Keep It safe!

CONCUSSIONS AND MILD TRAUMATIC BRAIN INJURIES

Concussions and mild traumatic brain injuries (MTBI) are complex processes affecting the brain that are brought about by traumatic biomechanical forces. They result in the appearance of a variety of physical signs and symptoms, impair cognitive functions such as memory and concentration, and sometimes bring about behavioural changes. Most often, concussions do not involve any loss of consciousness. In the case of MTBI, the loss of consciousness may not last long, sometimes less than 30 minutes.

Québec

CONCUSSIONS AND MILD TRAUMATIC BRAIN INJURIES

1. WHAT CAUSES A CONCUSSION?

A concussion may be caused by a blow to the head or a hit to the body that makes the head snap back and forth quickly, as occurs for example when being body checked or when hitting a stationary object or hard surface (ice, ground, goal post) or a moving object (another person's head, a ball, a hockey stick). This causes the brain to shake inside the skull, which damages brain cells.

2. RECOGNIZING A CONCUSSION OR MTBI

Concussions can be associated with a variety of signs and symptoms. Some appear immediately after an injury, while others develop gradually, sometimes minutes or hours after the injury. That's why it is important to always monitor someone suspected of having sustained a concussion or MTBI. Never leave that person alone and, in the case of a child, notify his or her parents.

The first thing to do in case of a concussion is to take the person out of the game and assess the presence and severity of his or her symptoms. Refer to the scale of post-concussive symptoms below.

Post-concussive symptoms

Dizziness	1	2	3	4	5	6
Headache	1	2	3	4	5	6
Nausea	1	2	3	4	5	6
Vomiting	1	2	3	4	5	6
Poor balance	1	2	3	4	5	6
Drowsiness	1	2	3	4	5	6
Sensitivity to light	1	2	3	4	5	6
Sensitivity to noise	1	2	3	4	5	6
Moodiness	1	2	3	4	5	6
Irritability	1	2	3	4	5	6
Feeling sluggish	1	2	3	4	5	6
Feeling slowed down	1	2	3	4	5	6
Feeling dazed or in a fog	1	2	3	4	5	6
Difficulty concentrating	1	2	3	4	5	6
Difficulty remembering	1	2	3	4	5	6
Difficulty falling asleep	1	2	3	4	5	6
Sleeping longer than usual	1	2	3	4	5	6
Sadness	1	2	3	4	5	6
Nervousness or anxiety	1	2	3	4	5	6

No symptoms: 0; moderate symptoms: 2-4; severe symptoms: 5-6.

Note: Ask the person to note the symptoms and their severity.

3. WHAT SHOULD YOU DO IF YOU THINK SOMEONE HAS A CONCUSSION?

Remove the person from play right away. Keep the person out of the game and do not allow him or her to return to play that day, even if the symptoms disappear. Have the person rest. Do not leave the person alone, and monitor his or her signs and

symptoms. Have the person seen by a medical professional with experience in evaluating sports concussions, preferably a physician.

If the person is unconscious, call 911. Do not move the person or remove any equipment, including the helmet.

Different tests can be used to evaluate brain injuries following a concussion, including memory, concentration and balance testing (e.g. SCAT-2, McGill ACE, neuropsychological tests, BESS). The health care professional should have these tests on hand to evaluate the severity of the case and make the appropriate recommendations.

4. WHAT IS THE TREATMENT FOR CONCUSSIONS AND MTBI?

Rest is the only effective treatment for a concussion or MTBI. The purpose of rest is to allow brain cells time to recover fully and function normally again. Although the signs and symptoms of a concussion or MTBI are temporary and usually disappear after seven to ten days, they may last several weeks in some cases.

No medication has been proven effective in treating immediate signs and symptoms of concussions and MTBI. Taking Tylenol (acetaminophen) or Advil or Motrin (ibuprofen) is not recommended and could lead to recurring and persistent headaches if taken in large quantities. Alcohol and other drugs should be avoided at all costs in the days following injury, as these could worsen symptoms.

Rest includes stopping all physical activity, including riding a bicycle. Because the brain needs time to rest, all activities that require concentration, such as reading, playing video games or working on a computer, should also be avoided. If symptoms are severe, the person should be kept home from school. Cognitive and physical activities should be resumed gradually, making sure symptoms do not increase.

5. WHEN CAN PHYSICAL ACTIVITY BE RESUMED?

Physical activity may be resumed gradually once symptoms have completely disappeared. A medical evaluation is recommended before returning to activity or play. Once **ALL** the symptoms have disappeared for at least 24 hours, the person may gradually return to activity or play, following the stepwise approach outlined below.

CONCUSSIONS AND MILD TRAUMATIC BRAIN INJURIES

The person must be asymptomatic for at least 24 hours between each step. If any symptoms recur, the person should go back to the previous step and gradually move on to the next step once he or she has been symptom-free for 24 hours.

Stepwise approach to resuming physical activity

Stepwise approach to resuming physical activity

Step 1 : Complete rest (avoid all physical and cognitive activity).

Step 2 : Light aerobic exercise (e.g. walking or stationary cycling). No resistance training (e.g. weight lifting).

Step 3 : Sport-specific activity (e.g. running, skating).

Step 4 : Drills without body contact. Light resistance training may be added gradually.

Step 5 : Return to full practice, including body contact.

Step 6 : Return to play.

CONCUSSIONS AND MILD TRAUMATIC BRAIN INJURIES

6. WHAT PRECAUTIONS SHOULD BE TAKEN?

A person who has sustained a concussion or MTBI risks a greater chance of having another concussion even if the impact is lighter. Every concussion or MTNI should be evaluated medically. Returning to play too early, that is, before all symptoms subside, may increase symptoms or prolong their duration and may increase the risk of more serious injuries, since physical skills and reaction time are affected. Even though concussions and MTBI are not visible, they must be taken seriously and evaluated by competent professionals, as they can result in long-term problems if not treated appropriately.

Written by: Suzanne Leclerc, M. D., Ph. D., Sports Medicine, Conseil de médecine du sport du Québec (CMSQ)

Available resources:

http://www.aqms.org/page3_1.html (French only)
http://www.thinkfirst.ca/safetyinfo.aspx

CONCUSSIONS AND MILD TRAUMATIC BRAIN INJURIES

CONTACT US

Please contact us if you would like more information or copies of our publications.

By mail: Ministère de l'Éducation, du Loisir et du Sport
Direction de la promotion de la sécurité
100, rue Laviolette, bureau 306
Trois-Rivières (Québec) G9A 5S9

By telephone: 819-371-6033 or **1-800-567-7902**
By fax: 819-371-6992

By e-mail: promotionsecurite@mels.gouv.qc.ca

Web site: www.mels.gouv.qc.ca

Éducation, Loisir et Sport
Québec