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
Tension-type Headaches[12-13] Primary: ICHD-3 Tension-type headache	• Typically bilateral, pressing or tightening in quality and mild to moderate intensity • At least 10 episodes of headache for 1-14 days on average occurring for >3-months • Lasting from 30 mins to 7 days • Not aggravated by routine physical activity	• Tenderness to palpation over the pericranial muscles, cervical paraspinals and trapezius muscles • Normal neurologic exam
Cervicogenic headaches Primary: ICHD-3 Cervicogenic Headaches	• Headache associated with neck pain and neck movements • Often unilateral headache • Pain starting at the neck and spreading to the oculofrontotemporal areas	• Pain on palpation over cervical paraspinals • +/- limited Cervical range of motion • Craniocervical flexion test • Symptomatic Joint Dysfunction • Cervical Flexion rotation test
Occipital Neuralgia Primary: ICHD-3 Occipital Neuralgia	• Headache starts posterior aspect of the head and refers around and over the top of head with associated sharp, shooting pain and neuropathic symptoms. • Unilateral or bilateral, recurring paroxysmal attacks which last from a few seconds to minutes	• Pain with palpation over the lesser and greater occipital nerves
Temporomandibular Joint Pain Primary: ICHD-3 Headache attributed to temporomandibular disorder	• Pain in jaw, neck muscles, face and/or shoulders, • Stiffness in the jaw, • Jaw clicking, • Can be associated with earaches, tooth pain, or facial allodynia	• Pain with palpation over the TMJ joints with associated clicking, pain with clenching and/or full opening, limited ROM, mandible deviation on opening

Medication Overuse headache Primary: ICHD-3 Medication Overuse Headache	• Global mild headache and patient is taking as needed analgesics (acetaminophen, NSAIDs, etc.) >10/28 days for more than 3-months	Normal
Post traumatic headache with migrainous features Primary: ICHD-3 Migraine	• Headache often unilateral and associated with: ○ Photophobia ○ Phonophobia ○ Nausea and vomiting ○ triggered by stress, weather changes, light exertion • Attacks can last between 4-72 hours when untreated • Pulsating in quality	Normal See *Specialist Link Headache and Migraine pathway* for management

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
Tension-Type Headaches	• Avoid alcohol and smoking
Cervicogenic headaches	• TENS • Cervicovestibular rehabilitation • Physiotherapy (deep neck flexor exercises, sensorimotor training, strengthening exercises, or cervical spine manipulation where indicated)
Occipital Neuralgia	• Heat pads • Massage therapy

Temporomandibular Joint Pain	• Mouth guards • Physical therapy for TMJ • Exercises to stretch and strengthen the jaw muscles • Trigger point injections • Consider referral to orthodontist

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
NSAIDs	**All headache types**	Ibuprofen	400-600mg, MAX: 3200mg daily
		Naproxen	Initial dose: 750mg daily, Titration: additional 250-500mg, MAX: 1250 mg daily
		Diclofenac	50mg, MAX: 100mg
Limit to no more than 15 days/month (Risk of medication overuse headaches)			
Over the counter medication	**All headache types** *Limit to no more than 15 days/month (Risk of medication overuse headaches)*	Acetaminophen	Regular strength: 650mg every 4-6 hours as needed, MAX: 3250mg daily Extra strength: 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
Limit to no more than 10 days/month (Risk of medication overuse headaches)			
Prophylactic medication	**Tension-type Headache, Occipital Neuralgia, Cervicogenic headache, and Migraine**[12-13] See Specialist Link Headache and Migraine pathway *Consider in medication overuse headache to limit "as needed" medication to <10 x per month*	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
Anti-convulsant medication	**Occipital Neuralgia**	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	Extended release: Initial: 500mg OD, Titrate: increase after 7 days to 100mg daily, Max: 100mg daily Immediate Release: Initial: 250mg twice daily, Titration: increase by 250mg per day every week, Max: 1000mg daily
Botulinum toxin injections	**Occipital Neuralgia**	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. *See Referral Sources section*	

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.*