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Sleep-Wake Disturbances

What can cause sleep-wake disturbances?

Sleep disturbances are very common after a concussion/mTBI. About half of people with a traumatic brain injury have some form of sleep disturbances. 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 interactions with others. It can also affect your ability to remember, focus, and learn.

Common sleep disturbances after a concussion/mTBI include:

- **Insomnia:** difficulty falling or staying asleep, and/or difficulty getting restful sleep
- **Sleep apnea:** Breathing problems during sleep, such as snoring or breathing that stops and starts
- **Narcolepsy:** A lot of daytime sleepiness and uncontrollable episodes of falling asleep during the daytime
- **Post-traumatic hypersomnia:** Need for excessive amounts of sleep
- **Circadian rhythm sleep disorders:** Difficulty falling asleep at night and staying awake in the daytime. Preferring sleeping in the daytime and staying awake at night

If you think you might have any of these types of sleep disturbance, use a sleep diary for 1 or 2 weeks to find out how much time you are spending sleeping.

How will my sleep disturbance be diagnosed?

Your primary healthcare provider 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 sleep and wake habits; or “sleep hygiene”
- Your exercise and activity routines
- For women, your menstrual cycle



What treatments will my primary healthcare provider prescribe?

Your primary healthcare provider may prescribe different treatments depending on the type of sleep disturbances you have. If you have insomnia your primary healthcare provider may recommend talk therapy or cognitive behavioral therapy.

Evidence on sleep therapies is still being proven in people with post-concussion/mTBI symptoms. If your primary healthcare provider 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 tired in the morning.

Your primary healthcare provider may also suggest the following therapies:

- Melatonin, zinc, or magnesium supplements before bedtime
- Morning light therapy
- Acupuncture
- Mindfulness-based stress therapy

What can I do to improve my sleep?

It is important to have good sleep habits in order to 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:

1. Healthy Habits

- Go to bed and wake up at the same time every day
- Have a bedtime routine like a warm bath and/or light massage before bed

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 primary healthcare provider 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 3:00pm, and keep it shorter than 30 minutes. Try to sleep in a bed.

2. Diet, Exercise, and lifestyle

- Get some natural (outside) light during the day
- Avoid sugar and caffeine 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 primary healthcare provider says you can start to exercise, and you feel able to do so, try to have 30 to 60 minutes of exercise per day
- Avoid exercising too close to bedtime

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, and cell phones. If this is not possible, 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

Key Guideline Recommendations for Healthcare Providers

The following key guideline recommendations for healthcare providers have been included here so you can see what the guideline recommends healthcare providers do in assessing and treating patients after concussion/mTBI.

7.5	<p>It is recommended to treat sleep-wake disturbances in patients with concussion/mTBI. Treatment of sleep disorders may help with:</p> <ul style="list-style-type: none"> • Mood • Anxiety • Pain • Fatigue • Cognitive problems
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Additional Resources

Sleep Hygiene Program

<https://braininjuryguidelines.org/concussion/fileadmin/media/appendices/appendix-7-4.pdf>

Behavioral Recommendations for Optimal Sleep

<https://braininjuryguidelines.org/concussion/fileadmin/media/appendices/appendix-7-5.pdf>

Sleep Diary

<https://braininjuryguidelines.org/concussion/fileadmin/media/appendices/appendix-7-6.pdf>

Limiting the time spent in bed to actual sleep time

<https://braininjuryguidelines.org/concussion/fileadmin/media/appendices/appendix-7-7.pdf>

Re-creating a time and place for sleep

<https://braininjuryguidelines.org/concussion/fileadmin/media/appendices/appendix-7-8.pdf>

Cautionary Note to Users

The content of the *Guideline for Concussion/mTBI & Prolonged Symptoms, 3rd Edition: for Adults over 18 years*, is based on the status of scientific knowledge available at the time of their finalization (2017) as well as on the consensus of the experts who participated in the guideline development.

This guideline has been created to provide recommendations and help with management of concussion/mild traumatic brain injury (mTBI). It is only for management for adults over 18 years of age. This guideline is not intended for use by people who have sustained or are suspected of having sustained a concussion/mTBI for any self-diagnosis or treatment.

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 (prolonged symptoms). Patients may wish to bring their healthcare and other providers' attention to this guideline. It is based on up-to-date, quality research evidence, the expertise of providers and the input of patients.

