

Where **kids** come first

Mild traumatic brain injury



L'Hôpital de Montréal pour enfants
The Montreal Children's Hospital

Centre universitaire de santé McGill
McGill University Health Centre

A mild traumatic brain injury (MTBI), often referred to as a concussion, is a disturbance in brain function that can be caused by a direct or indirect hit to the head or body.

Most common causes of an MTBI

An MTBI is frequently the result of:

- falls from a height at home (bed, changing table, high chair, stairs)
- falls at a playground or at school
- sports or recreational activities
- motor vehicle collisions (passenger, driver, pedestrian or cyclist)
- violent acts

Common signs and symptoms of an MTBI

- headaches
- memory loss
- nausea and vomiting
- loss of consciousness
- feeling dazed and confused
- poor balance or coordination
- drowsiness
- dizziness
- irritability
- agitation
- fatigue



Your child has been examined and can return home at this time. However, certain problems can arise within 24 to 72 hours after the injury. If any of the following develop, go to an Emergency Department at once.

- Excessive drowsiness; if you find your child extremely sleepy or difficult to arouse
- Persistent vomiting
- One pupil becoming larger than the other
- Increasing headache
- Difficulty seeing, hearing, speaking, or walking.
- Persistent irritability (especially in younger children)
- Seizure

What to expect after an MTBI

Signs and symptoms after an MTBI usually last 1 – 2 weeks but may occasionally last longer.

Common symptoms include: headaches, dizziness, nausea, difficulty sleeping, and fatigue.

Other symptoms include: behavioural changes (irritability and restlessness); difficulty with memory, concentration, attention span, judgment or balance.

It is very important to allow your child to rest both physically and mentally until he/she is fully recovered. This reduces the chance of having persistent symptoms.

Restrictions and recommendations for school and other activities during the recovery period

- Inform school, teachers, and coaches of the MTBI and the restrictions
- Return to school gradually (half days for the first few days). A modification in the workload may be temporarily necessary if symptoms persist
- No academic exams for at least 1 week
- No gym, sports or other strenuous activities
- Supervised leisure swimming is permitted (No diving or jumping into the water)
- Adequate rest and breaks are encouraged
- Careful supervision on the playground
- Limit time spent on video games, computers, television and musical instruments, as they may provoke headaches

Additional considerations for teens:

- Avoid going to parties and movies in theatres (excessive noise and lights may provoke headaches)
- Absolutely no drugs or alcohol
- Must avoid driving until symptoms have resolved.

A full recovery from an MTBI is essential before returning to activities. This reduces the chance of having another MTBI with increased and prolonged symptoms.

Your child must be completely symptom free at rest for 1 week before returning to physical activity. At that point, a gradual increase in exercise intensity over a few days is recommended.



NEUROTRAUMA PROGRAM

If symptoms are not resolved in approximately 2 weeks following the injury, further consultation to the Neurotrauma Program is recommended.

Please call 514-412-4400 ext. 22983.

Returning to sports after an MTBI

If your child plays organized sports, have him/her follow these progressive steps before returning to play.

Step 1 Light general conditioning exercises

- Begin with a sports specific warm up
- Do a workout (15-20 minutes) which can include: stationary bicycle, fast paced walking or light jog, rowing or freestyle swimming.

Step 2 General conditioning and sport specific skill work; individually

- Continue with the sport specific warm-up
- Slowly increase intensity and duration of workout (20-30 minutes)
- Begin sport specific skill work within the workout, but no spins, dives or jumps.

Step 3 General conditioning, skill work; individually and with a team-mate

- **No contact**
- Continue with general conditioning (up to 60 minutes). Increase intensity and duration. Begin resistance training.
- Continue with individual skill work.
- May begin general shooting, kicking or passing drills with a partner.
- May start beginner level spins, dives and jumps.

Step 4 General conditioning, skill work and team drills

- Do not play live scrimmages. **No contact.**
- Resume regular conditioning, duration of practice and team drills.
- Increase resistance training and skill work as required.
- Gradually increase skill level of spins, dives and jumps.
- Review team plays with no contact.

Step 5 Full practice with contact

- Participate in a full practice. If it is completed with no symptoms, you are ready to return to competition. Discuss with the coach about getting back in the game.

There should be at least 24 hours between each step. If some symptoms return at any time during this action plan, stop working out. Rest until you are symptom-free for 24 hours. Then return to step 1. If symptoms return or get worse, you are urged to seek medical attention.

MTBI PREVENTION TIPS

- Ensure your child wears the appropriate and proper fitting protective equipment at all times when returning to sports and recreational activities.
- Ensure your child is participating in an activity at the appropriate age and skill level.

TRAUMA

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