CONCUSSIONS

What is a concussion?

A concussion is a mild traumatic brain injury (mTBI) that occurs when there is rapid acceleration/deceleration of the brain inside the skull due to a hit to the head, face, neck, or elsewhere on the body with forces transmitted to the brain. This causes multiple signs and symptoms, including physical, cognitive, emotional, and sleep-related issues.

What are the signs and symptoms of a concussion?

If an athlete shows ANY ONE of the following symptoms, they are diagnosed with a concussion. These symptoms also may appear in the hours following an incident.

Cognition	Physical Symptoms	Overall Wellbeing
Difficulty concentrating	Headache	Nervous or anxious
Amnesia - troubles remembering before or after injury	Dizziness	Irritable
Confusion	Neck pain	Sadness
Drowsiness	Nausea or vomiting	More emotional
Fatigue or low energy	Blurred vision	Feeling slowed down
	Pressure in head	Feeling like they're in a fog
	Balance problems	"Don't feel right"
	Light sensitivity	Trouble falling asleep
	Noise sensitivity	

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Red Flags

Medical attention is required **immediately** if any of the following red flags are present.

Severe or worsening headache	Severe drowsiness or can't be awakened	Seizures
Decreasing consciousness	Repeating the same question: • What happened? • Where are we? • Why are we here?	Weakness/numbness in the arms or legs
Unsteadiness on feet or slurring of speech	Fluid leaking from ears	Bruising behind the ears
2 black eyes	Repeated vomiting	Inability to remember more than 30 minutes before OR after the injury

What to do if you think an athlete has a concussion:

- Immediate removal from play - if they continue to play, they risk a second hit to the head or prolonged recovery
- Monitor for red flags
- Rest
  - Physical and cognitive rest is crucial during the acute phase of a concussion
  - This includes avoiding activities that can make symptoms worse, such as screen time, reading, or physical exertion.
- A **CCMI Certified physiotherapist** should be seen 24-48 hours after injury to:
  - Assess and screen for red flags
  - Assess to determine which systems were affected by the concussion
  - Provide education and guidelines for recovery
  - Provide exercises to help with rehabilitation of the deficits found in the assessment

Note:

We do not recommend keeping an athlete in a dark room or trying to deprive their sensory systems after a concussion. This can lead to hypersensitivity and can make it more challenging for an athlete to return to pre-concussion functioning

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How long does concussion rehab take?

Each athlete will be different in terms of healing times. However, research shows us that even if symptoms are no longer present, the brain is not fully healed until at least 22-45 days. This means that even if an athlete feels better before that timeline, the deficits in their brain are still present and risking another concussion could prolong their recovery and make their symptoms even worse.

Stage	Return to Learn
1	**Symptom-Limited Cognitive Activity** • Light reading, TV - NO increase in symptoms • Plenty of rest • Take it easy for a day or two, but not lying in bed all day
2	**Light Cognitive Activity** • Increase cognitive load - homework, working from home • Some assignments • Once able to tolerate 45-60 mins with minimal increase in symptoms, move on to stage 3
3	**Half Days of School - With Restrictions** • No tests • No gym • No recess • No added homework OR loose deadlines
4	**Full Days of School - With Restrictions** • Same restrictions as stage 3 • Once able to tolerate full days with no increase in symptoms, gradually lift restrictions
5	**Full Days of School - NO Restrictions**

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Return to Play Guidelines

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Please note that this process is to be guided by a medical professional who will progress to the next stage based on re-evaluation, time, and symptoms present. If symptoms reoccur, an athlete will be moved back a stage

Kids PHYSIO GROUP

	TITLE	DESCRIPTION	DO	DO NOT	GOALS
1	**SYMPTOM - LIMITED PHYSICAL ACTIVITY**	Encourage light physical and cognitive activites that do not provoke symptoms to a significant degree or place you at risk for hitting your head. Remain here until symptom-free for 24-48 hours and then attempt Stage 2. If you are having trouble with Stage 2, consult your healthcare provider.	Light walks (15- 20 mins). Household chores. Limit screen time.	Physical or cognitive activities that make your symptoms worse or risk a hit to your head.	Gradual reintroduction of light exercise and activities of daily living.
2	**LIGHT PHYSICAL ACTIVITY**	You should be evaluated by your healthcare provider with a graded exercise test (eg. Buffalo Concussion Treadmill test) to determine your exercise tolerance. Once completed your healthcare provider can provide recommendations for you.	Light walking, jogging or weight training.	Physical activity that makes symptoms worse, risk another hit to the head, or sport specific activities.	Increase heart rate to allow brain to adapt to increase in blood flow. Test will determine pre-symptom heart rate to set the exercise level.
3	**SPORT SPECIFIC ACTIVITY**	You can return to non-contact practice. This is the first step to safely returning to sport. Focus on light individual drills or exercises. Avoid contact, increasing your heart rate too much, or continuing if you have symptoms.	Standing Serving. Passing. Setting. Standing hitting drills.	Scrimmages. Pepper. Hitting drills w/ full approach. Blocking drills. Defensive drills. Sprinting. Resistance training.	Start to add movements that mimic what the athlete will do in their sport.
4	**NON-CONTACT TRAINING DRILLS**	Higher intensity, non-contact practice with the team. Still avoiding drills that could cause hit to head or that have contact. Resistance training can begin. Gradually increase intensity and start to push yourself.	Serving. Passing. Setting. Hitting drills with full approach. Sprinting or agility drills. Individual blocking drills.	Do not engage in contact or drills with a chance for contact. Do not continue if you develop symptoms	Higher intensity drills, higher heart rate, more cognitive involvement.
5	**MEDICAL CLEARANCE STAGE**	Should be overseen by your health care professional. Should only be attempted once you have successfully returned to school/work with no restrictions and are completely asymptomatic with physical and cognitive activity.	Should involve intensive dynamic physical exertion testing and/or pre-injury baseline testing to ensure no lingering issues.	Do not continue if you develop symptoms. Stop and notify your healthcare professional.	Return to full practices. No longer at risk of second impact syndrome
6	**FULL RETURN**	You are now cleared to return to full contact activity.	Participate in at least 1 full practice before a game.	Do not continue if you develop symptoms.	Pre-concussion functioning at full capacity.