Assessment and Management of Headache Following Concussion/
Mild Traumatic Brain Injury: Guidance for the Primary Care Manager

Introduction

Post-traumatic headache is one of the most common and persistent symptoms of TBI.1–4 Individuals with mTBI have a higher incidence, longer duration, and higher intensity of PTH compared to those with moderate or severe TBI.5,6

According to the International Classification of Headache Disorders 3rd edition, PTH is classified as a secondary headache disorder attributed to traumatic injury to the head, that develops within 7 days of a head injury, or a pre-existing primary headache disorder that becomes chronic or significantly worse within 7 days of a head injury. PTH is classified as acute if the headache resolves within 3 months or persistent if the headache lasts longer.7,8

The most common PTH types are migraine and tension-type headache.5,8 It is likely that mechanisms of PTH overlap with migraine and primary TTH, but trauma clouds the clinical and pathophysiological picture. PTH is likely a multifactorial process that evolves over time from the acute to the chronic phase.9

This clinical recommendation is designed to provide primary care managers with evidence-based best practices for the assessment and management of service members and veterans with PTH. Training on previous iterations of this clinical recommendation has been shown to reduce the number of referrals to a higher level of care, improve follow-up after initial treatment, and increase patient compliance with treatment recommendations.10

This is an interactive document. Please click the links in each box for detailed instructions and additional resources.
Initial Evaluation and Management of PTH

Provide Acute Concussion Management
- Complete and document MACE 2 in electronic health record following a potentially concussive event.
- Consider indications for neuroimaging or consult higher level of care.
- Ensure compliance with and manage acute headaches according to Progressive Return to Activity guidance.

For Persistent Headaches
- Consider specialty referral per PRA guidance.
- Advise patient to begin headache diary.
- Assess patient history (including co-occurring conditions).
- Conduct focused physical examination including neurological examination.
- Provide patient with Managing Headaches Following mTBI Fact Sheet.

Identify and Treat Specific Headache Type

Migraine
- Migraine Diagnosis and Clinical Features
- Migraine Treatment

Tension-type, including cervicogenic pain
- TTH Diagnosis and Clinical Features
- TTH Treatment

Other post-traumatic headache subtypes
- Other PTH Subtypes Diagnosis, Clinical Features, and Treatment

Assess for Medication Overuse Headache

- Specialty referral
- Is treatment effective?
- Continue treatment and reassess as needed
Co-Occurring Conditions

Individuals with acute or persistent PTH often have a constellation of physical, psychological, and cognitive post-TBI symptoms. A thorough patient history should be conducted, including medication review, headache history (headache diary), and assessment for co-occurring conditions. Co-occurring conditions specific to PTH that can contribute to or exacerbate headache include sleep disturbances, anxiety, depression, PTSD, and oculomotor and vestibular dysfunction. Anxiety and depression can also increase the risk of MOH, a headache that develops due to regular overuse of abortive medications. Headache is prevalent following mTBI and medication overuse can confound the clinical presentation and treatment of headache (e.g., worsens headache, blunts efficacy of preventive medications, transforms episodic into chronic headache).11–17

Timely recognition and appropriate management of these co-occurring conditions can help prevent chronic headache, treatment resistance, delayed return to duty, and increased disability.

<table>
<thead>
<tr>
<th>Co-Occurring Condition</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep disturbances (e.g., insomnia, obstructive sleep apnea)</td>
<td>TBI CoE Management of Sleep Disturbances Following Concussion/mTBI: Guidance for Primary Care Management</td>
</tr>
<tr>
<td>Behavioral health (e.g., anxiety, depression, PTSD)</td>
<td>Psychological Health Center of Excellence Clinician Resources</td>
</tr>
<tr>
<td>Oculomotor or vestibular dysfunction</td>
<td>TBI CoE Assessment and Management of Dizziness and Visual Disturbances Following Concussion/mTBI: Guidance for the Primary Care Manager</td>
</tr>
<tr>
<td>Medication overuse headache</td>
<td>MOH table</td>
</tr>
</tbody>
</table>
### MIGRAINE AND TTH DIAGNOSIS & CLINICAL FEATURES

<table>
<thead>
<tr>
<th>Diagnostic Criteria</th>
<th>Migraine (with or without aura)</th>
<th>TTH (including cervicogenic pain)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICHD-3 criteria for Migraine</td>
<td></td>
<td><a href="#">ICHD-3 Criteria for TTH</a></td>
</tr>
<tr>
<td>ICHD-3 Criteria for Cervicogenic Headache</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Pain Intensity</th>
<th>Often severe or debilitating</th>
<th>Usually mild to moderate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Character</td>
<td>Throbbing or pulsatile, can also be sharp, stabbing, or electric-like</td>
<td>Dull, aching, or band-like pressure, Sharp pain may be present but is not predominant.</td>
</tr>
<tr>
<td>Duration</td>
<td>4–72 hours</td>
<td>Usually less than 4 hours, but can range from 30 minutes to 7 days</td>
</tr>
<tr>
<td>Location</td>
<td>Often unilateral and may vary in location among episodes</td>
<td>Typically bilateral frontal, retro-orbital, temporal, cervical, occipital, or holocephalic</td>
</tr>
<tr>
<td>Phono- or Photophobia</td>
<td>One or both usually present</td>
<td>One but not both may be present</td>
</tr>
<tr>
<td>Nausea or Vomiting</td>
<td>Usually present</td>
<td>Not present</td>
</tr>
<tr>
<td>Routine Physical Activity</td>
<td>Aggravates symptoms</td>
<td>Does not aggravate symptoms</td>
</tr>
<tr>
<td>e.g., walking, climbing stairs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation Findings</td>
<td>Localized muscle tenderness is not typical, but muscle tenderness may be present with long duration headaches.</td>
<td>Increased pericranial muscle tenderness is the most pronounced finding in TTH. The number of myofascial trigger points are considerably increased in patients with TTH. Cervical exam may reveal decreased ROM, palpable tenderness, or contraction of cervical or pericranial muscles.</td>
</tr>
<tr>
<td>Additional Features</td>
<td>Migraine Prodrome: Symptoms may include increased yawning, euphoria, depression, irritability, food cravings, constipation, or neck stiffness. As many as 77% of patients may experience prodromal symptoms that appear 24–48 hours prior to the onset of headache.</td>
<td>Migraine and TTH may be considered related conditions with shared environmental and lifestyle factors. Cervicogenic headache should be considered if headache is unilateral or asymmetrical and mechanism of injury is consistent with whiplash or cervical involvement.</td>
</tr>
</tbody>
</table>

Migraine Aura: Focal neurological symptoms (e.g., visual, auditory, or somatosensory symptoms) that develop gradually and may last for up to an hour preceding or during headache attacks. Auras occur in approximately 25% of patients.
## MIGRAINE HEADACHE TREATMENT

*ICD-10 Code: G43.001–G43.919*

### Non-Pharmacologic Treatment Considerations
- Provide patient with:  
  - Managing Headaches Following mTBI Fact Sheet  
  - Sleep Following mTBI Fact Sheet  
- Consider Prevention of MOH and provide patient with MOH Fact Sheet  
- Emphasize the importance of activity modification to avoid symptom onset threshold.  
- Avoid headache triggers (e.g., dietary and environmental modifications per review of headache diary).

- Aerobic exercise, progressive strength training  
- Progressive muscle relaxation  
- Consider referral for:  
  - Acupuncture (e.g., battlefield acupuncture)  
  - Neuromodulation (e.g., transcranial magnetic stimulation)  
  - Behavioral health (e.g., biofeedback, CBT)  
  - Physical therapy

### Pharmacologic Treatment Considerations

#### Abortive Treatment: Limit Use To Avoid MOH

<table>
<thead>
<tr>
<th>MILD TO MODERATE</th>
<th>MODERATE TO SEVERE</th>
</tr>
</thead>
</table>
| Ibuprofen: 400–800mg Q6H prn up to 2.4g/day  
Naproxen sodium (IR): 500–750mg Q12H prn up to 1g/day  
Acetaminophen: 500–1000mg Q4–6H prn up to 3g/day  
Aspirin: 500–1000mg Q4–6H prn up to 4g/day  
Combination analgesic/caffeine compounds: APAP 250mg/ASA 250mg/caffeine 65mg: 2 tablets once Q24H |
| Sumatriptan  
PO: 50–100mg at onset, may repeat after 2 hours, up to 200mg/day  
SubQ: 6mg at onset, may repeat after 1 hour, up to 12mg/day  
Intranasal (soln): 20mg at onset, may repeat after 2 hours, up to 40mg/day |

| Zolmitriptan  
PO/ODT: 2.5–5mg at onset, may repeat after 2 hours, up to 10mg/day  
Intranasal: 2.5–5mg at onset, may repeat after 2 hours, up to 10mg/day |

| Rizatriptan  
PO/ODT: 5–10mg at onset, may repeat after 2 hours, up to 20mg/day |

- Ketorolac  
IM: 30–60mg once

### Additional Information
- Administer early in the course of an attack.  
- A large initial dose may confer greater benefit than multiple smaller doses.  
- Use alternative route of administration (e.g., SubQ, intranasal) and antiemetics if concurrent nausea and vomiting.  
- Oral agents can also be ineffective due to poor absorption as a result of migraine-induced gastric stasis.  
- Alternative (typically prescribed by Neurology):  
  - CGRP antagonists (e.g., rimegepant, ubrogepant). Consider use if triptans are contraindicated (e.g., prior heart attack or stroke), poorly tolerated, or inadequate response to ≥ 2 triptans.  
  - Greater occipital nerve blocks have been shown to reduce headache intensity and frequency in migraines in patients who are refractory or have contraindications to standard medical treatments.
### Preventive Treatment (See Treatment Efficacy Criteria for preventive treatment indications)

<table>
<thead>
<tr>
<th>Medication or Supplement (Level of Evidence)</th>
<th>Consider if</th>
<th>Caution if</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propranolol*: 10–40mg QD in 1–4 divided doses (depending on IR or ER formulation), titrate up gradually to 40–240mg/day in 1–4 divided doses (A)</td>
<td>Anxiety, Hypertension</td>
<td>Depression, Dizziness, Exercise intolerance, Fatigue, Bradycardia, Hypotension, Sexual dysfunction</td>
</tr>
<tr>
<td>Topiramate: 25mg QD, titrate up in ≥ 1-week intervals in 25–50mg increments, up to 100–200mg/day in 1–2 divided doses (A)</td>
<td>Chronic migraine, MOH, Exercise intolerance, Frequent migraine aura, Obesity</td>
<td>Cognitive dysfunction, Anxiety or depression, Fatigue, Sensitive to side effects, Taking hormonal contraceptives</td>
</tr>
<tr>
<td>Amitriptyline*: 10–12.5mg QHS, titrate up every 2–3 weeks in 10–12.5mg increments, up to 50–100mg QHS (B)</td>
<td>Insomnia, Vestibular migraine, Comorbid pain</td>
<td>Cognitive dysfunction, Exercise intolerance, Fatigue, Sexual dysfunction †, Suicide risk, Sensitive to side effects</td>
</tr>
<tr>
<td>Nortriptyline*: 10–25mg QHS, titrate up in ≥ 1 week intervals in 10–25mg increments, up to 50–100mg QHS</td>
<td>Amitriptyline is indicated but anticholinergic effects or sedation limit use</td>
<td></td>
</tr>
<tr>
<td>Venlafaxine ER*: 37.5mg QD, titrate up weekly in 37.5mg increments, up to 75–150mg/day (B)</td>
<td>Anxiety or depression, Cognitive dysfunction, Exercise intolerance, Fatigue, PTSD, Vestibular migraine</td>
<td>Insomnia, Sexual dysfunction †, Suicide risk, Hypertension (&gt; 225mg/day)</td>
</tr>
<tr>
<td>Duloxetine*: 30mg QD, titrate up to 60mg QD after 1 week</td>
<td>Anxiety or depression, Cognitive dysfunction, Exercise intolerance, Fatigue, Comorbid pain</td>
<td>Insomnia, Sexual dysfunction †, Suicide risk</td>
</tr>
<tr>
<td>OnabotulinumtoxinA:</td>
<td>Chronic migraine, MOH, Polypharmacy, Mixed PTH phenotype (chronic migraine and TTH), Poor tolerance to PO preventives</td>
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</tr>
<tr>
<td>CGRP Antagonists (e.g., atogepant, rimegepant, erenumab, fremanezumab)</td>
<td>Contraindications, inability to tolerate, or inadequate response to an 8-week trial of two Level (A) or (B) treatments at a therapeutic dose, Chronic migraine, MOH, Polypharmacy</td>
<td>Hypertension (with erenumab), Recent cardiovascular or cerebrovascular ischemic events (theoretical risk)</td>
</tr>
</tbody>
</table>

**ICD-10 Code:** G43.001–G43.919
**MIGRAINE HEADACHE TREATMENT (CONTINUED)**

<table>
<thead>
<tr>
<th>Preventive Treatment (See <a href="#">Treatment Efficacy Criteria</a> for preventive treatment indications)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medication or Supplement (Level of Evidence):</strong> Candesartan: 4–8mg QD, titrate up weekly, up to 16mg/day (C)</td>
</tr>
<tr>
<td><strong>Consider if:</strong> Cognitive dysfunction</td>
</tr>
<tr>
<td>Hypertension</td>
</tr>
<tr>
<td>Sensitive to side effects</td>
</tr>
<tr>
<td><strong>Caution if:</strong> Hypotension</td>
</tr>
<tr>
<td>Dizziness</td>
</tr>
<tr>
<td>Magnesium oxide: 400mg QD (equivalent to 240mg elemental magnesium), titrate up to 400mg BID (B)</td>
</tr>
<tr>
<td>Riboflavin (Vitamin B2): 400mg QD (B)</td>
</tr>
<tr>
<td>Coenzyme Q10: 100mg TID (C)</td>
</tr>
<tr>
<td>Adjunct to pharmacotherapy desired</td>
</tr>
<tr>
<td>Patient preference for supplements</td>
</tr>
<tr>
<td>Sensitive to side effects</td>
</tr>
</tbody>
</table>

* Beta blockers and antidepressants may affect sleep. Refer to [TBICoE's sleep disturbances clinical recommendation](#) for more information.

† Antidepressants can cause varying levels of sexual dysfunction (venlafaxine > TCAs > duloxetine).

(A),(B),(C) indicates level of evidence per the 2012 American Academy of Neurology/American Headache Society guidelines.³⁶
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TENSION-TYPE AND CERVICOGENIC HEADACHE TREATMENT

ICD-10 Code: **TTH**: G44.201–G44.229, **Cervicogenic**: G44.86

### Non-Pharmacologic Treatment Considerations

#### TTH

- Provide patient with:
  - Managing Headaches Following mTBI Fact Sheet
  - Sleep Following mTBI Fact Sheet
- Consider Prevention of MOH and provide patient with MOH Fact Sheet
- Emphasize the importance of activity modification to avoid symptom onset threshold.
- Avoid headache triggers (e.g., dietary and environmental modifications per review of headache diary)
- Aerobic exercise, progressive strength training, stretching, yoga
- Progressive muscle relaxation
- Consider referral for:
  - Acupuncture (e.g., battlefield acupuncture)
  - Behavioral Health (e.g., biofeedback, relaxation training, CBT)
  - Physical Therapy (e.g., dry needling)
  - Osteopathic Manipulative Treatment

#### Cervicogenic

- Provide patient with Managing Neck Pain Following mTBI Fact Sheet.
- Emphasize the importance of activity modification to avoid symptom onset threshold.
- Refer to Physical Therapy for evaluation and treatment of cervicogenic headache.
- Refer to Neurology or Pain Management for cervicogenic headache refractory to Physical Therapy.
- Refer to Pain Management for severe neck pain or chronic whiplash injury.

### Pharmacologic Treatment Considerations

#### Abortive Treatment: Limit Use To Avoid MOH

<table>
<thead>
<tr>
<th>Medication or Supplement (Level of Evidence)</th>
<th>Consider if:</th>
<th>Caution if:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptyline†: 10–12.5mg QHS, titrate up every 2–3 weeks in 10–12.5mg increments, up to 50–100mg QHS (A)</td>
<td>Insomnia, Comorbid pain</td>
<td>Cognitive dysfunction, Exercise intolerance, Fatigue, Sexual dysfunction†, Suicide risk, Sensitive to side effects</td>
</tr>
<tr>
<td>Nortriptyline*: 10–25mg QHS, titrate up in ≥ 1 week intervals in 10–25mg increments, up to 50–100mg QHS</td>
<td>Amitriptyline is indicated but anticholinergic effects or sedation limit use</td>
<td></td>
</tr>
<tr>
<td>Mirtazepine‡: 15mg QHS, may titrate up to 30mg QHS after 1 week (B)</td>
<td>Depression, Insomnia</td>
<td>Fatigue, Obesity, Sexual dysfunction†, Suicide risk</td>
</tr>
<tr>
<td>Venlafaxine ER*: 37.5mg QD, titrate up weekly in 37.5mg increments, up to 75–150mg QD (B)</td>
<td>Anxiety or depression, Cognitive dysfunction, Exercise intolerance, Fatigue, PTSD</td>
<td>Insomnia, Sexual dysfunction†, Suicide risk, Hypertension (doses &gt; 225mg/day)</td>
</tr>
</tbody>
</table>

* Combination therapy with TCAs and stress management may be superior to either therapy alone.
† Antidepressants may affect sleep. Refer to TBI CoE’s sleep disturbance clinical recommendation for more information.
‡ Antidepressants can cause varying levels of sexual dysfunction (venlafaxine > TCAs >> mirtazapine).

(A),(B),(C) indicates level of evidence per the European Federation of Neurological Societies guidelines.39
### OTHER POST-TRAUMATIC HEADACHE SUBTYPES

**ICD-10 Code:** Neuropathic: M79.2, TN: G50.0, ON: M54.81

<table>
<thead>
<tr>
<th>Diagnostic Criteria</th>
<th>Headache Related to Neuropathic Pain</th>
<th>Trigeminal/Occipital Neuralgia</th>
<th>Vestibular Migraine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• ICHD-3 Criteria for TN</td>
<td>• ICHD-3 Criteria for ON</td>
<td>• ICHD-3 Criteria for vestibular migraine</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>Localized, episodic pain, burning, tingling, or hyperesthesia associated with soft tissue trauma to the scalp or face</th>
<th>Moderate to severe, sharp, burning, tingling, or electric-like pain over affected nerve branches</th>
<th>Moderate to severe vestibular symptoms (e.g., vertigo, motion-induced dizziness) associated with migrainous features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>Localized tenderness or reproduction of pain with movement or palpation</td>
<td>Positive Tinel sign or point tenderness over affected nerve branch</td>
<td>Review headache diary for temporal association with vestibular symptoms. Thorough neurologic examination to exclude alternative diagnosis. Nystagmus may be present during an episode of vestibular migraine; however, alternative causes should be excluded based on clinical suspicion.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Pharmacologic Treatment Options</th>
<th>Cold or hot compresses</th>
<th>Massage therapy</th>
<th>CBT</th>
<th>Medical, Chinese, or battlefield acupuncture</th>
<th>Modification of uniform standards if indicated (e.g., haircuts, shaving, wearing cover)</th>
<th>Medical, Chinese, or battlefield acupuncture</th>
<th>Modification of uniform standards if indicated (e.g., haircuts, shaving, wearing cover)</th>
</tr>
</thead>
</table>
### OTHER POST-TRAUMATIC HEADACHE SUBTYPES (CONTINUED)

**ICD-10 Code: Neuropathic: M79.2, TN: G50.0, ON: M54.81**

<table>
<thead>
<tr>
<th>Pharmacologic Treatment Options</th>
<th>Headache Related to Neuropathic Pain</th>
<th>Trigeminal/Occipital Neuralgia</th>
<th>Vestibular Migraine</th>
</tr>
</thead>
</table>
| **Neuropathic Pain** | Amitriptyline: 10–25mg QHS, titrate up weekly in 10–25mg increments, up to 150mg QHS | Occipital Neuralgia | • Greater occipital nerve block  
| &nbsp;&nbsp;&nbsp;&nbsp; Gabapentin (IR): 100–300mg 1–3 times/day, titrate up to 300–1200mg TID | &nbsp;&nbsp; Neuropathic pain agents  
| &nbsp;&nbsp;&nbsp;&nbsp; Pregabalin: 25mg QD, titrate up weekly in 25–150mg increments, up to 300–600mg/day in 2–3 divided doses | Trigeminal Neuralgia | Consider consultation with Neurology for medication management.  
| &nbsp;&nbsp;&nbsp;&nbsp; Duloxetine: 30mg QD, titrate up to 60mg QD after 1 week | &nbsp;&nbsp; Carbamazepine: 200–400mg/day in 2–4 divided doses, titrate up over several weeks in 200mg increments to usual maintenance dose of 600–800mg/day in 2–4 divided doses; max dose 1200mg/day  
| &nbsp;&nbsp;&nbsp;&nbsp; Patients with TN typically improve with treatment. If no improvement in 2 weeks, discontinue medication and refer. | &nbsp;&nbsp; Oxcarbazepine: 300–600mg/day in 2 divided doses, titrate up every ≥3 days in 300mg increments, up to 1800mg/day  
| **Occipital Neuralgia** | • Greater occipital nerve block  
| **Trigeminal Neuralgia** | • Neuropathic pain agents  
| **Physical therapy with a trained provider has benefit for ON.** | • Carbamazepine: 200–400mg/day in 2–4 divided doses, titrate up over several weeks in 200mg increments to usual maintenance dose of 600–800mg/day in 2–4 divided doses; max dose 1200mg/day  
| Physical therapy for pain management with chronic symptoms > 3 months | • Oxcarbazepine: 300–600mg/day in 2 divided doses, titrate up every ≥3 days in 300mg increments, up to 1800mg/day  
| Massage Therapy | • Physical therapy with a trained provider has benefit for ON.  
| **Vestibular Migraine** | • Physical therapy for pain management with chronic symptoms > 3 months  
| Neurology for evaluation and management of persistent symptoms  
| Vestibular Rehabilitation (PT or OT) for evaluation and management of patients with visual/motion triggers or functional complaints | • Vestibular Rehabilitation (PT or OT) for evaluation and management of patients with visual/motion triggers or functional complaints  
| **Pharmacologic Treatment Options** | **Specialty Referral** | **Neurology for evaluation and management of persistent symptoms** | **Vestibular Migraine** | **Neurology for evaluation and management of persistent symptoms** | **Vestibular Rehabilitation (PT or OT) for evaluation and management of patients with visual/motion triggers or functional complaints** | **Neurology for evaluation and management of persistent symptoms** | **Vestibular Rehabilitation (PT or OT) for evaluation and management of patients with visual/motion triggers or functional complaints** |

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**Other Post-Traumatic Headache Subtypes (Continued):**

- **Neuropathic Pain**
  - Amitriptyline: 10–25mg QHS, titrate up weekly in 10–25mg increments, up to 150mg QHS
  - Gabapentin (IR): 100–300mg 1–3 times/day, titrate up to 300–1200mg TID
  - Pregabalin: 25mg QD, titrate up weekly in 25–150mg increments, up to 300–600mg/day in 2–3 divided doses
  - Duloxetine: 30mg QD, titrate up to 60mg QD after 1 week

- **Occipital Neuralgia**
  - Greater occipital nerve block
  - Neuropathic pain agents

- **Trigeminal Neuralgia**
  - Carbamazepine: 200–400mg/day in 2–4 divided doses, titrate up over several weeks in 200mg increments to usual maintenance dose of 600–800mg/day in 2–4 divided doses; max dose 1200mg/day
  - Oxcarbazepine: 300–600mg/day in 2 divided doses, titrate up every ≥3 days in 300mg increments, up to 1800mg/day

- **Vestibular Migraine**
  - Triptans may be considered when headache symptoms accompany vertigo attacks or when vertigo acts as a migraine aura.
  - May consider vestibular suppressants; however, not typically recommended in the immediate period following mTBI

**Specialty Referral**

- **Physical Therapy**
- **Pain Management for chronic symptoms > 3 months**
- **Massage Therapy**
### MEDICATION OVERUSE HEADACHE \(^7,19,48\text{-}51\)

**ICD-10 Code:** G44.4, G44.40, G44.41

| Risk Factors | Consider preemptive preventive therapy in patients at high risk for MOH.  
  ● Severe or frequent headaches (≥ 7 days per month)  
  ● Migraine diagnosis  
  ● Frequent use of anxiolytics, analgesics, or sedative hypnotics  
  ● Smoking  
  ● Physical inactivity  
  ● Psychiatric conditions (e.g., anxiety, depression) especially in combination with MSK or GI complaints  
  ● Self-reported whiplash  
  ● Female sex  
  ● Sick leave of > 2 weeks in the last year |
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</thead>
<tbody>
<tr>
<td>Diagnostic Criteria</td>
<td></td>
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</tbody>
</table>
  ● ICHD-3 Criteria for MOH  
  ● Headache occurring on 15 or more days per month in a patient with a preexisting primary headache disorder (primarily migraine or tension-type)  
  ● Regular overuse for > 3 months of one or more medications that can be taken for acute and/or symptomatic treatment of headache.  
  ● Not better accounted for by another ICHD-3 diagnosis |
| Clinical Features | Headaches often present upon awakening and are of pressing, tightening, or pulsating character in either a unilateral or bilateral distribution. |
| Prevention |  
  ● Provide patient with [MOH Fact Sheet](#).  
  ● Limit abortive medications to < 10 days per month or ≤ 2 days per week.  
  ● Use of non-pharmacologic approaches (e.g., neuromodulation, behavioral approaches) as an adjunct to pharmacotherapy, can decrease abortive medication use and risk of MOH.  
  ● Avoid butalbital-containing analgesics and opioids. |
| Evaluation |  
  ● Review [headache diary](#) including use of abortive medications.  
  ● Use Medication Dependence Questionnaire-Headache (MDQ-H). |
| Pharmacologic Treatment Options |  
  ● Initiate or optimize preventive medication.  
  ● Discontinue or gradually taper the overused medication as tolerated and initiate an alternate abortive medication from a different class if indicated. Limit use to ≤ 2 days per week.  
  ● If additional symptomatic relief is required (e.g., frequent or severe headaches) during tapering or discontinuation, initiate bridge therapy with a long-acting NSAID (e.g., naproxen) or prednisone. |
| Specialty Referral | Refer to Neurology or Pain Management for discontinuation of chronic use of barbiturates, opioids, or benzodiazepines due to risk of withdrawal symptoms, including seizure. |
Assessing for Treatment Efficacy

Ensuring efficacy of headache treatment is imperative as inadequately controlled headaches can result in MOH, transformation from episodic to chronic headache, delayed return to duty, and increased disability.

### TREATMENT EFFICACY CRITERIA

<table>
<thead>
<tr>
<th>Abrotive</th>
<th>Preventive (2–3 months at a therapeutic dose)</th>
</tr>
</thead>
</table>
| • Pain-free and functioning 2–4 hours after taking abortive medication  
  • Treatment works consistently without routine headache recurrence.  
  • Able to plan their day  
  • Tolerates the medication side effects | Patient self-report or headache diary indicates:  
• ≥ 50% reduction in headache frequency from baseline  
• Significant decrease in attack duration or severity from baseline  
• Decreased abortive medication use from baseline  
• Decreased days of missed work from baseline  
• Tolerates the medication side effects |

### If Treatment Is Ineffective

- Investigate causes of medication failure (e.g., lack of adherence, poor absorption).
- Investigate other potential causes of headache (e.g., MOH, co-occurring conditions, headache triggers) per headache diary.
- Initiate alternative first-line abortive agent.
- Consider preventive therapy if abortive treatment is ineffective or:
  - Abortive therapy is contraindicated or not well tolerated.
  - Patient is at high risk for MOH
  - Headaches are long-lasting (> 12 hours) or frequent (≥ 2 severe or ≥ 4 mild-moderate headaches per month).
  - Headaches cause significant disability or diminished quality of life despite appropriate abortive treatment.

- Investigate causes of medication failure (e.g., lack of adherence, inadequate dose).
- Investigate other potential causes of headache (e.g., MOH, co-occurring conditions, headache triggers per headache diary).
- Switch to another first-line preventive in a different medication class.

### Specialty Referral Considerations

- Consider referral to Neurology for any of the following:
  - Two or more preventive treatment failures
  - Ineffective treatment after 2–3 months at a therapeutic dose
  - Provider clinical judgment

### Disposition

Document disposition in the electronic health record and on the Patient and Leadership Guide with consideration of the functional impact of post-traumatic headache on the service member’s ability to perform the mission and the risk of harm to self or others. Certain conditions and medications can affect deployability and restrict duty status. Policies and procedures are service and command specific. Consult duty and deployment standards for service member’s organization when dispositioning patient.

**Coding Guidance:** Refer to ICD-10-CM Coding Guidance for Traumatic Brain Injury.
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