provided to the brain and body which helps daytime performance
- Dreams often occur

## Sleep and chronic pain

Approximately 50% to 80% of people who have chronic pain also have difficulty with sleep. This is because poor sleep and pain affect each other.

Having chronic pain can increase the chance of sleep problems.

Having poor sleep can make you more sensitive to pain.



## Sleep disorders

### Insomnia

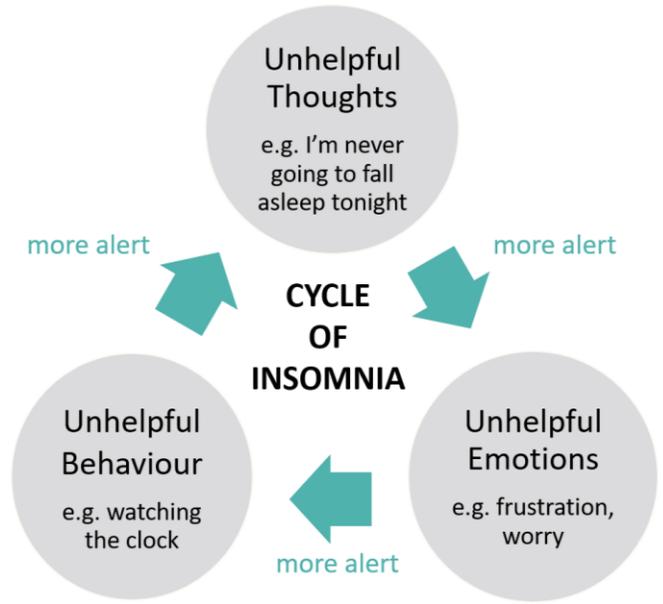
Insomnia is a persistent problem with sleep, which lasts more than one month. Insomnia can include:

- difficulty falling asleep
- difficulty staying sleep
- waking up too early
- not being able to return to sleep

Most people will sometimes have acute insomnia. It can be problem if it becomes chronic. Insomnia can lead to:

- negative thinking patterns around sleep
- anxiety
- tension when trying to fall asleep

Insomnia can also cause changes in habits that might lead to more difficulty with sleep.



### Sleep apnea

Sleep apnea (say ap-knee-ah) is a sleep disorder where a breathing is interrupted during sleep.

Signs that you have sleep apnea include loud snoring, feeling tired all the time, and the observation that your breathing stops during sleep. The chance of you having sleep apnea is higher if you are of the male sex, and if you have high blood pressure, a large neck size, and a high body weight.

Sleep apnea can be a serious health issue. If you suspect you have sleep apnea, please speak to your family doctor.

## Sleep management

Getting back into a regular sleep-wake cycle takes time and effort. Look at the things in the following section that can affect sleep. Decide if there are things that you can change.

Writing in a sleep diary for 1 to 2 weeks might be helpful.

When you make a change, allow enough time for it to take effect.

### Daytime habits

#### Caffeine

Try not to have drinks with caffeine, medications that have caffeine, and foods with caffeine such as chocolate, in the 6 hours before your bedtime, or after 2:00 pm. Caffeine might block your sleep drive.

#### Nicotine

Try not to have nicotine 4 to 6 hours before bedtime. Nicotine can make it difficult to sleep. This is because it can increase your heart rate and breathing rate.

#### Smoking

Try not to smoke for several hours before bed. Smoking speeds up brain waves and increases the level of stress hormones in your body. This can last for several hours after smoking.

#### Alcohol

Try not to have alcohol 4 hours before bedtime. Alcohol makes you sleep lighter. It also breaks up your sleep by stopping you from entering deep sleep.

#### Large or spicy meals

Try not to eat big or spicy meals right before bedtime. They can cause indigestion that makes it hard to sleep. Instead, have a small snack 45 minute before bedtime if you are hungry.

### Exercise

A lack of physical activity can lead to poor sleep. Physical activity helps build your sleep drive. Studies have found that being active within your abilities can help with the deep stage of sleep. The deep stage of sleep is when your body restores itself.

Try not to do hard exercise too close to your bedtime. Instead, do something relaxing like stretching or yoga.



Image by girmarc on Freepik

### Environment

Try to sleep in a place that is good for sleep. A room that is dark, quiet and cool (15 to 20°C) makes it easier to sleep.

### Sleep routine

A bedtime routine helps you fall asleep by alerting your brain that it is time for sleep. Start your bedtime routine at the same time each day if possible. Do the steps to your bedtime routine in the same order every day.

Try things like calm music, aromatherapy, meditation, and deep breathing to wind down from your day. This helps prepare your mind and body for sleep. Taking a warm bath or shower, journaling, reading, drinking herbal tea, practicing gratitude, and preparing for the next day are common strategies.

## Thinking about sleep

Having negative thoughts about sleep can cause you to have problems such as anxiety, tension, and increased stress hormones. These things can cause poor sleep. They can also make having a bad sleep more stressful.

Try using mindfulness to shift from “something is wrong” to “this is how my body is sleeping right now.”

Watch out for unhelpful thinking, such as the following.

- Assuming the worst about what will happen with sleep changes
- Assuming the worst about the meaning of sleep changes
- Thinking that sleep changes are permanent or you cannot fix them.
- Blaming everything on not having enough sleep.

## Electronics and light

Light effects your sleep cycle. When light enters your eyes, your melatonin decreases. When you are in darkness, your melatonin levels increase.

To help your circadian rhythm you can do the following.

- Be in light when you wake up.
- Avoid bright lights before your bedtime.

Electronics might be too stimulating at bedtime. You want to have your brain wind down at bedtime. About one hour before bedtime, stop using your cell phone, tablets, television, computers, and other electronics.

### Ways to Reduce Blue Light

-  Replace bedroom lightbulbs with softer, red-orange coloured lighting or candlelight
-  Install F.Lux on your computer to change screen hue
-  Switch to night mode on your devices
-  Wear blue-light blocking glasses

Icons by flaticon | lamp, laptop, moon, glasses  
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## Sleep reset

Studies tell us that the following are the most beneficial ways to improve your sleep.



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### Get up at the same time, every morning

To keep your internal clock regular, get up at the same time each morning. Even if you did not sleep well at night, get up at the same time. Also, get up at the same time on weekends. This is the most important step to reset your sleep pattern.

### Allow 20 minutes to fall asleep

If you are not asleep after 20 minutes:

1. Get out of bed and go somewhere in your home with low lighting.
2. Do a relaxing activity that works for you. It could be belly breathing, listening to soothing music, or reading something calm. Try not to have screen time.
3. When you feel sleepy, return to bed.

Repeat these steps until you fall asleep. Do these steps even if you wake up in the middle of the night. This will help your brain connect your bed with falling asleep.

Do not use your bed for other activities such as reading or watching shows.

### Avoid naps

Until your sleep is more regular, try not to nap, even after nights when you have had little sleep.

You will likely feel tired during the day. Fight off the urge to nap and you will feel ready to sleep by bedtime. Do not go to bed earlier than usual.

## Sleep programs

If you have used these sleep strategies and still have difficulty falling asleep, you might want to try a more structured sleep program. You can do sleep programs on your own with a workbook, online, or in person with a professional.

Let your doctor know about your sleep concerns. Tell your doctor about the steps you are taking to improve your sleep.

### Cognitive behaviour therapy for insomnia

Cognitive Behaviour Therapy for Insomnia, which is also called CBT-I, works for 3 out of 4 people with insomnia. Studies tell us that people fall asleep faster, wake up less during sleep, and stay asleep longer. These benefits often lasted over time.

- **Cognitive interventions:** Change inaccurate and unhelpful thoughts about sleep.
- **Behavioural interventions:** Relaxation training, stimulus control by linking bed to sleep, and sleep restriction by limiting time in bed.
- **Psychoeducational interventions:** Providing information about the connection between thoughts, feelings, behaviour, and sleep.



Image by gstudioimagen on Freepik

**Acceptance commitment therapy for insomnia**

Acceptance Commitment Therapy (ACT) is another psychological program for treating insomnia. Studies have shown it can improve sleep quality in patients with insomnia and reduce severity of insomnia long term.

ACT uses acceptance and mindfulness to improve psychological flexibility. It involves techniques that help you to notice, and become comfortable with, the thoughts and feelings you have around sleep.

**What stood out to me in this section?**

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**Questions I still have on this topic**

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# Sleep Diary

Habits Prior to Sleep							Sleeping Patterns					
Date	Naps •time •length	Caffeine Cigarettes Alcohol •day total •time last used	Activities •in the 3 hours before bed	Daytime Tiredness •0-5 (5 is the most tired)	Ready for Sleep •0-5 (5 is relaxed, 0 is tired) • Sleep aid	In Bed Activities e.g. reading	Lights Out •time	Time to Sleep •approx. # mins until you fell asleep	How Often You Woke •# of times •longest time awake	Morning Wake Time	Total Hours of Sleep	Refreshed Score •0-5 with 5 feeling very rested
02/23	2PM 20mins	Alcohol x2 10PM	TV x 3hrs	3	3 SA 9PM	Reading	11PM	30mins	4 20mins	5:30AM	~5.5hrs	2

- TV** = Television  
**S** = Screen time  
**R** = Reading  
**W** = Walking  
**E** = Exercise
- C** = Caffeine (coffee, tea, energy drinks, chocolate liquors)  
**SA** = Sleep aid (any medications or supplements to help sleep)  
**Cig** = Cigarettes (cigarettes, cigars, vaping)  
**A** = Alcohol (beer, wine, hard alcohol)

Your abbreviations:  
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## Resources

### Videos



#### [Live Plan Be – Pain BC](#)

Watch various videos and read articles about how to improve sleep for people with chronic pain.

#### [Vancouver Anxiety Canada – \(CBTi\)](#)

Watch one hour video of Dr. Korol, Psychologist in Vancouver sharing strategies to help you get a good night's sleep.



### Websites



#### [Kelty's Key](#)

Take a free, self-paced, online course to learn how to manage insomnia.

#### [Toronto Academic Pain Medicine Institute](#)

Watch a series of short modules about how to manage sleep and chronic pain.



#### [Anxiety Canada](#)

Read a short article with sleep tips for improved sleep.

### Apps

**Insight Timer** Includes sleep meditations, sleep stories and music to promote sleep.

**Headspace** Includes sleep stories, meditation, and relaxation.

### Books

**The Sleep Book. How to Sleep Well Every Night** by Guy Meadows. A step-by-step program using ACT principles

**The Insomnia Workbook: A Comprehensive Guide to Getting the Sleep You Need** by Stephanie Silberman. A step-by-step program using CBT principles