



Excerpt from the

**CONCUSSION
KIT**

Understanding and Managing Concussion in Youth

Hôpital de Montréal
pour enfants

Centre universitaire
de santé McGill



Montreal Children's
Hospital

McGill University
Health Centre

TRAUMATOLOGIE TRAUMA



What Is a Concussion

- > A concussion is a type of brain injury.
- > A concussion is also referred to as a mild traumatic brain injury (MTBI).

COMMON CAUSES OF A CONCUSSION



FACTS | A concussion...

- Can be caused by a blow or hit to the head, face, neck or body, or by acceleration/deceleration forces.
- Is not usually seen on regular clinical imaging. This explains why children and teens can be symptomatic and still have a normal CT scan or skull x-ray.
- Is the most common form of traumatic brain injury suffered by athletes, children and teens.
- May be accompanied by a loss of consciousness.
- May affect balance, reaction time and the way the child or teen may think and remember.
- Can result in a variety of symptoms that can appear immediately, hours later or over the following days.
- Means that the child or teen should be seen by a doctor to confirm diagnosis.

Recognizing a Concussion

> A concussion should be suspected in the child and symptoms after an injury:



SYMPTOMS REPORTED BY THE CHILD OR TEEN

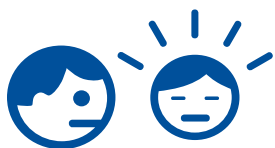
- Headache.
- Nausea.
- Vomiting.
- Dizziness.
- Feeling dazed and confused.
- Memory problems.
- Drowsiness or fatigue.
- Poor balance or coordination.
- Irritability.
- Agitation.
- Double or blurred vision.
- Sensitivity to light, noise and motion.
- Not feeling right.



SIGNS OBSERVED BY OTHERS

- Confused/disoriented, does not know: time, place, activity.
- Cannot remember what happened before, during and/or after the injury.
- A brief loss of consciousness (knocked out).
- Easily distracted, difficulty with concentration, reduced attention.
- Not playing as well. Inappropriate playing behavior.
- Lacks coordination.
- Slow to answer questions or follow directions.
- Strange or inappropriate emotions (i.e. laughing, crying, getting angry easily).
- Blank stare.

presence of any of the following signs



IF YOU SUSPECT A CONCUSSION

- Remove the child or teen from the activity and seek medical attention immediately.
- Make sure that parents or caregivers are aware of the injury.
- Do not leave the child or teen alone. Adult supervision is essential.
- Do not allow the child or teen to return to the current activity, game or practice. If uncertain, remove from play!



If the child or teen exhibits any of the following symptoms within 24-48 hours following the injury, even after medical consultation, he/she must go to an emergency department immediately

- Loss or deterioration in level of consciousness.
- Worsening headache, especially if localized.
- Persistent vomiting.
- Behavioral changes (persistent irritability in younger children; increased agitation in teens).
- Excessive drowsiness (difficult to arouse).
- Difficulty in seeing, hearing, speaking or walking.
- Seizure.
- Confusion or disorientation (does not recognize people or places).

What to Expect Following a Concussion

- › The signs and symptoms following a concussion usually improve over a period of 2-4 weeks, but may occasionally last longer.

It is very important to **modify and manage physical, cognitive and academic activities until the child or teen is fully symptom-free**. This reduces the chance of developing persistent symptoms.

GENERAL ACTIVITY MANAGEMENT AND RECOMMENDATIONS DURING THE RECOVERY PERIOD

- Do not attend school for the first 2 days. On day 3 return to school for 1 or 2 half- days. Continue progression to full days as tolerated.
- Inform daycare, school, teachers, and coaches of the concussion sustained and the restrictions and recommendations in place.
- No gym, sports, or other strenuous activities. The student should not be in the same room during these activities.
- Do not attend sport practices or games.
- Do not attend music, drama, or dance classes.
- No computers, video games, texting, watching television, and playing musical instruments for the first 2 days as these activities may provoke headaches, dizziness, and other symptoms.
- Short leisurely walks of 10-20 minutes are permitted.
- Adequate rest and breaks are encouraged.

ADDITIONAL RECOMMENDATIONS FOR TEENS

- No parties or movies as the excessive noise and light may provoke headaches.
- Avoid driving until symptoms have resolved.
- Absolutely no energy drinks, alcohol or drugs.

If there is no improvement within 10 days following the concussion, further consultation with the: Mild Traumatic Brain Injury Program (MTBI)/ Concussion Clinic is recommended. Please call 514-412-4400 extension 23310.

Returning to Physical Activity/Sports Following a Concussion

- If you have sustained a concussion, it is recommended to follow these steps before fully returning to physical activity.
- You must complete your recommended period of activity restrictions.
- **You should be symptom-free for a few days and fully returned to cognitive and academic activities; or have been advised by a doctor or a Concussion Specialist before you are ready to start the following progressive steps.**
- Written authorization may be requested prior to a return to full activity/competition.
- There should be approximately 24 hours or longer in between each step. If any symptoms return at any time, stop working out. Rest until you are symptom-free for 24 hours, then return to the previous step. If symptoms do not resolve or get worse, seek the expertise of a doctor or a concussion specialist.



RETURN TO PHYSICAL ACTIVITY/ MANAGEMENT PLAN



STEP 1 LIGHT GENERAL CONDITIONING EXERCISES



50%
EFFORT

- NO CONTACT.
- Begin with a warm up (stretching/flexibility) for 5-10 minutes.
- Start a cardio workout of 15-20 minutes which can include: stationary bicycle, elliptical, treadmill, fast paced walking, light jog, rowing or swimming.



STEP 2 GENERAL CONDITIONING AND SPORT SPECIFIC SKILL WORK DONE INDIVIDUALLY



50% - 60%
EFFORT

- NO CONTACT.
- Begin with a warm up (stretching/flexibility) for 5-10 minutes.
- Increase intensity and duration of cardio workout to 20-30 minutes.
- Begin sport specific skill work within the workout, but no spins, dives or jumps.



STEP 3 GENERAL CONDITIONING, SKILL WORK DONE WITH A TEAM-MATE



75%
EFFORT

- NO CONTACT.
- Increase duration of session to 60 minutes. Begin resistance training including neck and core strengthening exercises.
- Continue practicing sport specific individual skills.
- Begin general shooting, kicking or passing drills with a partner.
- Start beginner level spins, dives and jumps.

SPORTS



STEP 4 GENERAL CONDITIONING, SKILL WORK AND TEAM DRILLS



75-90%
EFFORT

- NO CONTACT. NO SCRIMMAGES.
- Resume pre-injury duration of practice and team drills.
- Increase resistance training and skill work as required.
- Gradually increase skill level of spins, dives and jumps.

Progress to step 5 only following full return to cognitive and academic activities without accommodations.



STEP 5 FULL PRACTICE WITH BODY CONTACT



90-100%
EFFORT

- CONTACT. SCRIMMAGES.
- Participate in a full practice. If completed with no symptoms, discuss returning to activity with the coach.

Do not progress until the following is achieved:

- Coaches make sure that the athlete has regained his/her pre-injury skill-level.
- The child or teen is confident in his/her ability to return to activity.



STEP 6 RETURN TO FULL ACTIVITY/COMPETITION



100%
EFFORT

PREVENTION TIPS

- Wear appropriate standardized, sport/activity specific protective equipment. Make sure it fits.
- Inspect protective head gear regularly and replace it according to the manufacturer's recommendations.
- Verify other appropriate protective equipment (e.g. mouth guard).
- Wearing a helmet decreases the severity of brain injuries.
- Physical preparation, proper conditioning and skill training is fundamental.
- Participate in activities that are appropriate for age and skill level.
- Fair play which includes teamwork, sportsmanship, respecting the rules and zero tolerance of violence is essential.
- Verify environmental factors such as the condition of playing fields, ice surfaces, and other sports venues.



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For more information on concussion:
thechildren.com/concussions