

Headaches after Traumatic Brain Injury

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TBI Factsheet

This factsheet provides information on the causes, types, and treatment options for headaches after traumatic brain injury (TBI).

Headache is one of the most common symptoms after traumatic brain injury (often called “post-traumatic headache”). Over 30% of people with moderate to severe TBI report having headaches which continue long after injury. An even larger percentage people with mild TBI complain of headache.



Why are headaches a problem after brain injury?

Headaches after TBI can be long-lasting, coming and going even beyond one year. Headaches can make it hard for you to carry out daily activities or can cause you to have more difficulty thinking and remembering things.

Why do headaches happen after brain injury?

Right after a severe TBI, people may have headaches because of the surgery on their skulls, a skull fracture or because they have small collections of blood or fluid inside their skulls.

Headaches can also occur soon after mild to moderate injury or, most commonly in the case of severe TBI, after the initial healing has taken place. These headaches can be caused by a variety of conditions, including a change in the brain caused by the injury, neck and skull injuries that have not yet fully healed, tension and stress, or side effects from medication.

What are some typical kinds of headaches after TBI?

Migraine headaches

These headaches happen because an area of the brain becomes hypersensitive and can trigger a pain signal that spreads out to other parts of the brain (like the ripples that spread out after you drop a pebble in water). Migraine headaches typically have the following features:

- Dull, throbbing sensation, usually on one side of the head.
- Nausea or vomiting.
- Light and sound sensitivity.
- Pain level rated as moderate to severe.
- A “warning” signal that a migraine is coming on, such as seeing spots or bright lights. This is called an “aura.”



The Traumatic Brain Injury Model System is sponsored by the National Institute of Disability, Independent Living, and Rehabilitation Research, U.S. Department of Health and Human Services’ Administration for Community Living. (See <http://www.msktc.org/tbi/model-system-centers> for more information).



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Tension-type headaches

These headaches are associated with muscle tension or stress. They usually have the following features:

- Tight, squeezing sensation, often around the entire head or on both sides.
- Pain level rated as mild to moderate.
- Occur later in the day.

Cervicogenic headaches

This type of headache can occur when there has been some injury to the muscles and soft tissues in the neck and the back of the head. Many nerves that are located in the tissues and bones of the neck have branches that travel to the skull and scalp and can result in head pain. This type of headache usually has these features:

- Often start in the neck, shoulders and back of the head, and sometimes travel over the top of the head.
- Neck movement or positioning can make the pain worse.
- These headaches are not usually associated with nausea and can range from mild to severe.

Rebound or medication overuse headaches

Sometimes the very medicines used to treat headaches can actually cause headaches. If some over the counter pain medications for headaches or certain prescribed medications are taken every day, they can actually lead to worsening headaches overall. Speak with your provider about which medications can cause overuse headaches.

Rebound headaches can occur if a person suddenly decreases the amount of caffeine they use. For example, if a person normally drinks a lot of coffee, tea or energy drinks and then doesn't get their usual amount, they may get a headache. In addition, missing one or two doses of certain medications can result in a headache.

Other facts about headaches

Although there are many other types of headaches, these are the most frequent. It is not unusual for someone to have more than one type of headache or for pre-existing headaches to get worse after brain injury. For certain headaches like migraine, a family history is common. It is possible for certain problems associated with brain injury to trigger or worsen headaches (like vision problems or sleep apnea).

Should I worry about having a headache?

Most headaches are not dangerous. In the first few days after a concussion or head injury, a person should see a health care professional experienced in treating persons with brain injuries IF the following occurs:

- Headaches get worse
- There is nausea and/or vomiting with a headache
- Arm or leg weakness or problems speaking develop along with a headache
- Increasing sleepiness occurs with headache



Do I need special tests to diagnose a headache?

In the first few days after a head injury, doctors will often order a CT scan of the brain to make sure there is no bleeding in the head. After that, a brain scan or other test is rarely needed in order to diagnose a headache accurately.

Usually, the health care provider will rely on history and symptoms to sort out what kind of headache a person is having and how to treat it.



What can be used to treat a post-traumatic headache?

This will depend on each individual case. It's important to discuss your headaches with your doctor and to keep track of headaches and your response to treatment. Many people use a headache diary to help them do this.

Lifestyle changes to help prevent headaches

The first steps in treating any type of headache don't involve medications or other therapies. Many times, lifestyle factors can trigger headaches or make headaches worse. Making simple changes can often make a big difference in whether or not headaches occur. Try to:

- Get enough sleep.
- Get daily exercise. Aerobic exercise such as walking and good stretching often help prevent headaches by improving sleep and decreasing triggers such as poor posture. If a headache is worsened by any particular exercise, check with your health care provider.
- Avoid caffeine.
- Avoid certain foods that may trigger a headache, like red wine, monosodium glutamate (MSG, a common food additive) or certain cheeses.
- Avoid taking pain medicines on a daily basis unless your health care provider prescribes it.

Common types of treatment for occasional headaches include:

- Over-the-counter pain medicines like acetaminophen (Tylenol®) or ibuprofen.
- Prescription medicines for migraine headache like sumatriptan (Imitrex®).
- Relaxation therapy/meditation.
- Stretching and self-massage.
 - Therapeutic massage.
 - Heat or ice packs.



Treatments for recurrent headaches that happen more than twice a week

Headaches that occur frequently may require treatment such as therapy, a procedure, or a prescription from your health care provider. The following may help:



- Acupuncture.
- Therapeutic massage.
- Physical therapy for the neck and upper back.
- Local injections (numbing medication or steroids) to muscles, nerves, or joints of the cervical spine.
- Nerve stimulators such as a transcutaneous electrical nerve stimulation device (known as Cefaly device)
- Cognitive Behavioral Therapy.

These medications may be used to help prevent or decrease headaches following TBI:

- Tricyclic antidepressants (like amitriptyline, also called Elavil®).
- Antiseizure medicines (like topiramate, also called Topamax® or Trokendi®).
- Certain blood pressure medication called beta-blockers (like propranolol).
- Botulinum toxin (Botox®) injections.
- CGRP inhibitors (calcitonin gene-related peptide blockers) such as erenumab (Aimovig®) or galcanezumab (Embality®).

While headaches after TBI can make it hard to manage activities, fortunately there are many treatment options that exist to prevent headaches from becoming chronic. Speak with your health care provider about an effective treatment strategy.



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