

## CONCUSSION INFORMATION SHEET

### WHAT IS A CONCUSSION?

- A concussion is a form of traumatic brain injury caused by abnormal forces transferred to the brain causing impaired brain functioning
- Concussions can occur in people of all ages, in any sport, and during practices or games
- Concussions do not require direct contact to the head or a loss of consciousness (blacking out)

### WHAT ARE THE SYMPTOMS OF CONCUSSION?

Symptoms of concussion may vary from student to student. Some may experience symptoms immediately following a collision, others may not experience symptoms for hours or days after the traumatic event. Many symptoms are subtle and may not be recognized by some students. Children in particular may not be able to describe the symptoms they are experiencing. Common concussion symptoms include:

- Headaches or head pressure
- Dizziness
- Nausea
- Blurred vision
- Sensitivity to light or sound
- Feeling off balance
- Ringing in the ears
- Seeing “stars”
- Confusion
- Fogginess of feeling “out of it”
- Irritability or easily angered
- Difficulty concentrating
- Feeling detached or “not right”
- Difficulty remembering
- Fatigue or tiredness
- Difficulty watching TV
- Difficulty working on a computer
- Neck pain or stiffness
- Feeling anxious
- Feeling sad or depressed

### HOW LONG DOES IT TAKE TO RECOVER FROM A CONCUSSION?

Recovery from a concussion varies from student to student. In most children, symptoms will resolve within 2-3 weeks. Students that may take longer to recover include females, and those with previous concussions, or a history of migraine headache, learning disabilities, or attention-deficit disorder.

### WHAT TYPES OF ACTIVITIES MAY WORSEN CONCUSSION SYMPTOMS?

In order to recover from a concussion, students require adequate amounts of physical and mental rest. Because every concussion is different, activities that worsen concussion symptoms often vary. Physical activities that may worsen concussion symptoms include walking long distances, running, lifting heavy objects and playing with siblings or classmates. Mental activities that may worsen symptoms include talking or texting on the phone, working on a computer, watching TV, reading or schoolwork. Certain environments may also exacerbate concussion symptoms, including malls, grocery stores, sports arenas, school hallways, cafeterias, or gymnasiums. During recovery from a concussion, it is important that students modify their daily activities in order to minimize concussion symptoms.

### WHO SHOULD STUDENTS TELL AFTER BEING DIAGNOSED WITH A CONCUSSION?

Although it is important for students to protect their personal health information, it is also important that certain people know about a student's concussion so they can help monitor their health and make appropriate accommodations to help them recover as soon as possible. In addition to telling their parents, it is important that students inform teachers, coaches, and bosses that their participation in school, sports, and work may be temporarily limited in order to minimize concussion symptoms. It is important for children and adolescents to partner with parents, teachers, and coaches to allow a gradual return to full school and sports participation.

**WHAT CAN STUDENTS DO TO HELP RECOVER FROM A CONCUSSION?**

Since a concussion is a form of traumatic brain injury, it is important that students modify their lifestyle and activities to promote brain recovery. This includes:

- ✓ getting adequate amounts of physical and mental rest,
- ✓ getting adequate amounts of sleep,
- ✓ getting adequate nutrition and not skipping meals,
- ✓ Keeping themselves well hydrated,
- ✓ Avoiding activities that exacerbate concussion symptoms,
- ✓ Avoiding situations that can be stressful,
- ✓ Strictly avoiding alcohol and recreational drugs,
- ✓ Strictly avoiding situations that can place the student at risk of future head injuries or concussions.

**AFTER A CONCUSSION, IS THE STUDENT AT RISK OF FUTURE CONCUSSIONS?**

The vast majority of students who suffer a single concussion recover completely and go on to live normal lives. However, students who have suffered even one concussion are at risk of suffering further concussions that may occur with less force and may require longer periods of time to recover. Multiple concussions can be a risk factor for deterioration in school performance, depression, and anxiety; it is therefore important that children avoid concussions and report them immediately when they do happen. Students who return to contact sports before they have recovered from a concussion are at risk of severe traumatic brain injury that can result in long-term disability and potentially death.

**WHEN CAN A STUDENT-ATHLETE RETURN TO SPORTS OR GYM CLASS?**

International expert guidelines<sup>1</sup> suggest that all athletes with a concussion progress through a graduated Return To Play (RTP) protocol designed to expose students to increasing levels of physical activity while monitoring their concussion symptoms. Using this RTP protocol, students should be asymptomatic for 24 hours at each stage before progressing to the next stage. If a student develops post-concussion symptoms at one stage, they are instructed to drop down to the previous stage and try to progress again after a full 24-hour rest period has passed. The graduated RTP protocol is outlined below:

Rehabilitation Stage	Functional Exercise at Each Rehabilitation Level	Objective at Each Stage
1. No activity	Symptom limited physical and mental rest	Recovery
2. Light aerobic activity	Walking, swimming or stationary bike keeping intensity <70% maximum permitted heart rate	Increase HR
3. Sport-specific exercise	Skating drills in hockey, running drills in soccer. No head impact activities	Add movement
4. Non-contact training drills	Progression to more complex training drills, eg passing drills in football and ice hockey	Exercise, coordination and mental load
5. Full-contact practice	Following medical clearance participate in normal training activities	Restore confidence and assess functional skills by coaching staff
6. Return to Play	Normal game play	

<sup>1</sup>McCorry et al. Consensus statement on concussion in sport: the 4<sup>th</sup> international conference on concussion in sport held in Zurich, November 2012. (2013) Br J Sports Med 47:250-258.

Once advancing through Stage 4 of the graduated RTP protocol, the student should be medically cleared by a physician (medical doctor) for return to full-contact sports participation by a physician. If the student experiences any recurrent symptoms once returned to play, they should immediately notify their parents, coaches, and teachers, and seek medical attention from a physician.

**HOW CAN I LEARN MORE ABOUT HOW TO PREVENT CONCUSSIONS?**

In order to prevent sport concussions, athletes should wear proper equipment (helmets), practice good sportsmanship, and respect other athletes at all times. For more information, please visit Parachute Canada at <http://www.parachutecanada.org/injury-topics/topic/C9> or Hockey Canada at <http://www.hockeycanada.ca/en-ca/Hockey-Programs/Safety/Concussions.aspx>.

**HOW DOES A CONCUSSION AFFECT SCHOOL PERFORMANCE?**

While the concept of restricting physical activity is often well understood by concussion patients, parents, and teachers, monitoring cognitive activity is more challenging. School-related activities that can worsen concussion symptoms include; working on a computer, reading, note taking, band practice, studying, and taking tests. In addition, certain school-related environments such as classrooms, hallways, cafeterias and gymnasiums may also exacerbate symptoms. Students with a concussion often miss significant amounts of time from school, leaving the student behind in their schoolwork and isolated from their peers - both of which generate added stress during an important time of recovery. In order to alleviate this stress, many students return to school prematurely and attempt to resume a full school schedule despite ongoing symptoms. These students are not only at risk of deterioration in their academic performance, but suffer profound setbacks in their concussion recovery.

**HOW DOES THE PAN AM CONCUSSION PROGRAM HELP STUDENTS RETURN TO SCHOOL ACTIVITIES?**

In order to help guide students, parents, and teachers through the concussion recovery period and allow a safe and gradual return to full school participation, the Pan Am Concussion Program has devised a comprehensive *Return-to-Learn Program* for all pediatric students participating in school. Specifically, the *Return-to-Learn Program* aims to inform school administrators, teachers, and educators of the student's diagnosis, and of the medical team's plan for promoting optimal recovery of the student's concussion. Recommendations for creating partnerships between the student, parents, and teachers to promote maximal school participation while optimizing concussion recovery, are provided. The Pan Am Concussion Program also offers specialized *Return-to-Learn* resources for students with prolonged symptoms. (those lasting greater than 1 month).

**WHAT ARE THE COMPONENTS OF THE RETURN TO LEARN PROGRAM?**

Each student evaluated by the Pan Am Concussion Program will receive two important documents; a Doctor's Letter and an Academic Accommodation Form. The *Doctor's Letter* confirms that the student has been evaluated by the Pan Am Concussion Program, provides recommendations regarding initial school and sports participation, and defines the medical care plan for the student. The *Academic Accommodation Form* provides helpful general and specific suggestions or accommodations that the school can provide to allow the student to participate in school more comfortably and at a level that minimizes concussion symptoms.

**AS A TEACHER, WHAT CAN I EXPECT FROM MY STUDENT FOLLOWING A CONCUSSION?**

With the implementation of our *Return-to-Learn Program*, it is anticipated that the majority (80%) of children and adolescents with a concussion will return to full school and sports activities within 1-4 weeks after their concussion. Students that remain symptomatic following a concussion for greater than 4 weeks, termed post-concussion syndrome (PCS), are at risk of developing further impairments in physical, psychological, and social functioning, including chronic headaches, aerobic de-conditioning, mood disorders, social isolation, bullying, and poor academic performance. Students with PCS followed at the Pan Am Concussion Program are candidates for internal physician referral to our clinical neuropsychologist. This resource can provide a more comprehensive assessment of cognitive functioning and act as a liaison between our medical team, the student, and the school, to maximize academic accommodations for these students.

Pan Am Concussion Program is committed to providing comprehensive, multi-disciplinary care for pediatric concussion patients in Manitoba. If you have any further questions about concussion, please visit our website at [www.panamclinic.org](http://www.panamclinic.org) or call us at 204-927-2766.