

WSSCC MEDICAL BULLETIN – OCTOBER 2021

CONCUSSIONS AND POST-CONCUSSION SYNDROME

A concussion describes a change of mental status following a mild traumatic brain injury that has no evidence of structural brain damage. Post-concussion syndrome is a condition that occurs following a concussion that is associated with cognitive symptoms.

CONCUSSIONS:

There is currently no agreed upon gold standard test to diagnosis concussions. Diagnosis relies on a clinical exam, and knowledge of the mechanism of injury.

Signs and Symptoms May Include:

- Loss of consciousness of 30 minutes or less
- Nausea and vomiting
- Dizziness
- Headache
- Blurred vision
- Fatigue and lethargy
- Memory loss of events immediately before or after the accident
- Inability to focus
- Altered mental status
- Neurological deficits
- Behavioral changes
- GCS of 13-15 after 30 minutes

Mechanisms of Injury:

- The head is struck by an object.
- The head strikes an object.
- The brain undergoes an acceleration/deceleration movement such as whiplash (Kay et al., 1993).

Prognosis

Most individuals with a concussion recover within 72 hours, and headaches resolve within 2 to 4 weeks. Workers can usually return to their usual activities including work after 24 hours (ACOEM, 2021).

TREATMENTS:

Treatment is initially focussed on symptom management such as acetaminophen for headaches. Avoid nonsteroidal anti-inflammatory drugs (NSAIDs) because of the possibility that these drugs increase the risk of bleeding in the brain.

Should symptoms persist beyond 2 weeks, rehabilitation for physical, cognitive and behavioural signs and symptoms should be considered. WSSCC may be able to facilitate admission to an accredited concussion program. These programs include support from OT, PT, and psychologists.

NOTE: Recent research indicates that long periods of rest may do more harm than good. Encourage gradual re-introduction of activity, both physical (ie. walking) and cognitive. If symptoms get worse, scale back the activity (Silverberg, 2013).

POST-CONCUSSION SYNDROME

Bazarian et al (1999) define post-concussion syndrome as a symptom complex following a concussion or mild traumatic brain injury. Diagnosis can be controversial, as the worker's presenting symptoms can be vague and subjective. There is no correlation between the diagnosis and loss of consciousness, or the severity of the injury (Evans, 2021). Symptoms most often occur within a week to 10 days post injury and resolve within 3 months.

Signs and Symptoms

- Headaches
- Dizziness
- Fatigue
- Irritability
- Anxiety
- Insomnia
- Loss of concentration and Memory
- Noise sensitivity (Evans, 2021)

Multiple studies suggest that poor coping skills, limited social support, negative perceptions, and psychiatric comorbidities including depression, anxiety, acute stress and PTSD are associated with the development of post-concussion syndrome (Evans, 2021, ACOEM, 2021).

TREATMENTS:

- Medications can be helpful for management of symptoms such as headaches, insomnia, and depression
- Cognitive behavioural therapy for cognitive impairment
- Family counselling for support
- Rehabilitation, including physical therapy for balance, co-ordination and vestibular responses, and occupational therapy for communication, time management, and organizational skills.

Interventions that are associated with better outcomes include early education, and early psychological and physical support (Grabowski P, et al, 2017). Setting a worker's expectations of recovery and re-entry into the workplace and establishing a goal of returning to their previous job early in the course of treatment is recommended.

Again, WSCC may be able to facilitate admission to an accredited concussion program. These programs include support from OT, PT, and psychologists.

RETURN TO WORK

A gradual return to usual activities including work can usually commence after 24 hours of observation. Early, graduated resumption of pre-injury activities improves recovery outcomes (Silverberg, 2013, Willer, 2006).

The return to work should be gradual, increasing duties and hours to transition back to full duties. Identify any medical limitations and restrictions for the employer. For example, if there is impaired balance, a

medical restriction would be “no working at heights”, or if there is impaired concentration or visual disturbance, a medical restriction would be “no operating heavy equipment”, or “no driving” (Talmage, 2010, Practice OMACoMCA).

The employer will use the information provided to identify suitable workplace accommodations. These may involve:

- Alternate duties, or modifications to the worker’s duties
- Flexible work schedule/reduced hours
- Quiet work space
- Dimmed lighting conditions
- Minimizing distractions in the workplace
- Checklists
- Written instructions

The goal of any RTW plan for concussion is to enable the worker to fully participate in work tasks (maximizing work capacity) while remaining below symptom-exacerbation threshold levels. It is important to note that the existence of symptoms at baseline is not, in and of itself, a basis for no return to work. Symptoms are common in the general population, and do not necessarily impair workability (Mittenberg, 1993).

WSCC Assistance

The WSCC has a [Return to Work Specialist](#) that can assist employers with making appropriate work modifications.

If you have any questions about how WSCC can assist you in treating patients with workplace injuries or illnesses, or would like to discuss the above information with WSCC’s Medical Unit, contact them [here](#).

REFERENCES

- American College of Occupation Medicine (2021). Concussion. *MD Guidelines*. Retrieved August 9, 2021.
- American College of Occupation Medicine (2021). Post-concussion Syndrome. *MD Guidelines*. Retrieved August 9, 2021.
- Bazarian, J.J., Wong, T., Harris, M. et al. (1999). Epidemiology and predictors of post-concussive syndrome after minor head injury in an emergency population. *Brain Inj*, 13, 173.
- Evans (2021). Post Concussion Syndrome. *UpToDate*. Retrieved May 31, 2021.
- Kay, T., Harrington, D.E., Adams, R., Anderson, et al. (1993). Definition of mild traumatic brain injury. *Journal Head Trauma Rehabilitation*, 8, 86-87.
- Grabowski P, Wilson J, Walker A, et al. (2017) Multimodal impairment-based physical therapy for the treatment of patients with post-concussion syndrome: A retrospective analysis on safety and feasibility. *Phys Ther Sport*, 23:22-30.
- Mittenberg W, Zielinski R, Sharon F. Recovery from Mild Head Injury: A Treatment Manual for Patients. *Psychotherapy in Private Practice*. 1993;12(2):37-52
- Practice OMACoMCo. Ontario Medical Association Committee on Medical Care and Practice. The role of the primary care physician in timely return-to-work programs.
- Silverberg ND, Iverson GL.(2013) Is rest after concussion “the best medicine?”: recommendations for activity resumption following concussion in athletes, civilians, and military service members. *J Head Trauma Rehabil*. 28(4):250-259.
- Talmage J MM, Hyman M. (2010) *AMA Guides® to the Evaluation of Work Ability and Return to Work*. American Medical Association.
- Willer B, Leddy JJ. (2006) Management of concussion and post-concussion syndrome. *Curr Treat Options Neurol*. 8(5):415-426.