

# Guideline for Concussion/Mild Traumatic Brain Injury and Persistent Symptoms

3<sup>rd</sup> Edition - for adults, +18 years of age



Ontario Neurotrauma Foundation  
Fondation ontarienne de neurotraumatologie

## Patient Version

This guideline has been created to help with management of concussion/mild traumatic brain injury (mTBI). It is only for management for adults over 18 years of age. The guideline can be used by patients when speaking with healthcare providers about their care. It covers getting a diagnosis, managing symptoms in the early phase (acute) and management in the longer recovery phase (persistent symptoms). It is based on up-to date, quality research evidence, the expertise of providers and the input of patients.

## 7) Sleep-Wake Disturbances

Sleep disturbances are very common after a concussion/ mTBI. About half of people with any traumatic brain injury have some form of sleep disturbance. Sleep disturbances are especially common if there is pain related to the injury.

A lack of good quality sleep can affect your mood, ability to think, perform daily activities, and interact with others. It can also affect your ability to remember, focus, and learn.

Common sleep disturbances after a concussion/mTBI include:

<b>Insomnia</b>	<ul style="list-style-type: none"><li>• Difficulty falling or staying asleep, and/or difficulty getting restful sleep.</li></ul>
<b>Sleep apnea</b>	<ul style="list-style-type: none"><li>• Breathing problems during sleep, such as snoring or breathing that stops and starts.</li></ul>
<b>Narcolepsy</b>	<ul style="list-style-type: none"><li>• A lot of daytime sleepiness and uncontrollable episodes of falling asleep during the daytime.</li><li>• These sudden sleep attacks may occur during any type of activity at any time of the day.</li></ul>
<b>Post-traumatic hypersomnia</b>	<ul style="list-style-type: none"><li>• Need for excessive amounts of sleep.</li></ul>
<b>Circadian rhythm sleep disorders:</b>	<ul style="list-style-type: none"><li>• Difficulty falling asleep at night and staying awake in the daytime.</li></ul>

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|--|--|
|  | <ul style="list-style-type: none"><li>• Preferring sleeping in the daytime and staying awake at night.</li></ul> |
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If you think you might have any of these types of sleep disturbances, use a sleep diary for 1 or 2 weeks to find out how much time you are spending actually sleeping. Calculate the time you spend in bed, the time it takes you to fall asleep, and any time spent awake during the night.

### How will my doctor diagnose my sleep disturbance?

Your doctor will want to find out if you had sleep difficulties before the concussion/mTBI. They also may suggest that you have a sleep assessment in a lab or may refer you to a sleep specialist.

Your doctor may ask you about the following:

- Medical conditions (like diabetes or thyroid disorder)
- Medications you are taking
- Mental health problems (like anxiety or depression)
- Your sleeping, waking, and exercise habits
- For women, your menstrual cycle

### What treatments will my doctor prescribe?

Your doctor may prescribe different treatments depending on the type of sleep disturbance you have.

If you have insomnia (difficulty falling or staying asleep during the night) your doctor may recommend a type of talk therapy called cognitive behaviour therapy or CBT, which can be very helpful if performed by a specialist.

Your doctor may also recommend that you take melatonin 2 hours before bedtime, as well as zinc or magnesium supplements. Other therapies that may be helpful include:

- Morning light therapy
- Acupuncture
- Mindfulness-based stress therapy
- Reducing exposure to evening light

However the evidence on these therapies is still being proven in people with post-concussion/mTBI symptoms.

If your doctor prescribes a sleep medication, it is very important that you do not drive or drink alcohol when you take it. It is also a good idea to make sure you do not have to be somewhere early the next day, as you might be sleepy in the morning.

## What can I do to improve my sleep?

It is important to have good sleep habits to get a good night's sleep and feel rested during the day. Good sleep habits are also known as "Sleep Hygiene". As a first step to improving your sleep, your healthcare provider will suggest that you follow the sleep hygiene program below.

Use this sleep hygiene program to learn good habits and behaviours that will help improve how you sleep.

## 1. Healthy habits

- Go to bed and wake up at the same time every day.
- Have a bedtime routine. A warm bath and/or light massage before bed may be helpful.
- Your need for a nap will depend on how long it has been since your concussion/mTBI and how sleepy or tired you feel.

### **In the first few days after the concussion/mTBI:**

Sleep is important to the recovery process, so do not limit your naps. Talk to your doctor or go to the emergency department if you have difficulty waking up.

### **After the first few days:**

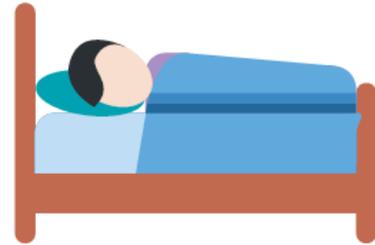
Avoid naps, if you can. If you are very sleepy, try to take only one nap per day before 3:00 PM, keep it shorter than 30 minutes, and try to sleep in bed.

## 2. Diet, exercise, and lifestyle

- Get some natural (outside) light during the day.
- Avoid sugar and caffeine in the 4 to 6 hours before bed.
- Avoid alcohol too close to bedtime.
- Avoid heavy meals late in the evening.
- Consider having a bedtime snack that contains protein.
- Eat foods high in magnesium, iron, and B vitamins. These nutrients help the body produce melatonin, which promotes sleep.
- If your doctor says you can start to exercise, and you feel able to do it, try to have 30 to 60 minutes of vigorous exercise per day.
- Avoid exercising two hours before bed.

### 3. The sleeping space

- Keep your sleeping space dark, cool, and comfortable at night.
- Try to keep this space clean, tidy, and quiet (you can use neutral or natural sounds to help block out sounds that might wake you).
- Use your bed and bedroom only for sleeping, if possible. Try to read, watch TV, use the computer, and play games in another room.
- Keep your bedroom free of electronic equipment, such as computers, tablets, cell phones. If this is not possible, either turn them off or put them in “sleep” mode.
- Avoid using a digital clock with numbers that light up. If this cannot be avoided, turn it away from the bed and avoid looking at it during the night.



### TOOLS AND RESOURCES

- ✓ [Appendix 7.4 Sleep Hygiene Program](#)
- ✓ [Appendix 7.5 Behavioural Recommendations for Optimal Sleep](#)
- ✓ [Appendix 7.6 Sleep Diary](#)
- ✓ [Appendix 7.7 Limiting the time spent in bed to actual sleep time](#)
- ✓ [Appendix 7.8 Re-creating a time and place for sleep](#)
- ✓ [List of medications for different persistent symptoms](#)

# Appendix 7.4

## Sleep Hygiene Program\*

### Healthy Habits to Promote Good Sleep

- Maintain the same bed and wake time daily.
- Establish a fixed bed-time routine. A warm bath and/or light massage before bed may be helpful.
- The need for a nap should be evaluated depending on the time post-injury and severity of daytime sleepiness (and not fatigue). In the acute stage post injury (i.e., first few hours/days), naps are a natural part of the recovery process and should not be limited. Consult a doctor or emergency department if you are not easily awoken in the first few hours or days after your injury. Beyond the acute period, naps should be avoided as to promote night-time sleep and should not impede gradual return to activity.
- If sleepiness is significant and naps cannot be avoided, ideally naps should be limited to one per day, shorter than 30 minutes, and be taken before 3:00 PM. When napping, attempt to fall asleep in bed (not in another room, or in front of the tv, etc.).

### Nutrition, Exercise and Lifestyle

- Avoid consumption of caffeine within 4-6 hours of bedtime.
- Avoid consumption of alcohol too close to bedtime. When metabolized, alcohol can produce awakenings or lighter sleep.
- Avoid heavy meals late in the evening.
- Consider adding a bedtime snack containing protein. Avoid sugar 4 hours before bedtime.
- Adequate vitamin and mineral intake is important to help the body produce melatonin, which promotes sleep. Make sure there is enough magnesium, iron and B vitamins in the diet.
- When tolerated and medically indicated, encourage 30-60 minutes of vigorous exercise a day, as regular exercise promotes sleep. Avoid exercising within two hours of sleep.
- Expose yourself to natural light during the day.

### Sleeping Environment

- The sleeping area should be dark, cool and comfortable.
- Ideally there should be no source of light in the bedroom while sleeping.
- The room should be clean, tidy and quiet (e.g., neutral or natural sounds can be helpful to block out distracting sounds)
- The bed and bedroom should be reserved for sleep. Other activities (reading, watching TV, using internet, playing games) should take place in another room. Ideally there should be no electronic equipment in the bedroom. If this is unavoidable, make sure that all computers, tablets, cell phones etc are either turned off or at the very least in 'sleep' mode.
- Having a digital clock in the bedroom with numbers that 'light up is not recommended. If there is, it should be turned away from the bed. If the individual awakes in the night, it is recommended not to look at the clock.

Refer to the Canadian Sleep Society website <http://www.canadiansleepsociety.ca/tours> for further information and specific resources, available in both English and French (Publications section).

\* Taken with permission from the authors: C. Wiseman-Hakes (U of Toronto, Canada), M-C. Ouellet (U Laval) & S. Beaulieu-Bonneau (U Laval).

# Appendix 7.5

## Behavioural Recommendations for Optimal Sleep\*

**Objective A:** Restrict the time you spend in bed to the actual time you spend sleeping: spending too much time in bed may actually contribute to your sleep problem. (Appendix 7.7)

- 1- Monitor your sleep with a sleep diary ([Appendix 7.6](#)) for 1 or 2 weeks. Calculate the time spent actually sleeping (Time spent in bed minus time to fall asleep and awakenings).
- 2- Under the supervision of your health-care provider, set up a sleep window with a duration corresponding to the actual sleep time of the past 1-2 weeks, and with fixed bedtime and rising time. The sleep window should not be of less than 5.5 hours.
- 3- Maintain the sleep window for at least one week.
- 4- Set a consistent wake time (even on weekends), and regardless of amount of sleep obtained.
- 5- On a weekly basis, gradually adjust the sleep window based on your sleep quantity and quality:
  - If you sleep more than 85% of time you spend in bed and/or you constantly feel sleepy during the day, increase the sleep window by 15-20 minutes.
  - If you sleep less than 85% of the time you spend in bed, decrease the sleep window by 15-20 minutes.
  - Continue this procedure until you achieve an acceptable sleep quality and duration AND you do not feel sleepy during the day.

**NOTE:** feeling tired (unenergetic, weary, having difficulty maintaining attention or effort) is different than feeling sleepy (drowsy, yawning, eyelids drooping).

**CAUTION:** You may feel sleepy or tired in the first days/weeks when following these recommendations. Be cautious with activities which may put you in danger (e.g., driving, operating machinery).

**Objective B:** Re-associate your bed, bedroom and bedtime with sleep and sleepiness rather than with sleep-incompatible activities or the anxiety of not sleeping. (Appendix 7.8)

- 1- **Get up at the same time every morning, regardless of the amount of sleep you obtained.** Maintaining fixed bedtime and rising time helps regulating the biological and maximizing sleep drive at the optimal time.
- 2- **Allow at least 1 hour before bedtime to unwind.** This is intended to facilitate the transition from wakefulness to sleepiness, and to sleep onset. In this time, you should plan quiet, relaxing, and pleasant activities.
- 3- **Go to bed only when sleepy.** Going to bed when feeling wide awake only leads to prolonged wakefulness and further associates the bed and bedroom with insomnia rather than sleep. Wait until you feel the signs of sleepiness (yawning, eyelids drooping) before trying to sleep.
- 4- **If you are unable to fall asleep or fall back to sleep within 15-20 min, get out of bed and find something else to do in another room.** Again, the rationale is to strengthen the association between your bed and bedroom, and sleep. When applying this strategy, it is important to choose a quiet and relaxing activity, avoid stimulating ones (e.g., computer or TV), and avoid bright light. Go back to bed only when you feel sleepy again. Repeat this procedure as often as necessary.
- 5- **Reserve your bed and bedroom for sleep only.** The bedroom environment should be associated with sleep only, sexual activities being the only exception. All other activities, such as reading, worrying about your personal or health problems, or watching TV, should be done elsewhere.
- 6- **Limit daytime napping.** Beyond the first few days post-injury, it is best to avoid daytime napping. Naps can affect the quantity and quality of sleep the following night. Naps longer than 30 min can be followed by an unpleasant period of sleepiness and difficulty concentrating than can last up to 1 hour upon awakening. If daytime sleepiness is too overwhelming, take a short nap (not exceeding 1 hour and taken before 3:00 PM).

These recommendations should be implemented together with a sleep hygiene program ([Appendix 7.4](#)), under the supervision of a healthcare professional.

\* Taken with permission from Ouellet MC, Beaulieu-Bonneau S Morin CM. Sleep-Wake Disturbances. In Eds. Zasler ND, Katz DI, Zafonte RD. Brain Injury Medicine: Principles and Practice. New York; Demos Medical Publishing LLC; 2012.

# Appendix 7.6

## Sleep Diary\*

**NATIONAL SLEEP FOUNDATION**

# Sleep Diary

Sufficient sleep is important for your health, well-being and happiness. When you sleep better, you feel better. The National Sleep Foundation Sleep Diary will help you track your sleep, allowing you to see habits and trends that are helping you sleep or that can be improved.

### How to Use the National Sleep Foundation Sleep Diary

- ❖ Our sleep diary only takes a few minutes each day to complete.
- ❖ We've given you diary entries for seven days; you may want to make several copies.
- ❖ Review your completed diary to see if there are any patterns or practices that are helping or hindering your sleep. Is your bedroom a sanctuary for sleep? Or are there too many distractions? Did your nap interfere with a good night's sleep?
- ❖ Make incremental changes. Changing one habit at a time can set you on the path to healthy sleep.

Visit [sleepfoundation.org](http://sleepfoundation.org) for more sleep tips.

The National Sleep Foundation is dedicated to improving health and well-being through sleep education and advocacy. It is well-known for its annual Sleep in America® poll. The Foundation is a charitable, educational and scientific not-for-profit organization located in Washington, DC. Its membership includes researchers and clinicians focused on sleep medicine, health professionals, patients, families affected by drowsy driving and more than 900 healthcare facilities.

[www.sleepfoundation.org](http://www.sleepfoundation.org)

**NATIONAL SLEEP FOUNDATION**

\* National Sleep Foundation. Sleep Diary



# Appendix 7.7

## Limiting the time spent in bed to actual sleep time

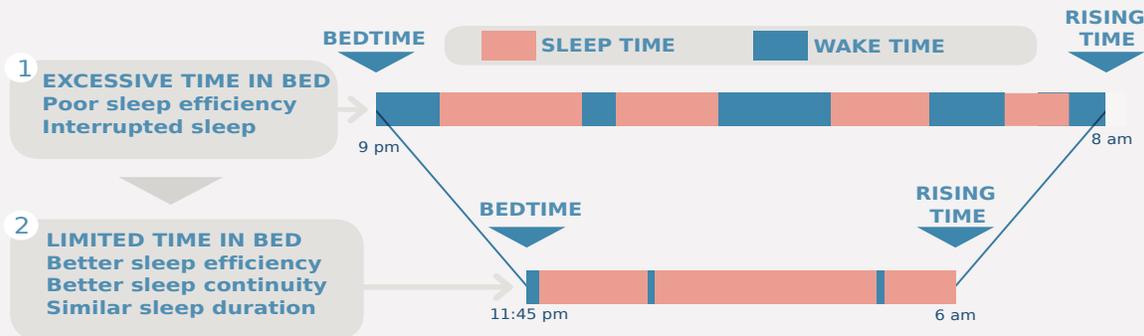


### Limiting the time spent in bed to actual sleep time

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One of the strategies most commonly used to try to eliminate insomnia is to spend more time in bed, by going to bed earlier, getting up later, or taking naps. These practices can be beneficial in the short term. However, they can be detrimental in the long term: spending too much time awake in bed tends to fragment sleep and perpetuate insomnia. Indeed, while they are in bed yet not sleeping, many people start worrying or using that time to problem-solve. The solution is to limit the time spent in bed to actual sleeping time.

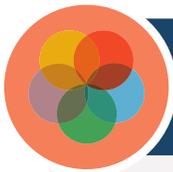
- This strategy is very effective for decreasing sleep fragmentation and increasing sleep quality;
- The initial effect is to produce a mild state of sleep deprivation, which makes it easier to fall asleep and improves the continuity of sleep through the night;
- In the beginning, the goal is to improve sleep quality and efficiency, but not necessarily to increase sleep duration, which can be achieved subsequently.



### How to apply this strategy?

- 1 Determine the duration of your sleep window based on the amount of time slept.
- 2 Choose a set bedtime and rising time to define the sleep window.
- 3 Each week, adjust the sleep window based on your sleep efficiency and the sleepiness you experienced during the day.

Adapted from: Ouellet, M.-C., Beaulieu-Bonneau, S., Savard, J., & Morin, C. M. (2015). *Insomnie et fatigue après un traumatismecraniocérébral : Manuel d'évaluation et d'intervention.*



## Limiting the time spent in bed to actual sleep time



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### 1 Determine the duration of your sleep window based on the amount of time slept

The sleep window is a period of time in which sleep is permitted, and outside of which sleep should be avoided.

The sleep window is defined by a set bedtime and rising time, and **it must be followed each time, whether during the week or on the weekend.**

The duration of the first sleep window is equal to the average number of hours slept each night over the past week or two weeks. You can estimate this duration based on your habits, or using the sleep diary if you have been using it.

**For example:**

DAYS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
HOURS OF SLEEP	7:00	6:00	5:30	6:00	6:15	5:45	5:30

Average sleep time = (Total hours of sleep / Number of days) = (42 / 7) = 6 hours.

**The first sleep window will be of six hours.**



To avoid significant sleepiness during the day, the sleep window should never be less than five or six hours in duration, even if you generally sleep less than this amount.

### 2 Choose a set bedtime and rising time to define your sleep window.

These times will be set for at least one week: the duration between these two times will be equal to your sleep window duration as defined in Step 1.

For example, for a six-hour sleep window, possible bedtimes and rising times might include the following:

- 11:30 pm to 5:30 am
- 12 am to 6 am
- 12:30 am to 6:30 am

Apply the sleep window each night for one week.  
You can subsequently readjust this window based on your sleep efficiency for the week.

Adapted from: Ouellet, M.-C., Beaulieu-Bonneau, S., Savard, J., & Morin, C. M. (2015). *Insomnie et fatigue après un traumatisme craniocérébral : Manuel d'évaluation et d'intervention.*



## 3 Each week, adjust the sleep window based on your sleep efficiency and the sleepiness you experienced during the day

After maintaining the sleep window for one week, you will need to evaluate it based on the following:

- your sleep efficiency, ideally calculated based on your sleep diary or estimated based on your actual sleep time and time spent in bed over the previous week;
- how you feel during the day (daytime sleepiness).

$$\text{SLEEP EFFICIENCY} = \frac{\text{Total sleep time (in minutes)}}{\text{Time spent in bed at night (in minutes)}} \times 100$$

If your sleep efficiency is **above 85%**  
**OR**  
 if you are very sleepy during the day (much sleepier than before you began this strategy).



**Extend your sleep window** by 15 to 20 minutes for the following week. You may decide to go to bed earlier or to get up later.

If your sleep efficiency is **below 80%**  
**AND**  
 you are not too sleepy during the day.



**Reduce your sleep window** by 15 to 20 minutes for the following week. You may go to bed later or wake up earlier, as long as you reduce the amount of time you spend in bed.

If your sleep efficiency is **between 80% and 85%.**



**Maintain the same sleep window** for another week.

### What to expect?

- The side effect of this strategy of restricting time spent in bed is that you will feel more sleepy during the day. This is normal and temporary. After one or two weeks, you will realize that, in spite of spending less time in bed, you are functioning just as well during the day. Exercise caution if you need to drive or use hazardous machinery.
- Continue to adjust your sleep window each week until you achieve a satisfactory duration of sleep combined with good sleep efficiency (more than 85%). You may need to apply this strategy for several weeks (6 to 10) before achieving this result.

Adapted from: Ouellet, M.-C., Beaulieu-Bonneau, S., Savard, J., & Morin, C. M. (2015). *Insomnie et fatigue après un traumatisme craniocérébral : Manuel d'évaluation et d'intervention.*

# Appendix 7.8

## Re-creating a Time and Place for Sleep



### Re-creating a time and place for sleep



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For good sleepers, the sleep period (nighttime) and sleep environment (the bed and bedroom) are strongly associated with sleep. Insomnia disrupts this association over time, the sleep period and environment that should be associated with sleep become synonymous with wakefulness and insomnia.

### Six strategies for reinforcing associations between the bed and bedroom, nighttime, and sleep:

- 1 Set aside at least one hour before bedtime for rest and relaxation.
- 2 Go to bed only when you feel sleepy.
- 3 If unable to fall asleep or fall back asleep in 15 to 20 minutes, get out of bed, engage in a calm activity, and go back to bed when sleepiness returns.
- 4 Get up at the same time each morning (using an alarm clock), regardless of how much you slept.
- 5 Reserve the bed and the bedroom exclusively for sleep.
- 6 Limit naps during the day.



It is important to apply all six strategies, not only those that seem most relevant or require the least effort.

- If you are already applying some of these strategies, it will be easier to focus on the strategies that you are not applying;
- These strategies may require several weeks of steady application before beneficial effects are experienced.

Adapted from: Ouellet, M.-C., Beaulieu-Bonneau, S., Savard, J., & Morin, C. M. (2015). *Insomnie et fatigue après un traumatisme craniocérébral : Manuel d'évaluation et d'intervention.*



### 1 Set aside at least one hour before bedtime for rest and relaxation.

- In the late evening, avoid sources of cognitive or emotional activation that can delay sleep (e.g., work, video games, physical exercise, and planning out the next day);
- Opt for activities that facilitate the transition between wakefulness, sleepiness, and sleep (e.g., reading, watching TV, listening to music, etc.);
- Reserve a specific time in the early evening (and not the late evening) to address worries or problem-solving;
- Establish a bedtime routine (e.g., taking a bath, brushing your teeth, removing makeup, or getting into your sleepwear).

### 2 Go to bed only when you feel sleepy.

- Going to bed too early, before you feel sleepy, is likely to delay your sleep and create a stronger association between your bed and bedroom and insomnia;
- If you are not sleepy when going to bed, delay your bedtime until you are - you will fall asleep more quickly;
- Be attentive to signs of sleepiness (associated with the transition from wakefulness to sleep): yawning, heavy eyelids, or itchy or watery eyes. Sleepiness is not the same as fatigue. It is possible to be mentally or physically fatigued without wanting to sleep, i.e., without being sleepy.

### 3 If unable to fall asleep or fall back asleep in 15 to 20 minutes, get out of bed, engage in a calm activity, and go back to bed when sleepiness returns.

- Getting up at night and changing rooms has two advantages: 1) breaking the association between the bed, bedroom, and insomnia; and 2) disrupting thought processes that linger when you stay in bed for a long time;
- Avoid looking at the time in order to know when you should get out of bed: if you think that 15 to 20 minutes have gone by or you will not be able to fall asleep soon, simply get out of bed;
- Decide in advance which room you will go in, which activity you will do, and what you will need (e.g., in the winter, leave a blanket in the room);
- Maintain a relatively dim environment or use a shaded lamp that will not shine directly into your eyes;
- Avoid falling asleep in the other room. Go back to bed, but only when you feel sleepy;
- Suggested activities: reading, listening to music, writing, or doing crossword puzzles;
- Activities to avoid: household chores, physical exercise, or electronic devices.

Adapted from: Ouellet, M.-C., Beaulieu-Bonneau, S., Savard, J., & Morin, C. M. (2015). *Insomnie et fatigue après un traumatisme craniocérébral : Manuel d'évaluation et d'intervention.*



### 4 Get up at the same time each morning (using an alarm clock), regardless of how much you slept.

- Use an alarm clock, both during the week and on the weekend, to regulate your sleep cycle and promote sleep on the following night;
- Choose an alarm clock that is loud enough to wake you up, but not too aggressive (e.g., the radio). Put the alarm clock somewhere out of reach, so that you need to get up to turn it off;
- Plan social or family activities early in the morning in order to increase your motivation to get up.

### 5 Reserve the bed and the bedroom exclusively for sleep.

- Avoid the following in your bedroom (during the day and night): reading, watching TV, listening to music or the radio, using a computer or smartphone, eating, working, planning, or worrying. Sexual activities are an exception, since they can lead to a state of relaxation that is conducive to sleep;
- Falling asleep to the sound of the TV or radio (or other music) is especially detrimental: your brain will continue to pay attention to what you are listening to, causing lighter sleep;
- As much as possible, it is important to always sleep in the same room and the same bed (avoid sleeping or dozing off in another bed, a couch, or a hammock);
- If your room is your living space (e.g., in a hospital, rehabilitation centre, or studio apartment), it is important to set aside a specific space for sleep (the bed) and a space for other activities (other than the bed).

### 6 Limit naps during the day.

- Avoid or limit naps in order to avoid adverse consequences on your sleep the following night:  
**Nap time:** the early afternoon is conducive to falling asleep quickly, but a late- afternoon or evening nap can disturb your night of sleep;

**Nap duration:** brief (15 to 30 minutes) naps are more effective than long ones;

**Nap location:** naps should be taken in the same place as sleep at night, i.e., in your bed.

- Find alternatives to naps in order to deal with sleepiness or fatigue during the day: listening to music, doing physical exercise, walking outside, or doing pleasant or social activities.

## List of medications for different persistent symptoms

There are various medications that could help manage your persistent symptoms. The list below includes the different options that your doctor may use to manage your symptoms of concussion or mild traumatic brain injury.

### Post-Traumatic Headache

Depending on the type of headache you have your doctor may prescribe one or more analgesics. For example:

- Acetylsalicylic acid (Aspirin)
- Acetaminophen (Tylenol)
- Ibuprofen (Motrin or Advil)
- Combination analgesics (such as codeine or caffeine)
- Diclofenac (Voltaren)
- “Triptan” medications (such as almotriptan, eletriptan, sumatriptan, rizatriptan, and zolmitriptan)

Your doctor may also prescribe other medications:

- Blood pressure medications (such as nadolol, propranolol, verapamil)
- Epilepsy treatments (such as divalproex, topiramate, gabapentin, and pregabalin)
- Antidepressants (such as amitriptyline, nortriptyline, venlafaxine, and duloxetine)
- Other types of medications (such as Botulinum toxin injections)

### Sleep-Wake Disturbances

Depending on the type of sleep-wake problems you’re having, your doctor may recommend or prescribe one or more of the following medications:

- Magnesium, zinc or melatonin
- Medications to prevent daytime sleepiness (such as modafinil)
- Antidepressants (such as trazodone, amitriptyline, doxepine, and mirtazapine)
- Sleep medications (such as zopiclone)
- Blood pressure medications (such as prazosin)

### Mental Health Disorders

Depending on the type of mental health disorder that you have, your doctor may prescribe one or more of the following medications:

- Selective serotonin reuptake inhibitors (also known as SSRIs, such as sertraline, escitalopram, citalopram, and paroxetine)
- Serotonin norepinephrine reuptake inhibitors (also known as SNRIs, such as venlafaxine and duloxetine)
- Other types of antidepressants (such as mirtazapine, amitriptyline, imipramine, doxepin, trazodone)