

### **Post-Traumatic Headache**

Headaches are one of the most common persisting symptoms following a concussion. Post-traumatic headaches are defined as the onset of a headache within 7 days following concussion and are either acute (first 3-months of headache onset) or chronic (headache persists beyond 3-months). They are a secondary headache subtype with variable clinical features characteristic of different primary headache disorders (e.g., tension-type and migraine headaches). Diagnosis is based on the [International Classification of Headache Disorders 3rd edition](#).

Assessment:

- Detailed history including any history of headaches and a family history of headaches or migraines.
  - Having the patient complete headache diaries such as the [Canadian Migraine Tracker](#) is advised to aid diagnosis and intervention.
  - This assessment, diagnosis and management for post-traumatic headaches may take several visits and may involve the multidisciplinary team.

Treatment:

***Treatment should follow the primary headache category of best fit based on clinical presentation.***

Headache Type	History	Physical Exam
<b>Tension-type Headaches</b> <sup>12-13</sup> <a href="#">Primary: ICHD-3 Tension-type headache</a>	<ul style="list-style-type: none"> <li>• Typically bilateral, pressing or tightening in quality and mild to moderate intensity</li> <li>• At least 10 episodes of headache for 1-14 days on average occurring for &gt;3-months</li> <li>• Lasting from 30 mins to 7 days</li> <li>• <u>Not</u> aggravated by routine physical activity</li> </ul>	<ul style="list-style-type: none"> <li>• Tenderness to palpation over the pericranial muscles, cervical paraspinals and trapezius muscles</li> <li>• Normal neurologic exam</li> </ul>
<b>Cervicogenic headaches</b> <a href="#">Primary: ICHD-3 Cervicogenic Headaches</a>	<ul style="list-style-type: none"> <li>• Headache associated with neck pain and neck movements</li> <li>• Often unilateral headache</li> <li>• Pain starting at the neck and spreading to the oculofrontotemporal areas</li> </ul>	<ul style="list-style-type: none"> <li>• Pain on palpation over cervical paraspinals</li> <li>• +/- limited Cervical range of motion</li> <li>• <a href="#">Craniocervical flexion test</a></li> <li>• Symptomatic Joint Dysfunction</li> <li>• Cervical <a href="#">Flexion rotation test</a></li> </ul>
<b>Occipital Neuralgia</b> <a href="#">Primary: ICHD-3 Occipital Neuralgia</a>	<ul style="list-style-type: none"> <li>• Headache starts posterior aspect of the head and refers around and over the top of head with associated sharp, shooting pain and neuropathic symptoms.</li> <li>• Unilateral or bilateral, recurring paroxysmal attacks which last from a few seconds to minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Pain with palpation over the lesser and greater occipital nerves</li> </ul>
<b>Temporomandibular Joint Pain</b> <a href="#">Primary: ICHD-3 Headache attributed to temporomandibular disorder</a>	<ul style="list-style-type: none"> <li>• Pain in jaw, neck muscles, face and/or shoulders,</li> <li>• Stiffness in the jaw,</li> <li>• Jaw clicking,</li> <li>• Can be associated with earaches, tooth pain, or facial allodynia</li> </ul>	<ul style="list-style-type: none"> <li>• Pain with palpation over the TMJ joints with associated clicking, pain with clenching and/or full opening, limited ROM, mandible deviation on opening</li> </ul>

<p><b>Medication Overuse headache</b>  <a href="#">Primary: ICHD-3 Medication Overuse Headache</a></p>	<ul style="list-style-type: none"> <li>• Global mild headache and patient is taking as needed analgesics (acetaminophen, NSAIDs, etc.) &gt;10/28 days for more than 3-months</li> </ul>	<p>Normal</p>
<p><b>Post traumatic headache with migrainous features</b>  <a href="#">Primary: ICHD-3 Migraine</a></p>	<ul style="list-style-type: none"> <li>• Headache often unilateral and associated with:                             <ul style="list-style-type: none"> <li>○ Photophobia</li> <li>○ Phonophobia</li> <li>○ Nausea and vomiting</li> <li>○ triggered by stress, weather changes, light exertion</li> </ul> </li> <li>• Attacks can last between 4-72 hours when untreated</li> <li>• Pulsating in quality</li> </ul>	<p>Normal</p> <p>See <a href="#">Specialist Link Headache and Migraine pathway</a> for management</p>

### **Non-pharmacological Treatment of Non-Migrainous Headache**

Self-regulated strategies can be used in the treatment of all types of non-migrainous headaches. These include:

- Cold or hot to the back of the neck or head
- Stretching and self-massaging the head and/or neck and shoulders
- Breathing exercises
- Visualization or mindfulness
- Finding a quiet place
- Lying down
- Going outside to get fresh air

Lifestyle strategies that are beneficial for all types of non-migrainous headaches include:

- Education on sleep hygiene
- Regular meals (avoid skipping)
- Maintaining good hydration (4-6 drinks per day of water, juice etc.) avoiding caffeinated or diet soft-drinks
- Relaxation activities such as meditation, visualization, and yoga
- Exercise, encourage to meet [Canadian physical activity guidelines](#)

Additional non-pharmacological strategies specific to different headache types are shown in the table below.

Headache Type	Strategy/Treatment
<b>Tension-Type Headaches</b>	<ul style="list-style-type: none"> <li>• Avoid alcohol and smoking</li> </ul>
<b>Cervicogenic headaches</b>	<ul style="list-style-type: none"> <li>• TENS</li> <li>• Cervicovestibular rehabilitation</li> <li>• Physiotherapy (deep neck flexor exercises, sensorimotor training, strengthening exercises, or cervical spine manipulation where indicated)</li> </ul>
<b>Occipital Neuralgia</b>	<ul style="list-style-type: none"> <li>• Heat pads</li> <li>• Massage therapy</li> </ul>

<b>Temporomandibular Joint Pain</b>	<ul style="list-style-type: none"> <li>• Mouth guards</li> <li>• Physical therapy for TMJ</li> <li>• Exercises to stretch and strengthen the jaw muscles</li> <li>• Trigger point injections</li> <li>• Consider referral to orthodontist</li> </ul>
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For non-pharmacological treatment of post traumatic headache with migrainous features, [See Specialist Link Headache and Migraine pathway.](#)

### Pharmacological Treatment of Non-Migrainous Headache

Treatment	Headache Type	Name	Usual dose
<b>NSAIDs</b>	<b>All headache types</b>	Ibuprofen	400-600mg, MAX: 3200mg daily
		Naproxen	Initial dose: 750mg daily, Titration: additional 250-500mg, MAX: 1250 mg daily
		Diclofenac	50mg, MAX: 100mg
<i>Limit to no more than 15 days/month (Risk of medication overuse headaches)</i>			
<b>Over the counter medication</b>	<b>All headache types</b> <i>Limit to no more than 15 days/month (Risk of medication overuse headaches)</i>	Acetaminophen	<u>Regular strength</u> : 650mg every 4-6 hours as needed, MAX: 3250mg daily <u>Extra strength</u> : 1000mg every 6 hours as needed, MAX: 300mg daily
		Acetaminophen/ aspirin/ Caffeine	MAX: 2 tablets once daily
		Aspirin	325-650mg every 4-6 hours as needed, MAX: 4000mg daily
<i>Limit to no more than 10 days/month (Risk of medication overuse headaches)</i>			
<b>Prophylactic medication</b>	<b>Tension-type Headache, Occipital Neuralgia, Cervicogenic headache, and Migraine</b> <sup>12-13</sup> See <a href="#">Specialist Link Headache and Migraine pathway</a> <i>Consider in medication overuse headache to limit "as needed" medication to &lt;10 x per month</i>	Amitriptyline	Initial: 10-25mg at bedtime, Titration: Increase weekly increments of 10-25mg, MAX: 80 mg daily (evidence in pain)
		Venlafaxine XR	Optimal dose 75-150mg po OD
<b>Anti-convulsant medication</b>	<b>Occipital Neuralgia</b>	Gabapentin	Initial: 100-300mg at bedtime, Titration: 100-300mg every 5 days as necessary/tolerated on a TID schedule, Max: 2400mg daily
		Topiramate	Initial: 25mg OD, Titration dose: increase weekly by 25mg daily, MAX: 100mg daily

		Valproate	Typical dose: once daily or delayed (2 divided doses daily) 500-1500mg/ day MAX: 1500mg/day
		Divalproex sodium products	<u>Extended release:</u> Initial: 500mg OD, Titrate: increase after 7 days to 100mg daily, Max: 100mg daily <u>Immediate Release:</u> Initial: 250mg twice daily, Titration: increase by 250mg per day every week, Max: 1000mg daily
<b>Botulinum toxin injections</b>	<b>Occipital Neuralgia</b>	If the patient fails two or more of oral prophylactic headache medications, then botulinum toxin injections may be indicated. A referral to a headache specialist could be considered.  <i>See <u>Referral Sources</u> section</i>	

If headaches are unresponsive to conventional treatments and remain inadequately controlled, consider calling Chronic Pain Centre (CPC) or Specialist Link (Neurology) for advice. Alternatively, make a referral to a neurologist, headache specialist or interdisciplinary concussion clinic. Non-AHS access to Neurology can be through the following Centres: Alberta Neurologic Centre, Peak Medical, Calgary Neurology Clinic. Consider reviewing the [Specialist Link Headache and Migraine pathway](#).