Guideline for Concussion/Mild Traumatic Brain Injury and Persistent Symptoms

3rd Edition - for adults, +18 years of age

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.
6) Post Traumatic Headache

Headache is the most common symptom after a concussion/mTBI. Post-traumatic headaches can last for a long time. They can affect your ability to go to school, work, do your daily activities, and interact with others.

People with post-traumatic headaches can have different types of symptoms. Some headaches feel like a migraine, others feel like a tension-type headache. In the majority of people, these headaches stop after a few days or weeks. But sometimes they can last for months or longer.

How does the doctor diagnose my headache?

It is a good idea to keep a headache diary or calendar that you can bring with you when you see your doctor. This will give the doctor more information about your headaches, when you are having them and how bad they are. An example headache diary has been included. This information will help the doctor understand what type of headache you have and how to manage it.

Your doctor may ask several questions to better understand the type of headaches you have:

- How often do you get headaches?
- How long do they last?
- Where do you feel the pain?
• How strong is the pain?
• What type of pain do you feel (such as pressure, throbbing, stabbing)?
• Do you have other symptoms (such as nausea or vomiting)?
• Does anything trigger your headaches?
• Is there anything that helps relieve the pain?
• Did you have previous treatments? Did they improve your symptoms or have side effects?
• Do your headaches affect your ability to function (such as do your work, go to school, attend social events, do hobbies, or get out of bed)?

Your doctor may also do other tests, or make a referral to a specialist to figure out what might be causing your headaches. For example:

• A neurologic exam to find out if there is injury to your brain or nerves.
• A cervical spine and musculoskeletal exam to look for any injury to your jaw, neck, or other parts of your head.
• A vestibular exam to look for any damage to your inner ear.

What can I do to prevent headaches?

There are some things you can do to help prevent headaches:

| Get enough sleep | • Go to bed and wake up at the same times every day.  
• Avoid naps during the day.  
• If you often have difficulty falling or staying asleep,  
• Please read Section 7 on “Sleep-Wake Disturbances”. |

Guidelines for Concussion/mTBI and Persistent Symptoms - Patient Version
| Eat regular meals | - Try not to skip breakfast, lunch or dinner, and eat at regular times.  
| | - Try to have protein at every meal.  
| Stay hydrated | - Drink 4 to 6 glasses of water every day.  
| | - Avoid caffeine in coffee, tea, or soft-drinks, and diet drinks that contain aspartame.  
| | - Keep in mind that if you are a regular caffeine drinker, stopping suddenly could trigger a headache.  
| Avoid stress | - Try relaxation activities to help you deal with stress, such as meditation, yoga, and exercise.  
| | - If you have difficulty managing stress, talk to your doctor.  
| Get regular exercise | - If your doctor says you can start to exercise, go for brisk walks, go swimming, or use an exercise machine every day.  
| | - Start slowly and increase your effort gradually.  
| | - If exercise triggers a headache, reduce your effort or try a different activity.  

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Guidelines for Concussion/mTBI and Persistent Symptoms - Patient Version
How can I manage my headaches without medication?

Here are some things you can do to help manage your headaches:

- Apply a cold or hot pack to your neck or head.
- Stretch and self-massage your head, neck, and shoulders.
- Do breathing exercises.
- Go to a quiet place.
- Lie down.
- Go outside to get fresh air.
- Do visualization or other mindfulness-based exercises (you may need to see someone to learn how to do these).

What medications will my doctor prescribe?

Your doctor may prescribe acute therapy and prophylactic therapy with medications called analgesics. Analgesics are designed to relieve pain.

- **Acute** analgesics can help get rid of a headache, or at least stop it from getting worse.
- **Preventive** (or prophylactic) analgesics are taken before a headache starts. They do not cure headaches, but can reduce their frequency or intensity. They can also make headaches more likely to respond to acute therapy.

Preventive analgesics can take a few weeks to work, so you may need to use them for at least 12 weeks, unless you have side effects that you feel are difficult to tolerate.
Always **follow your doctor’s instructions** on how to take your medication. If you use an analgesic for longer than your doctor recommends, it may trigger a rebound headache. Rebound headaches can come from regular, long-term use of analgesics. The only way to treat a rebound headache is to stop taking the analgesic that caused it.

It is a good idea to use a headache diary or calendar to record your symptoms, the time that you took your medication, and any activities that may have triggered or stopped a headache.

**TOOLS AND RESOURCES**

- Appendix 6.4  Headache Diary
- Appendix 6.6  Self-Regulated Intervention and Lifestyle Strategies
- List of medications for different persistent symptoms
Appendix 6.4

Headache Diary

A headache diary consists of tracking the following information:

<table>
<thead>
<tr>
<th>Date</th>
<th>Time (start/finish)</th>
<th>Intensity rate 1-10 (most severe being 10)</th>
<th>Preceding Symptoms</th>
<th>Triggers</th>
<th>Medication (and dosage)</th>
<th>Relief (complete/ moderate/ none)</th>
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For more information about headache causes and treatments, visit the NHF web site at www.headaches.org or call 888-NHF-5552.
Appendix 6.6

Self-Regulated Intervention and Lifestyle Strategies to Minimize Headache Occurrence

Simple Self-regulated Intervention Strategies*

- Apply a cold or hot back to the neck or head
- Tie something tight around the head
- Stretching and self-massaging the head and/or neck and shoulders
- Perform breathing exercises
- Visualization or other mindfulness-based exercises
- Go to a quiet place
- Lie down
- Go outside to get fresh air

* Note. When relevant, there are a variety of allied-health professionals who can guide individuals to perform appropriate home-based neck and shoulder stretching.

Lifestyle Strategies to Minimize Headache Occurrence

a) Sleep: It is well-known that sleep deprivation or inconsistent sleep-wake cycles can precipitate headaches or preclude improvement. Accordingly, it is important to educate individuals with post-traumatic headache (PTH) on the importance of going to bed at the same time each night and waking up at the same time each night and, if possible, avoiding day-time naps. If insomnia continues to be a significant problem, please refer to section 7 for an approach to the management of insomnia.

b) Regular Meals: It is well-known that skipping or delaying meals can trigger headaches in some people. As such, it is important to ensure that patients with PTH consume breakfast (ideally a high-protein breakfast), lunch and dinner and avoiding delaying or skipping meals.

c) Hydration: It is thought that dehydration can be a trigger for headaches in some susceptible individuals. As such, it is important to maintain good hydration – this means consuming 4-6 drinks per day of water, juice, milk or other non-caffeinated beverages. Regular daily caffeine-consumption (i.e., coffee, soft-drinks) should be avoided as caffeine consumption and withdrawal can precipitate headaches (when an individual does not consume caffeinated beverages regularly, a caffeinated beverage may be helpful to minimize intermittent bad headaches). Diet soft-drinks should be further avoided as, in some, aspartame may trigger headaches.

d) Stress: It is well-known that in many individuals stress, worry, anxiety or anger can be a significant trigger for headaches. These symptoms are particularly common in individuals who have sustained a traumatic brain injury and, as such, can have a major impact on the frequency and severity of PTH. As such, using relaxation strategies, doing activities such as meditation, yoga, and exercise can assist with coping with stress and avoiding stress-induced worsening of headaches. The assistance of an occupational therapist, psychologist, GP-psychotherapist or psychiatrist may be necessary.

e) Exercise: In the initial period after a traumatic brain injury, physical rest is often endorsed. However, as the weeks go by, inactivity is frequently counter-productive and a sedentary lifestyle without any cardiovascular exercise may, in some, perpetuate the headaches. Accordingly, a brisk walk (particularly a morning walk outside), riding a stationary bicycle, walking or jogging on a treadmill or elliptical machine or swimming can be very helpful in headache management. An exercise program should be undertaken as tolerated with gradually increasing duration and intensity. For some, exercise triggers a headache and in these individuals the intensity and/or duration of the exercise should be reduced or an alternative exercise should be trialed.
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, and 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)