

The [Guidelines for Concussion/Mild Traumatic Brain Injury & Persistent Symptoms, 2nd Ed. \(for Adults, 18 and over\)](#) indicate that, although a full recovery is expected for most, approximately 10-15% of individuals will continue to experience significant symptoms beyond the normal recovery period of 3 months. Developed using the *Guidelines*, this document highlights key recommendations on how to prioritize treatment, when a referral is indicated and how to address symptoms.

To access the **pediatric guidelines**, please visit: <http://concussionsontario.org/guidelines-for-pediatric-concussion/>

For the **adult guidelines**, visit: <http://onf.org/documents/guidelines-for-concussion-mtbi-persistent-symptoms-second-edition>

How should treatment be prioritized?

The Guidelines recommend that clinicians prioritize treatments in a hierarchical fashion

Address Primary Symptoms Early:

- Depression/anxiety/irritability
- Sleep Disorder
- Post-Traumatic Headache



Secondary Symptoms to be addressed secondarily:

- Balance
- Dizziness/Vertigo
- Cognitive Impairment
- Fatigue
- Tinnitus/Noise Intolerance

When is a referral indicated?

If co-morbidities or identified health risk factors are present (*see table below*) and symptoms have not improved by 1 month

Or

If symptoms persist for 3 months or longer

Risk Factors Influencing Recovery Post mTBI[†]

| | |
|-----------------------------------|--|
| Medical Factors (Red Flags) | Post-traumatic Amnesia (PTA); Previous traumatic brain injury; Previous physical limitations; Previous neurological or psychiatric problems; High number of symptoms reported early after injury; Reduced balance or dizziness; Confounding effects of other health-related issues; Nausea post injury; Memory problems post injury |
| Contextual Factors (Yellow Flags) | Injury sustained in a motor vehicle accident; Potential influence of secondary gain related to mitigation and compensation; Being a student; Not returning to work or delayed in returning to work; Life stressors at the time of injury; Older age; Lack of social supports; Less education/lower socioeconomic status; Higher levels of symptom reporting and heightened self awareness of deficits. |

[†]The *Guidelines for Concussion/Mild Traumatic Brain Injury & Persistent Symptoms*, Table 1.1, page 10

Treatment of Symptoms & Service Recommendations

The table below highlights recommendations according to symptom, as per the Guidelines. Please refer to the sections and pages within the Guidelines that are referenced should more information be required. For specialized clinics/centres across Ontario, as listed in the [Guidelines for Concussion/Mild Traumatic Brain Injury & Persistent Symptoms, 2nd Ed.](#), refer to Appendix 2.1, p 78-80 of the Guidelines.

For information on ABI resources in Toronto and GTA (and the process for each), refer to the [ABI Resources in Toronto and GTA](#) document. Please note that not all services listed require a referral through the Toronto ABI Network. **If funding is available, explore private providers for faster access to care.**

| Symptom | Recommendation(s) |
|-------------------------|---|
| Headaches | There are no evidence based treatment guidelines to guide management; management is based upon clinical experience and expert opinion. Please refer to Algorithm 6.1, page 29 of the Guidelines for a headache treatment pathway that includes pharmacological and non-pharmacological treatment options. |
| Sleep/Wake Disturbances | <p>May interfere with mental capacities, mood and participation in social activities and/or employment and can exacerbate poor attention, memory and learning capabilities. Management includes pharmacological and non-pharmacological treatment options (Algorithm 7.1, page 33 of the Guidelines).</p> <ul style="list-style-type: none"> ▪ Cognitive Behavioural Therapy (CBT) is recommended for treatment of insomnia and emotional well-being. <ul style="list-style-type: none"> ○ If formalized treatment (i.e., CBT for insomnia) is not available in your area, the <i>Guidelines</i> recommend sleep restriction and stimulus control to be monitored weekly for the first few weeks. ▪ Also consider physical exercise, mindfulness-based stress reduction and acupuncture <p>If dealing with less common sleep problems associated with mTBI (e.g., REM sleep behaviour disorder, restless leg syndrome), referral to a sleep specialist (ideally with mTBI and polysomnography experience) is recommended.</p> |

| Symptom | Recommendation(s) |
|-------------------------------|--|
| Mental Health | <p>The assessment of mental health issues can be challenging given the overlap between mood and anxiety related disorders and sleep/pain/cognitive difficulties.</p> <p>Please refer to Algorithm 8.1, page 39 of the Guidelines for management of mental health disorders.</p> <p>If symptoms are severe or if pharmacological and non-pharmacological treatment options are unsuccessful, refer to a Psychologist or Psychiatrist.</p> <p> Clinical Tip: <i>Should Psychology or Psychiatry not be available, consider other Mental Health Professionals.</i></p> |
| Cognitive Difficulties | <p>Expected recovery post mTBI ranges from 1 week to 6 months. Approximately 5-15% of those suffering mTBI experience persistent symptoms. “Cognitive symptoms do not typically worsen as a sole and direct function of the traumatic injury” (p.40). If symptoms persist at 3 months post-injury, consider a referral to a Neuropsychologist.</p> <p> Clinical Tip: <i>Should Neuropsychology not be available, consider a referral to an Occupational Therapist or Speech Language Pathologist with expertise in brain injury. Ensure client’s sleep is intact and their mood is stabilized. Cognitive difficulties can be influenced by sleep, mood, pain and/or headaches. Ensure primary symptoms are addressed first (refer to page 1 – How should treatment be prioritized?) before seeking additional treatment.</i></p> |
| Balance/Dizziness | <p>Vestibular deficits can be peripheral or central in origin. The most common cause of post-traumatic peripheral vestibular dysfunction is Benign Paroxysmal Positional Vertigo (BPPV). For unilateral peripheral vestibular dysfunction Vestibular Rehabilitation (typically provided by a specialized physiotherapist) is recommended.</p> <p> Clinical Tip: <i>Dizziness is a debilitating symptom post TBI. The Particle Repositioning Maneuver is one type of treatment easily administered by an ENT physician or other clinical personnel like PT or RN and can be done immediately once diagnosis is made. Other treatment options for BPPV include Physical Therapy Maneuvers such as Brandt- Daroff or Semont’s Liberatory Maneuver. Patients are trained to perform these maneuvers and can do them as many times as needed at home.</i></p> |
| Vision Dysfunction | <p>Individuals with mTBI and advanced ocular health changes and complex strabismic anomalies, consider a referral to a Neuro-Ophthalmologist. For changes in accommodation, version or vergence movements, photosensitivity and visual field integrity, refer to a qualified Optometrist for rehabilitative techniques.</p> <p> Clinical Tip: <i>Encourage follow up with primary eye doctor to address any changes to vision.</i></p> |

| Symptom | Recommendation(s) |
|----------------|---|
| Fatigue | <p>If fatigue is experienced at 3 months post injury, individuals are likely to experience fatigue beyond 6 months. Ensure medications are reviewed for potential side effects. Provide coping advice as early as possible (see Appendix 11.3, page 120 of the Guidelines).</p> <p>If debilitating fatigue continues, refer to a brain injury specialist or rehab program.</p> <p> Clinical Tip: <i>Ensure primary symptoms are addressed first before seeking additional treatment (refer to page 1 – How should treatment be prioritized?).</i></p> |

The information in this handout is for educational purposes, it does not replace medical advice.



Clinical tips are based on the knowledge and experience of team members at Bridgepoint Sinai Health System, Holland Bloorview Kids Rehabilitation Hospital, St. Michael's Hospital – Head Injury Clinic, Sunnybrook Health Sciences Centre – Traumatic Brain Injury Clinic, and Toronto Rehab-University Health Network as well as evidence and research, as per the Guidelines for Concussion/Mild Traumatic Brain Injury & Persistent Symptoms, 2nd Ed.