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Sport-Related Concussion/mTBI

What is a sport-related concussion/mTBI?

A sport-related concussion/mTBI is a traumatic brain injury that may be caused by either a direct blow to the head, face, neck, or elsewhere on the body as an indirect force being transmitted to the head during sports activity.

When can they happen?

Concussion/mTBI can happen in any sport and is more likely to happen when the athlete does not expect the force or impact. Concussion/mTBI is difficult to assess and manage because the symptoms can begin shortly after the injury or take a longer time to appear. You may experience a variety of symptoms.

In adults, most of the sport concussion/mTBI symptoms resolve within 10 to 14 days.

How is a sport-related concussion/mTBI assessed?

It is critical to stop playing your sport immediately after having a suspected concussion. A sport-related concussion/mTBI can be recognized within the community by athletes, parents, coacher, officials, trainers, and licensed healthcare providers. Formal diagnosis should be made by a healthcare provider, following a thorough medical assessment. You will be looked at for signs of concussion as well as severe head, neck, or spine injury. You will also be monitored for a few hours after having a suspected concussion.

Do not return to the game or practice until a primary healthcare provider approves your return. Accurate diagnosis, management, and return to sport decisions are important at all levels of sport and for all types of sport.

Assessment right after the injury will help you find out if you have any symptoms of a concussion/mTBI, such as:

- Memory loss
- Change in mental state: confusion, disorientation, slowed thinking
- Physical symptoms: headache, weakness, lose of balance, change in vision, hearing sensitivity, dizziness



How is sport-related concussion/mTBI managed?

If you are diagnosed with a concussion/mTBI, your primary healthcare provider will give you information about the concussion/mTBI and what you can do to improve your chances of a full recovery. It is a good idea for your family or support person to have this information, so they can help you monitor your symptoms and progress as well.

Management of concussion/mTBI depends on factors related to the symptoms, including:

- The types of symptoms you have
- How long you've had them
- How severe they are
- How long the symptoms last
- How often and when they appear

Management of your concussion/mTBI will also depend on other factors, such as:

- If you've had a previous concussion/mTBI
- How much time passed between concussion/mTBI
- If you have migraine, sleep difficulties, or mental health problems
- If you are taking certain medications

Athletes should be provided with education about signs and symptoms, management of initial symptoms, guidance on gradual return to school, work, and sport.

When can I return to my regular activities?

You will need a brief period of rest in the first 24-48 hours (the acute phase) after being diagnosed. After that, you will be able to gradually and progressively return to your daily activities if your symptoms do not get worse. Most athletes make a complete recovery after 1 to 4 weeks. Athletes who do not recover after 4 weeks may benefit from referral to a physician with experience in concussion/mTBI in a concussion clinic.

While you recover you will need to avoid any vigorous activity, contact sports, or anything that can cause another concussion/mTBI. Your primary healthcare provider will guide and monitor your progress to recovery. You will gradually increase your activity level so that you do not worsen your symptoms.

If you have symptoms that persist, your primary healthcare provider may refer you to a specialized clinic that has a physician with experience in concussion/mTBI and other rehabilitation specialists.



Do I need to stop playing?

Until you are cleared to return to play by a primary healthcare provider, it is very important that you do not play. You should follow a step-wise process to return to sport. Most sports have a protocol for returning to play. To help you decide whether to continue playing, you may need to see a specialist in sport concussion/mTBI management.

Here are some signs for slower recovery:

- Multiple concussions (3+)
- Increasing duration of symptoms
- Subsequent concussions
- Inability to return to full-time school/work

Key Guideline Recommendations for Healthcare Providers

The following key guideline recommendations for healthcare providers have been included here so you can see what the guideline recommends healthcare providers do in assessing and treating patients after concussion/mTBI.

3.1	<p>Patients with sport-related concussion may develop symptoms acutely or sub-acutely. If any one of the following signs/symptoms are observed/reported at any point following a blow to the head, or elsewhere on the body leading to impulsive forces transmitted to the head, concussion should be suspected and appropriate management instituted.</p> <ol style="list-style-type: none">1. Any period of loss of or decreased level of consciousness less than 30 min2. Any lack of memory for events immediately before or after the injury (post-traumatic amnesia) less than 24 hours3. Any alteration in mental state at the time of the injury (e.g., confusion, disorientation, slowed thinking, alteration of consciousness/mental state)4. Physical symptoms (e.g., vestibular, headache, weakness, loss of balance, change in vision, auditory sensitivity, dizziness) Note: No evidence of intracranial lesion on standard imaging (if present, it is suggestive of more severe brain injury)
3.2	<p>When a player shows any symptoms or signs of a Sport-Related Concussion (SRC):</p> <ol style="list-style-type: none">a) The player should be medically evaluated by a physician or other licensed healthcare professional onsite using standard emergency management principles and particular attention should be given to excluding a cervical spine injury.b) The appropriate disposition of the player must be determined by the treating healthcare professional in a timely manner. If no healthcare professional is



	<p>available, the player should be safely removed from practice or play and urgent referral to a physician arranged.</p> <p>c) Once the first-aid issues are addressed, an assessment of the concussive injury should be made by a healthcare professional using a sideline assessment tool (e.g., SCAT5). Non-medical professionals should use the Sport Concussion Recognition Tool.</p> <p>d) The player should not be left alone following the injury, and serial monitoring for increasing symptoms or signs of deterioration is essential over the initial few hours after injury with the aim of detecting an evolving injury.</p> <p>e) A player with suspected SRC should not be allowed to return-to-play on the day of injury.</p>
3.4	<p>There is currently insufficient evidence that prescribing complete rest may ease discomfort during the acute recovery period by mitigating post-concussion symptoms and/or that rest may promote recovery by minimizing brain energy demands following concussion.</p> <ul style="list-style-type: none"> o An initial period of rest in the acute symptomatic period following injury (24-48 hours) may be of benefit. <p>After a brief period of rest, a sensible approach involves the gradual return to school and social activities (prior to contact sports) as tolerated (i.e., in a manner that does not result in a significant or prolonged exacerbation of symptoms).</p>

Additional Resources

Sport Concussion Assessment Tool (SCAT5) – Advice

<https://braininjuryguidelines.org/concussion/fileadmin/media/appendices/appendix-3-1.pdf>

Parachute Return to Play Protocols

<http://www.parachutecanada.org/injury-topics/item/concussion-protocol-resources-for-sport-organizations>



Cautionary Note to Users

The content of the *Guideline for Concussion/mTBI & Prolonged Symptoms, 3rd Edition: for Adults over 18 years*, is based on the status of scientific knowledge available at the time of their finalization (2017) as well as on the consensus of the experts who participated in the guideline development.

This guideline has been created to provide recommendations and help with management of concussion/mild traumatic brain injury (mTBI). It is only for management for adults over 18 years of age. This guideline is not intended for use by people who have sustained or are suspected of having sustained a concussion/mTBI for any self-diagnosis or treatment.

The guideline can be used by patients when speaking with healthcare providers about their care. It covers getting a diagnosis, managing symptoms in the early phase (acute) and management in the longer recovery phase (prolonged symptoms). Patients may wish to bring their healthcare and other providers' attention to this guideline. It is based on up-to-date, quality research evidence, the expertise of providers and the input of patients.

