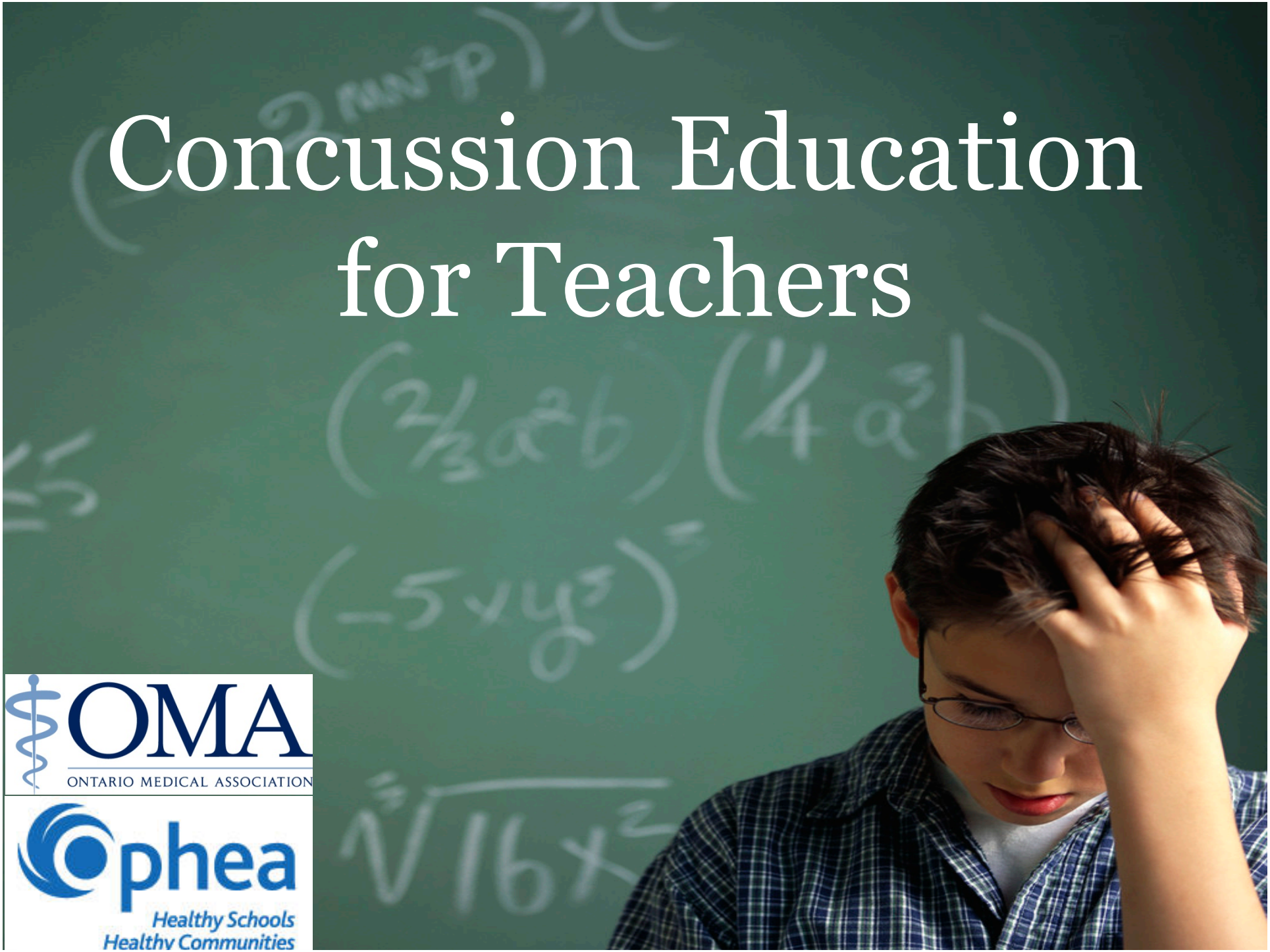
Concussion Education for Teachers



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- Content of some of the slides in this presentation were adapted from the September 2014 concussion protocol in the Ontario Physical Educations Safety Guidelines (developed and managed by Ophea) an online resource available at http://safety.ophea.net

- Content developed by the ***Sport & Exercise Medicine Section of the Ontario Medical Association (OMA)*** and from education provided by ***Parachute Canada*** (formly ***ThinkFirst)***.

Current Guidelines

- The Ontario Physical Health & Education Safety Guidelines (managed by Ophea)
  - Minimum standards that must be met by teachers/ coaches when addressing the safety components of the curricular, intramural & interschool programs .
- Important to note that the Safety Guidelines are updated on an annual basis, always check the site for the most up to date information

Parachute
PREVENTING INJURIES. SAVING LIVES.

Quick Concussion Facts

- Since 2003-04, emergency room visits for concussions have increased by 58%.
- In 2010-11, 19880 Ontario residents visited an emergency room for a concussion, with children up to age 18 accounting for nearly 38% of those visits.

Duty of Care:
For the Safety of Students

- "Teachers are to ensure that all reasonable safety procedures are carried out in courses and activities for which the teacher is responsible"
  - Education Act – Regulations 298 S20 – Duties of Teachers
- What are schools/boards doing to prevent, recognize & manage concussions during school activities?

Duty of Care: For the Safety of Students

- Teachers have a duty of care and legal obligation to provide safe programming, facilities and equipment for courses and activities they teach or coach as well as provide access to medical care for treatment of injuries.
- Need to implement a concussion policy to ensure this obligation is met.

What Teachers Need to Know…

- What is a concussion?
- How a teacher/coach can help to prevent/minimize the risk of concussion
- How to recognize the signs & symptoms of a concussion?
- What are the potential consequences of concussion on the future well being of a student?
- What should you do if you think a student has suffered a concussion?
- What can you do in the classroom to accommodate for a concussed student?

“How a concussion is handled in the minutes, hours and days after a concussion can significantly influence the extent of damage from a concussion”.

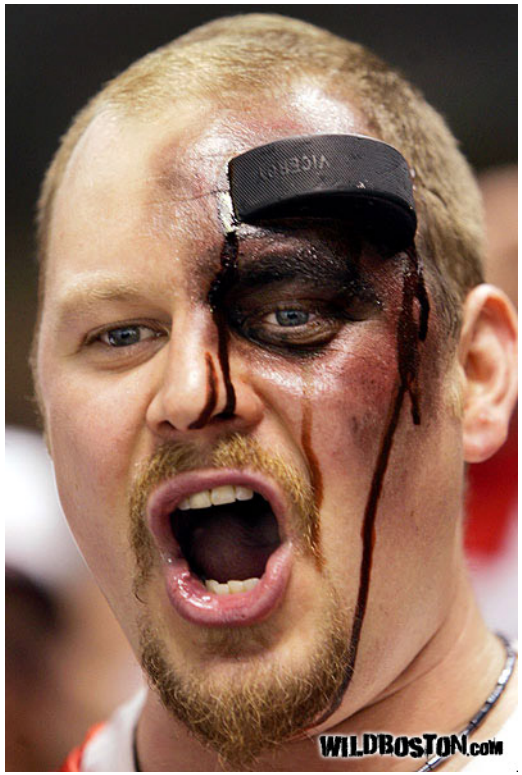
Quote from Dr. Charles Tator, Universtiy of Toronto Hospital and Founder of Thinkfirst Canada

thinkfirst

pensezd'abord

CANADA

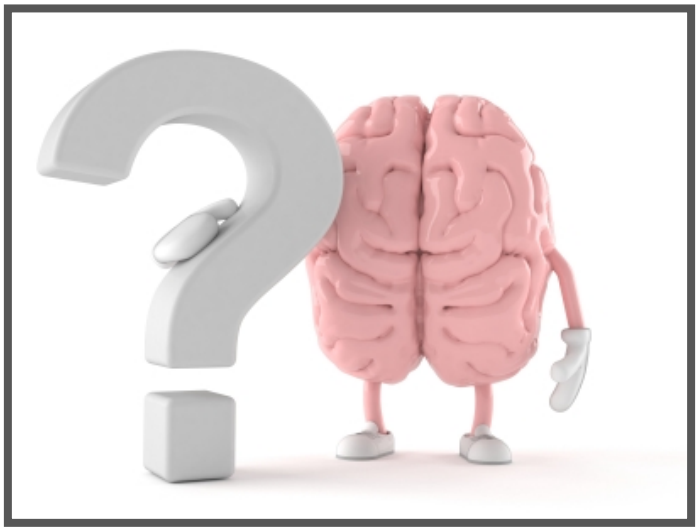
What is a Concussion?



- **Mild traumatic brain injury** resulting in immediate and temporary alteration of mental functioning.
- May be caused by direct blow to head, face, neck or body with an impulsive force transmitted to the head.
- Loss of consciousness **NOT** necessary.
- Functional injury → no structural damage to brain (**No** bleed or bruise).
- Recovery usually within days to weeks.

What is a Concussion?

- Medical field abandoned the grading systems of concussions in 2001.
- Majority of concussions (80-90%) resolve within 2-3 weeks.
  - May be longer in children & adolescents with developing brains.
- Repetitive concussions can have major consequences on the brain.
- A genetic predisposition for sustaining a concussion has been suspected, but is unproven.



The Young Brain

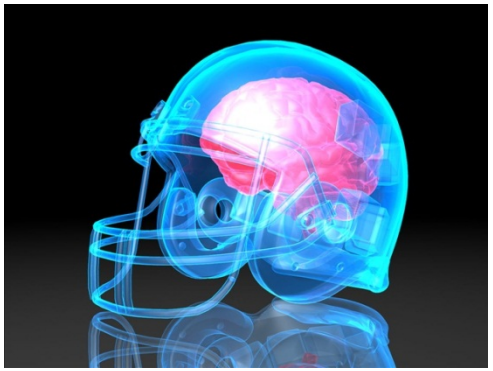
- Research suggests that the young, developing brain is more vulnerable to injury.
- Emphasis on prevention to protect our youth & prevent long-term deficits.

Prevention: Instruction/Training for Student

- Teacher/coach can help to minimize the risks of a concussion in the activity/sport by:
  - Safe play on the playground
  - Teaching the correct sport training techniques.
  - Having students demonstrate and practice correct body contact techniques.
  - Ensuring approved helmets and head gear are properly worn with chin straps done up in high risk activities.
  - Instructing students to follow the rules the activity/game, respect their opponent and practice fair play.

Protective Equipment

- Check that the protective equipment is approved by a recognized Equipment Standards Association.
- Ensure equipment is inspected on a regular basis, maintained, repaired and replaced when appropriate.
- Helmets are not designed to prevent concussion → they are designed to prevent skull fracture and facial injuries.
- No such thing as a concussion proof helmet!

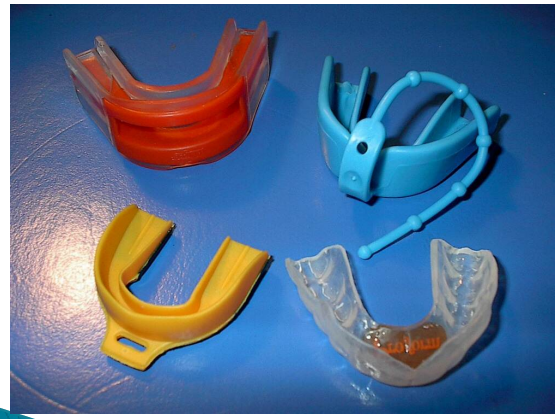


"How many times have I told you to wear your helmet?"

"I liked recess a lot better before the safety helmets."

Protective Equipment

- No scientific evidence that mouth guards prevent concussions but they do prevent dental fractures and jaw fractures.
- No proven protection from concussion using rugby scrum caps or soccer head pads.



Consensus Statements on Concussion in Sport

Statements based on international conferences among leading concussion experts from around the globe:

- 1st Vienna in 2001
- 2nd Prague in 2004
- 3rd Zurich 2008
- 4th Zurich 2012

Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012

Paul McCrory,[1] Willem H Meeuwisse,[2,3] Mark Aubry,[4,5,6] Bob Cantu,[7,8] Jiří Dvořák,[9,10,11] Ruben J Echemendia,[12,13] Lars Engebretsen,[14,15,16] Karen Johnston,[17,18] Jeffrey S Kutcher,[19] Martin Raftery,[20] Allen Sills,[21] Brian W Benson,[22,23,24] Gavin A Davis,[25] Richard G Ellenbogen,[26,27] Kevin Guskiewicz,[28] Stanley A Herring,[29,30] Grant L Iverson,[31] Barry D Jordan,[32,33,34] James Kissick,[6,35,36,37] Michael McCrea,[38] Andrew S McIntosh,[39,40,41] David Maddocks,[42] Michael Makdissi,[43,44] Laura Purcell,[45,46] Margot Putukian,[47,48] Kathryn Schneider,[49] Charles H Tator,[50,51,52,53] Michael Turner[54]

Zurich 2012

Recognizing the Signs & Symptoms of Concussion

- Despite best attempts at prevention, concussions will still occur.
- Teachers are not expected to diagnose a concussion → Only a physician/nurse practitioner can diagnose the condition.
- Teachers can offer great assistance to help ensure recovery is successful & reduce likelihood of devastating event.
  - Recognize signs and symptoms.
  - Take the appropriate initial responses.
  - Implement the proper interventions.
  - Ensure the initial management is performed.

Recognizing the Signs & Symptoms of a Concussion

- Signs and symptoms can be found in the Ontario Physical Education Safety Guidelines:
  - Curricular/Interschool/Intermural modules – Appendix C1
- Younger children may voice non-specific complaints & behavioural changes (e.g. Tummy ache, grumpy).

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Common Signs/Symptoms of a Concussion

- Headache/Dizziness
- Neck Pain
- Amnesia
- Feels “dinged” or “dazed”
- Sees stars or flashing lights
- Ringing in the ears
- Sleepiness/fatigue/low energy
- Change in vision
- Slurred speech
- Stomach ache nausea/ vomiting
- sensitivity to light and sound

Student complaints after a collision/head injury

- Poor coordination or balance, moves clumsily
- Blank stare/glassy eyed
- Confusion
- Slow to answer questions or follow directions
- Easily distracted
- Difficulty concentration
- Irritability
- Inappropriate emotions (laughing, crying, anger)
- Poor memory
- Changes in sleep pattern
- Cognitive changes

Other problems after a collision/head injury

“Motivation to win, the wish to advance in their sport and earning acceptance of their teammates often outweigh the need to play it safe.”

Dr. Michael Cusimano- Neurosurgeon at St. Michael’s Hospital, Toronto and professor of neurosurgery at The University of Toronto

Under reporting of symptoms

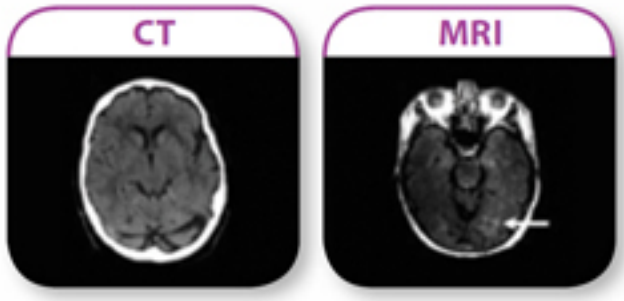
- Barriers include:
  - Excess competitiveness
  - Fear of viewing injuries as a weakness
  - Fear of being removed from the competition
  - Fear of letting down/disappointing the team
- Student/Athlete may not report the symptoms as they didn't recognize it as a concussion!

Prolonged Concussion Symptoms

- Emotional Difficulties (Depression, Anxiety)
- Difficulty sleeping
- Sleeping more than usual
- Sensitivity to light
- Sensitivity to noise
- Poor grades/test scores
- Poor attention & concentration
- Reduced speed of information-processing
- Impaired memory & learning
- Inability to exercise

Diagnosis of Concussion

- Often under-recognized, under-diagnosed and under-reported!!
- Schools/Boards should insist on an evaluation by a physician within 1-2 days following a concussion.
  - Preferably the same day
- The diagnosis of a concussion is made CLINICALLY by a physician (or Nurse Practitioner)!

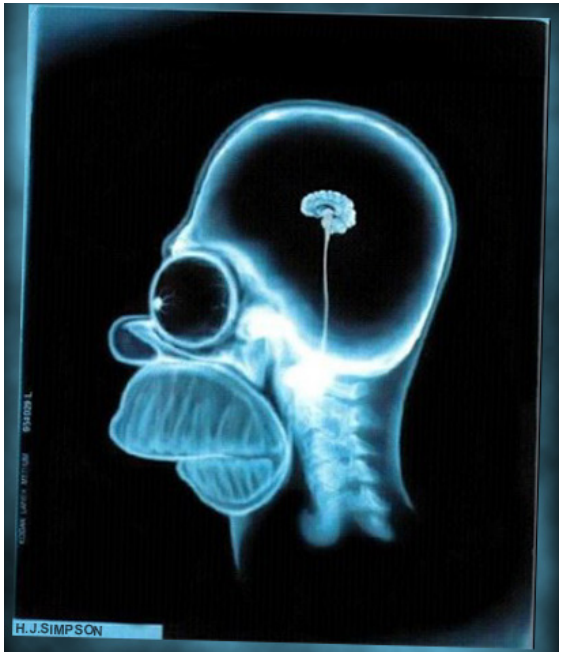


Can You Diagnose a Concussion on a CT Scan or MRI?

NO!

When Imaging of the Head May be Considered…

- Prolonged LOC (>1 min)
- Focal neurologic deficit
- Worsening of symptoms
- Deterioration in conscious state



Sport & Exercise Medicine Physicians

- CASEM certified Sport & Exercise Medicine Physicians are experts in the field of concussion management.
- www.casem-acmse.org
- Local Sport & Exercise Medicine Physicians in Ontario are great resources to assist Family Physicians in managing a student who has suffered a concussion and formulate RTP/RTL plans.
- To find one in your area go to www.sportsandexercisemedicine.ca

Implications of Concussion

- Second impact syndrome: results from a second concussion when the individual is still symptomatic from the first.
- Although rare, devastating consequences can occur, especially in athletes <21yr.
- Catastrophic increase in intracranial pressure causing paralysis, massive brain swelling, herniation, & **Death.**

Implications of Concussion

Post Concussion Syndrome

Implications of Concussion

- Post Concussion Syndrome: risk of prolonged or permanent symptoms if premature return to sport/physical activity or if a 2nd concussion occurs before full recovery.
  - Decreased processing speed
  - Short-term memory impairment
  - Concentration deficit
  - Irritability/Depression
  - Fatigue/sleep disturbance
  - Academic difficulties

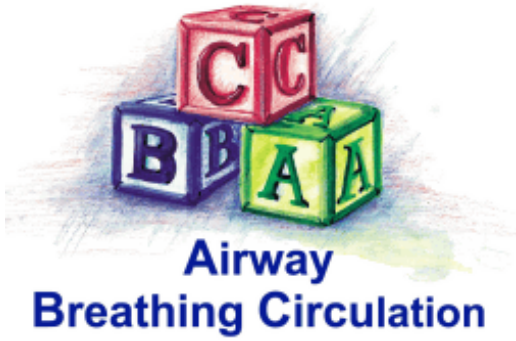
Implications of Concussion

- Chronic Traumatic Encephalopathy (CTE) or Dementia Pugilistica (AKA “punch drunk syndrome”): Progressive degenerative disease of the brain found in people with a history of repetitive brain trauma.

- First described in boxers.
- Causes intellectual decline, balance impairment, slurred speech, tremor.

Initial Response to a Suspected Concussion - LOC

- For a student who is unconscious or has experienced a momentary loss of consciousness, the teacher should:
  - Stop the activity immediately.
  - Initiate the Emergency Action Plan.
  - Call an ambulance 911.
  - Assume there is a possible cervical spine injury and do not move the student.
  - Stay with the student and monitor for signs of deterioration until EMS arrive.
  - Contact parents as soon as reasonably possible.
  - Monitor & document any changes.
  - Do not administer any medications unless there is a known condition



Initial Response to a Suspected Concussion – no LOC

- If you observe a collision causing concussion symptoms or student reports symptoms with NO loss of consciousness, the teacher should:
  - Stop the activity immediately.
  - Initiate the Emergency Action Plan
  - When the student can be safely moved – remove from game
  - Assess student using e.g. "Sample Tool to Identify a Suspected Concussion" (Appendix C-2).
  - If concussion suspected, student should **NOT** be allowed to return to play.
  - Follow school procedures for contacting guardian.
  - Monitor the student closely for any changes (physical , cognitive or emotional)
  - Do not administer medication
  - Do not leave the student alone after the injury.
  - Ensure student is evaluated by a medical doctor.

Appendix C-2

Sample Tool to Identify a Suspected Concussion[1]

This sample tool is a quick reference, to be completed by teachers, to help identify a suspected concussion and to communicate this information to parent/guardian.

Identification of Suspected Concussion
Following a blow to the head, face or neck, or a blow to the body that transmits a force to the head, a concussion must be suspected in the presence of any one or more of the signs or symptoms outlined in the chart below and/or the failure of the Quick Memory Function Assessment.

1. Check appropriate box

An incident occurred involving _____ (student name) on _____ (date). He/she was observed for signs and symptoms of a concussion.

- ☐ No signs or symptoms described below were noted at the time. *Note: Continued monitoring of the student is important as signs and symptoms of a concussion may appear hours or days later (refer to #4 below).*
- ☐ The following signs were observed or symptoms reported:

Signs and Symptoms of Suspected Concussion	
Possible Signs Observed *A sign is something that is observed by another person (e.g., parent/guardian, teacher, coach, supervisor, peer).*	**Possible Symptoms Reported** *A symptom is something the student will feel/report.*
Physical ☐ vomiting ☐ slurred speech ☐ slowed reaction time ☐ poor coordination or balance ☐ blank stare/glassy-eyed/dazed or vacant look ☐ decreased playing ability ☐ loss of consciousness or lack of responsiveness ☐ lying motionless on the ground or slow to get up ☐ amnesia ☐ seizure or convulsion ☐ grabbing or clutching of head **Cognitive** ☐ difficulty concentrating ☐ easily distracted ☐ general confusion ☐ cannot remember things that happened before and after the injury *(see Quick Memory Function Assessment on page 2)* ☐ does not know time, date, place, class, type of activity in which he/she was participating ☐ slowed reaction time (e.g., answering questions or following directions) **Emotional/Behavioural** ☐ strange or inappropriate emotions (e.g., laughing, crying, getting angry easily) **Other** ☐ _____	**Physical** ☐ headache ☐ pressure in head ☐ neck pain ☐ feeling off/not right ☐ ringing in the ears ☐ seeing double or blurry/loss of vision ☐ seeing stars, flashing lights ☐ pain at physical site of injury ☐ nausea/stomach ache/pain ☐ balance problems or dizziness ☐ fatigue or feeling tired ☐ sensitivity to light or noise **Cognitive** ☐ difficulty concentrating or remembering ☐ slowed down, fatigue or low energy ☐ dazed or in a fog **Emotional/Behavioural** ☐ irritable, sad, more emotional than usual ☐ nervous, anxious, depressed **Other** ☐ _____

If any observed signs or symptoms worsen, call 911.

2. Perform Quick Memory Function Assessment

Ask the student the following questions, recording the answers below. Failure to answer any one of these questions correctly may indicate a concussion:

- What room are we in right now? *Answer:* _____
- What activity/sport/game are we playing now? *Answer:* _____
- What field are we playing on today? *Answer:* _____
- What part of the day is it? *Answer:* _____
- What is the name of your teacher/coach? *Answer:* _____
- What school do you go to? *Answer:* _____

3. Action to be Taken

If there are any signs observed or symptoms reported, or if the student fails to answer any of the above questions correctly:

- a concussion should be suspected;
- the student must be immediately removed from play and must not be allowed to return to play that day even if the student states that he/she is feeling better; and
- the student must not leave the premises without parent/guardian (or emergency contact) supervision.

In all cases of a suspected concussion, the student must be examined by a medical doctor or nurse practitioner for diagnosis and must follow "Appendix C-1 - Concussion Protocol: Prevention, Identification and Management Procedures".

4. Continued Monitoring by Parent/Guardian

- Students should be monitored for 24 - 48 hours following the incident as signs and symptoms can appear immediately after the injury or may take hours or days to emerge.
- If any signs or symptoms emerge, the student needs to be examined by a medical doctor or nurse practitioner as soon as possible that day.

5. Teacher name: _____

Teacher signature: _____ Date: _____

This completed form must be copied, with the original filed as per school board policy and the copy provided to parent/guardian.

[1] *Adapted from McCrory et. al, Consensus Statement on Concussion in Sport. Br J Sports Med 47 (5), 2013*

Pocket CONCUSSION RECOGNITION TOOL™

To help identify concussion in children, youth and adults

RECOGNIZE & REMOVE

Concussion should be suspected **if one or more** of the following visible clues, signs, symptoms or errors in memory questions are present.

1. Visible clues of suspected concussion

Any one or more of the following visual clues can indicate a possible concussion:

Loss of consciousness or responsiveness
Lying motionless on ground/Slow to get up
Unsteady on feet / Balance problems or falling over/Incoordination
Grabbing/Clutching of head
Dazed, blank or vacant look
Confused/Not aware of plays or events

2. Signs and symptoms of suspected concussion

Presence of any one or more of the following signs & symptoms may suggest a concussion:

- Loss of consciousness
- Seizure or convulsion
- Balance problems
- Nausea or vomiting
- Drowsiness
- More emotional
- Irritability
- Sadness
- Fatigue or low energy
- Nervous or anxious
- "Don't feel right"
- Difficulty remembering
- Headache
- Dizziness
- Confusion
- Feeling slowed down
- "Pressure in head"
- Blurred vision
- Sensitivity to light
- Amnesia
- Feeling like "in a fog"
- Neck Pain
- Sensitivity to noise
- Difficulty concentrating

3. Memory function

Failure to answer any of these questions correctly may suggest a concussion.

"What venue are we at today?"
"Which half is it now?"
"Who scored last in this game?"
"What team did you play last week/game?"
"Did your team win the last game?"

Any athlete with a suspected concussion should be IMMEDIATELY REMOVED FROM PLAY, and should not be returned to activity until they are assessed medically. Athletes with a suspected concussion should not be left alone and should not drive a motor vehicle.

It is recommended that, in all cases of suspected concussion, the player is referred to a medical professional for diagnosis and guidance as well as return to play decisions, even if the symptoms resolve.

RED FLAGS

If ANY of the following are reported then the player should be safely and immediately removed from the field. If no qualified medical professional is available, consider transporting by ambulance for urgent medical assessment:

- Athlete complains of neck pain
- Increasing confusion or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness or tingling/burning in arms or legs
- Deteriorating conscious state
- Severe or increasing headache
- Unusual behaviour change
- Double vision

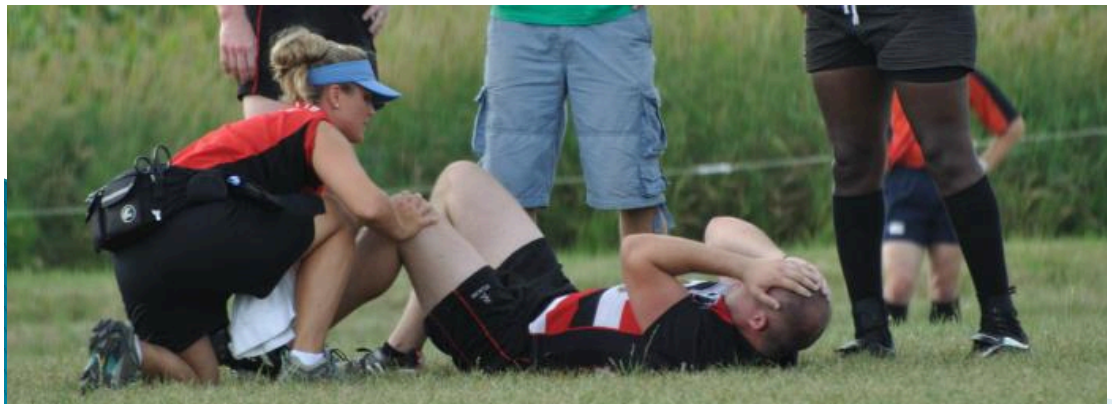
Remember:

- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Do not attempt to move the player (other than required for airway support) unless trained to so do
- Do not remove helmet (if present) unless trained to do so.

from McCrory et. al, Consensus Statement on Concussion in Sport. Br J Sports Med 47 (5), 2013

If after an injury, the teacher/ coach is unsure if a student should participate, remember…

When in doubt, sit them out!



Communication with Parents

- Inform Parent/Guardian of suspected concussion and advise to be evaluated by a physician or nurse practitioner as soon as possible.
- Provide parents/guardian with a documentation form e.g., ***Sample Documentation for a Diagnosed Concussion – Return to Learn/ Return to Physical Activity Plan*** (Appendix C4) to complete when the student can return to play/learn.

- Refer them to Parachute Canada/Thinkfirst Sports Related Concussion Guidelines for Parents.
  www.thinkfirst.ca/programs/concussion_resources.aspx

Further Communication with Parents

- Parent/Guardian needs to inform the school principal of the results of the medical examination
  - If **NO** concussion suspected, Parent/Guardian must be:
    - Provided "Appendix C2 – Sample Tool to Identify a Suspected Concussion"
    - Informed that signs and symptoms may not appear immediately and may take hours or days to emerge
    - Informed that the student should be monitored for 24-48 hours following the incident.
    - Informed that if any signs or symptoms emerge, the student needs to be examined by a medical doctor or nurse practitioner as soon as possible that day.

Further Communication with Parents

- Parents need to inform the school principal of the results of the medical examination
  - If a concussion is suspected by the physician or nurse practitioner– student will follow an individualized Return to Learn/Return to Play plan

Communication with the Staff

- Student will not return to school until the documentation e.g., ***Sample Documentation of Medical Examination (Appendix C3)*** is returned with a determination from a physician or nurse practitioner whether the student has a concussion.
- Follow school/Board developed procedures for informing all school staff of the suspected concussion of the student.

Documentation of Medical Examination

Appendix C-3

Sample Documentation of Medical Examination

This form to be provided to all students suspected of having a concussion. For more information see "Appendix C-1 - Concussion Protocol: Prevention, Identification and Management Procedures"

_____ (student name) sustained a suspected concussion on _____ (date). As a result, this student must be seen by a medical doctor or nurse practitioner. Prior to returning to school, the parent/guardian must inform the school principal of the results of the medical examination by completing the following:

Results of Medical Examination

☐ My child/ward has been examined and **no concussion** has been diagnosed and therefore may resume full participation in learning and physical activity with no restrictions.

☐ My child/ward has been examined and **a concussion has been diagnosed** and therefore must begin a medically supervised, individualized and gradual Return to Learn/Return to Physical Activity Plan.

Parent/Guardian signature: _____

Date: _____

Comments:

_____

_____

_____

Documentation of Medical Examination

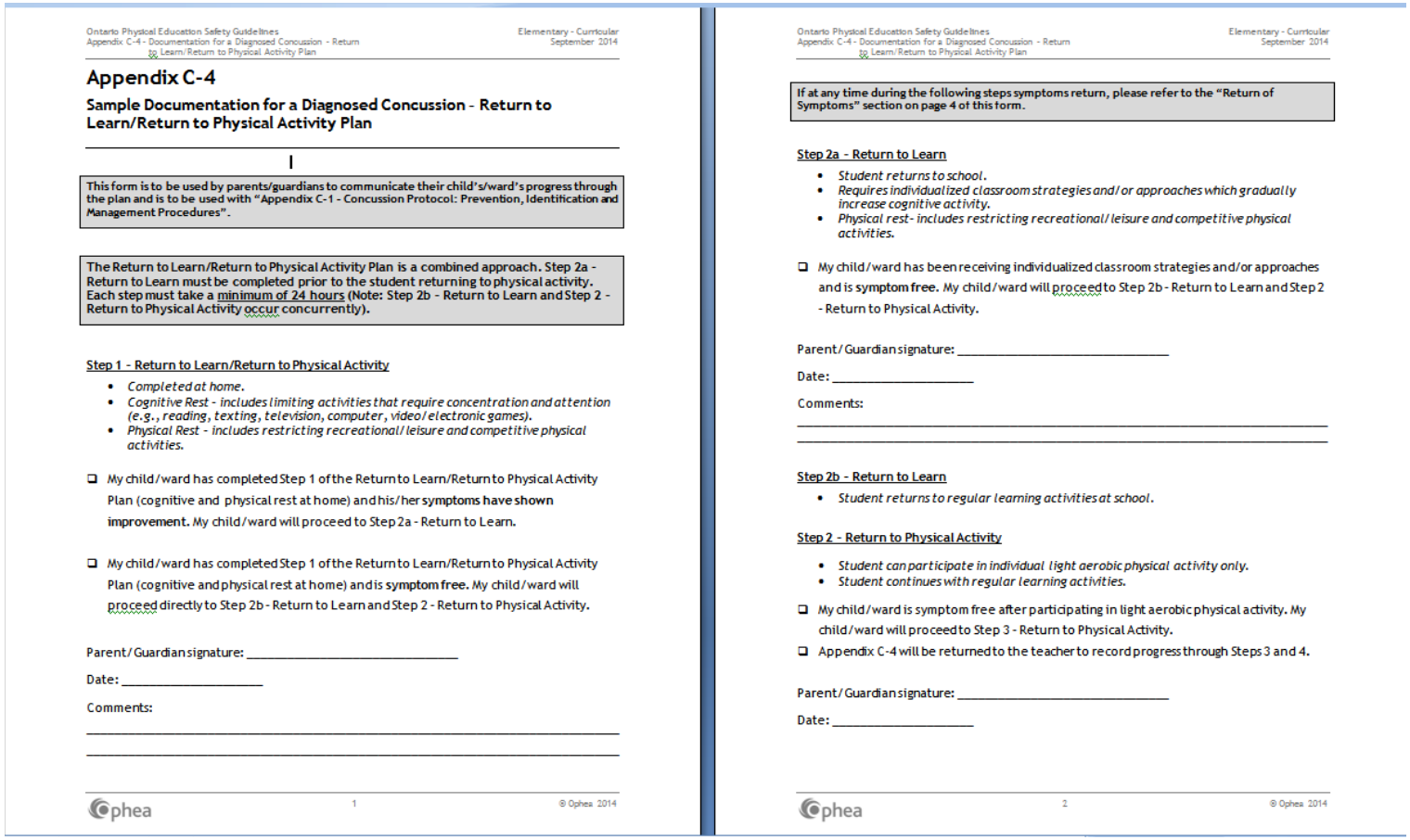
- **NO CONCUSSION** as diagnosed by a physician:
  - Parent/Guardian checks the box indication **"no concussion has been diagnosed"**
  - Parent/Guardian signs & dates the form.
  - Student returns the completed form to the appropriate school personnel.
  - The student's activity providers at the school are informed the student is cleared to participate in all activities.

Documentation of Medical Examination

- **CONCUSSION** is diagnosed by a physician or nurse practitioner:
  - Parent/Guardian checks the box indicating that **"a concussion has been diagnosed"**
  - Parent/Guardian signs & dates the form.
  - Student provides completed form, e.g., ***Sample Documentation of Medical Examination (Appendix C3)*** to the appropriate school personnel, copy is made and placed in the student's OSR.
  - The student must follow a medically supervised, individualized **Return to Learn/Return to Physical Activity Plan** as outlined in Appendix C4.
  - The school is informed of the concussion
  - No cognitive or physical activity and no school attendance until after the student has successfully completed Step 1 and the completed form is returned.

Documentation for a Diagnosed Concussion

Return to Learn/Return to Physical Activity Plan



Appendix C-4

Sample Documentation for a Diagnosed Concussion - Return to Learn/Return to Physical Activity Plan

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This form is to be used by parents/guardians to communicate their child's/ward's progress through the plan and is to be used with "Appendix C-1 - Concussion Protocol: Prevention, Identification and Management Procedures".

The Return to Learn/Return to Physical Activity Plan is a combined approach. Step 2a - Return to Learn must be completed prior to the student returning to physical activity. Each step must take a minimum of 24 hours (Note: Step 2b - Return to Learn and Step 2 - Return to Physical Activity occur concurrently).

Step 1 - Return to Learn/Return to Physical Activity

- *Completed at home.*
- *Cognitive Rest - includes limiting activities that require concentration and attention (e.g., reading, texting, television, computer, video/electronic games).*
- *Physical Rest - includes restricting recreational/leisure and competitive physical activities.*

❑ My child/ward has completed Step 1 of the Return to Learn/Return to Physical Activity Plan (cognitive and physical rest at home) and his/her **symptoms have shown improvement.** My child/ward will proceed to Step 2a - Return to Learn.

❑ My child/ward has completed Step 1 of the Return to Learn/Return to Physical Activity Plan (cognitive and physical rest at home) and is **symptom free.** My child/ward will proceed directly to Step 2b - Return to Learn and Step 2 - Return to Physical Activity.

Parent/Guardian signature: _____

Date: _____

Comments:

_____

_____

Ontario Physical Education Safety Guidelines
Appendix C-4 - Documentation for a Diagnosed Concussion - Return to Learn/Return to Physical Activity Plan
Elementary - Curriculum
September 2014

If at any time during the following steps symptoms return, please refer to the "Return of Symptoms" section on page 4 of this form.

Step 2a - Return to Learn

- *Student returns to school.*
- *Requires individualized classroom strategies and/or approaches which gradually increase cognitive activity.*
- *Physical rest- includes restricting recreational/leisure and competitive physical activities.*

❑ My child/ward has been receiving individualized classroom strategies and/or approaches and is **symptom free.** My child/ward will proceed to Step 2b - Return to Learn and Step 2 - Return to Physical Activity.

Parent/Guardian signature: _____

Date: _____

Comments:

_____

_____

Step 2b - Return to Learn

- *Student returns to regular learning activities at school.*

Step 2 - Return to Physical Activity

- *Student can participate in individual light aerobic physical activity only.*
- *Student continues with regular learning activities.*

❑ My child/ward is symptom free after participating in light aerobic physical activity. My child/ward will proceed to Step 3 - Return to Physical Activity.

❑ Appendix C-4 will be returned to the teacher to record progress through Steps 3 and 4.

Parent/Guardian signature: _____

Date: _____

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Documentation for a Diagnosed Concussion
Return to Learn/Return to Physical Activity Plan

Comments:

_____

_____

Step 3 - Return to Physical Activity

- *Student may begin individual sport-specific physical activity only.*

Step 4 - Return to Physical Activity

- *Student may begin activities where there is no body contact (e.g., dance, badminton); light resistance/weight training; non-contact practice; and non-contact sport-specific drills.*

❑ Student has successfully completed Steps 3 and 4 and is symptom free.

❑ Appendix C-4 will be returned to parent/guardian to obtain medical doctor/nurse practitioner diagnosis and signature.

Teacher signature: _____

Medical Examination

❑ I, _____ (medical doctor/nurse practitioner name) have examined _____ (student name) and confirm he/she continues to be symptom free and is able to return to regular physical education class/intramural activities/interschool activities in non-contact sports and full training/practices for contact sports.

Medical Doctor/Nurse Practitioner Signature: _____

Date: _____

Comments:

_____

_____

Step 5 - Return to Physical Activity

- *Student may resume regular physical education/intramural activities/interschool activities in non-contact sports and full training/practices for contact sports.*

Step 6 - Return to Physical Activity

- *Student may resume full participation in contact sports with no restrictions.*

Return of Symptoms

❑ My child/ward has experienced a return of concussion signs and/or symptoms and has been examined by a medical doctor/nurse practitioner, who has advised a return to:

- Step _____ of the Return to Learn/Return to Physical Activity Plan

Parent/Guardian signature: _____

Date: _____

Comments:

_____

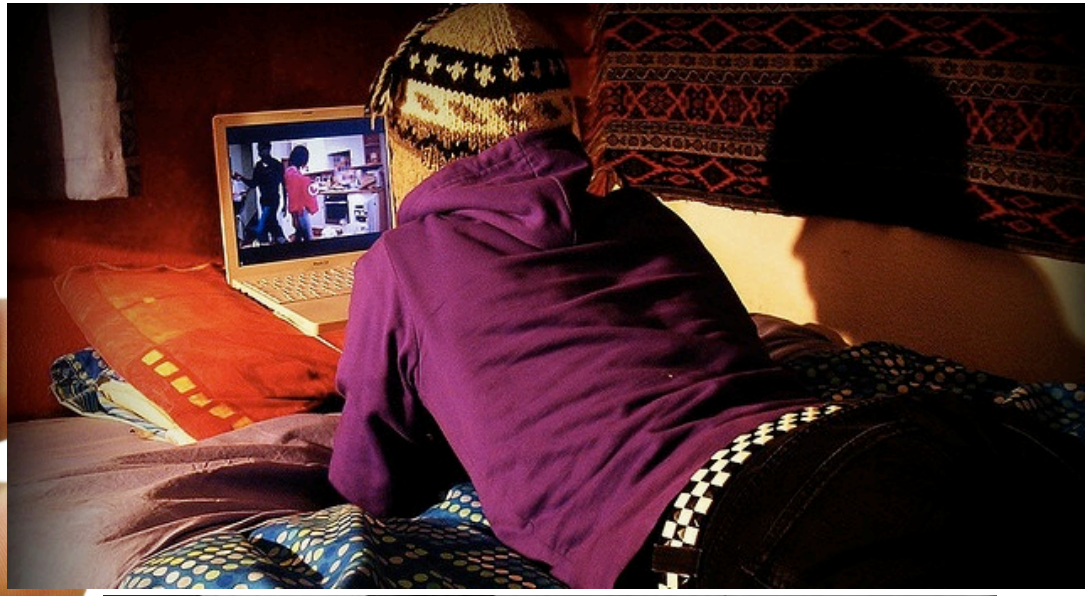
_____

ophea
Healthy Schools
Healthy Communities

Concussion Management

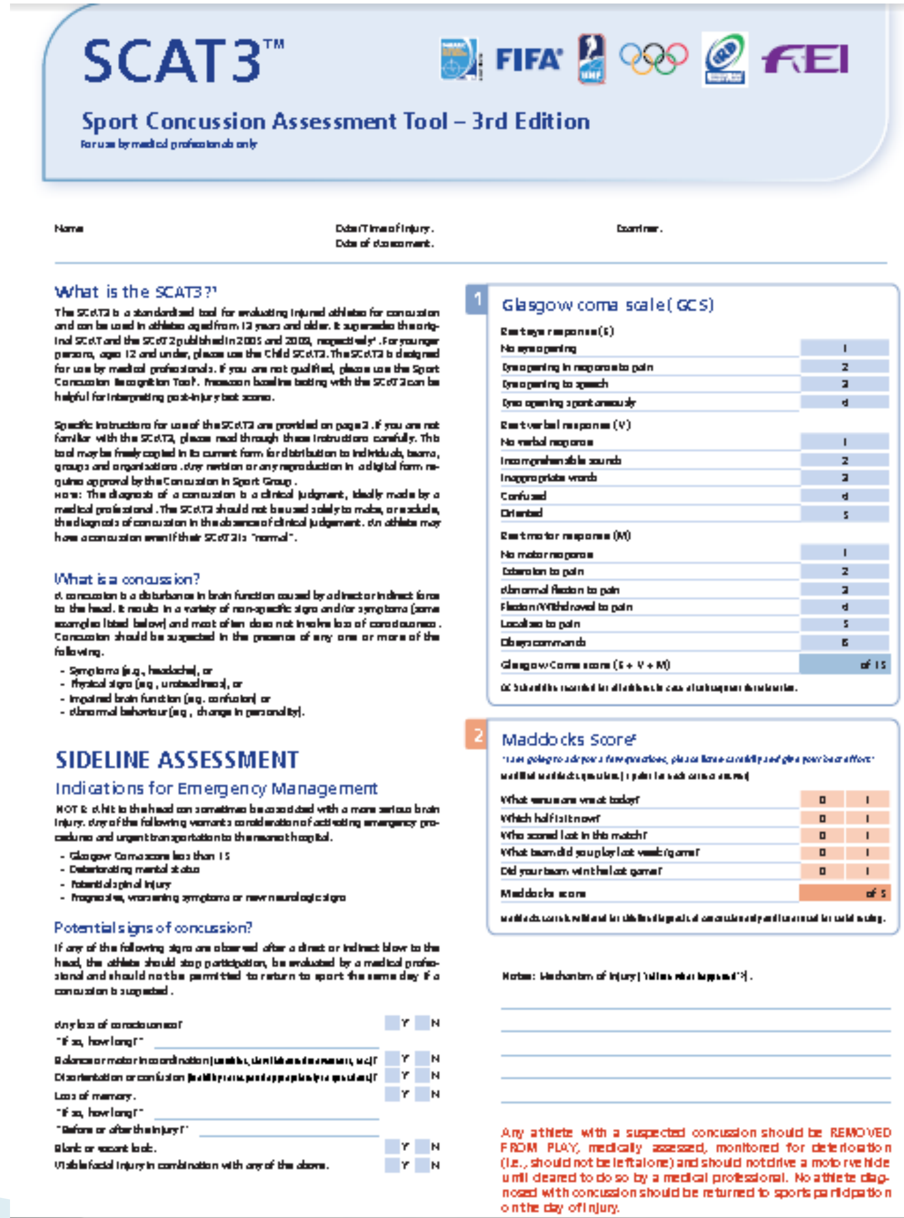
- REST, REST, REST!
- Mental/Cognitive Rest & Physical Rest
- Physician may restrict scholastic activities that involve reading or work on the computer.
- Limit screen time (computer, smart board, video games, smart phones, television).


AT&T
18:21
Messages
Clear
Are you in class right now?
I hate this class. Nothing ever happens.
Hey have you eaten lunch yet?
Send
space
return



Concussion Management

- SCAT3 can be used at the initial assessment as well as in the physician's office.
- Home SCAT3 symptom monitoring to assess for recovery.
- If symptom score is worsening please follow-up with a physician ASAP.


SCAT3™

Sport Concussion Assessment Tool – 3rd Edition

What is the SCAT3?

What is a concussion?

SIDELINE ASSESSMENT

Indications for Emergency Management

Potential signs of concussion?

1 Glasgow coma scale (GCS)

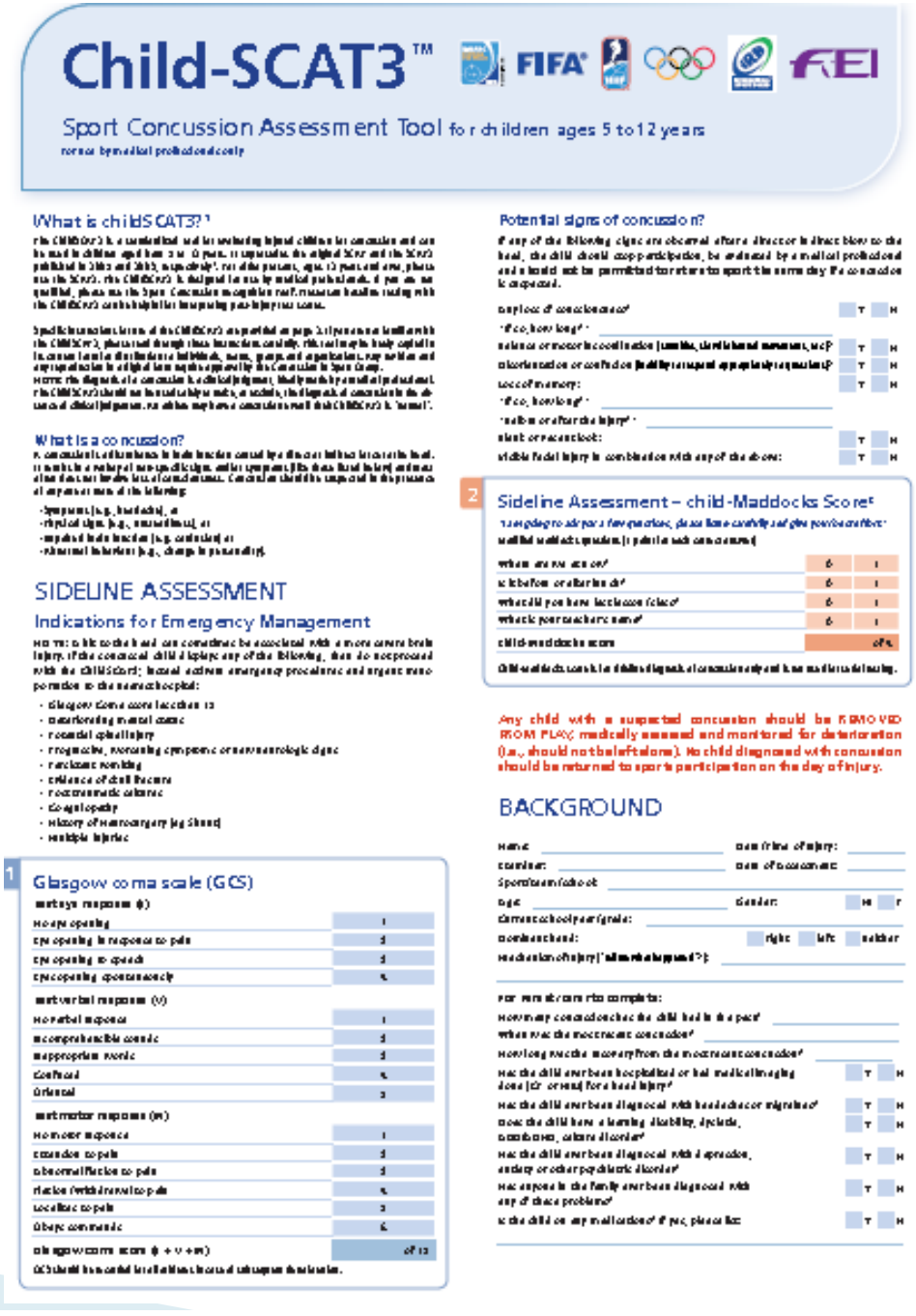
2 Maddocks Score

Any athlete with a suspected concussion should be REMOVED FROM PLAY, medically assessed, monitored for deterioration (i.e., should not be left alone) and should not drive a motor vehicle until cleared to do so by a medical professional. No athlete diagnosed with concussion should be returned to sports participation on the day of injury.

ChildSCAT3

Sport Concussion Assessment Tool for children ages 5 to 12 years

- Pediatric symptom scale developed
  - Child report
  - Parent report
- Developmentally appropriate cognitive assessment.



Child-SCAT3™

Sport Concussion Assessment Tool for children ages 5 to 12 years

What is childSCAT3?

What is a concussion?

SIDELINE ASSESSMENT

Indications for Emergency Management

Glasgow coma scale (GCS)

Potential signs of concussion?

Sideline Assessment – child-Maddocks Score

Any child with a suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration (i.e., should not be left alone). No child diagnosed with concussion should be returned to sports participation on the day of injury.

BACKGROUND

Initial Treatment

- Parents should inform the school if a student has suffered a concussion outside of school time (organized sport, accident, trauma).
- Attending school depends on severity of symptoms and response to cognitive challenges (reading/studying) as focus/concentration can be affected.
- A period of time off school may be recommended.
- First step = rest at home for minimum of 1 day

Return to Learn
Return to Play

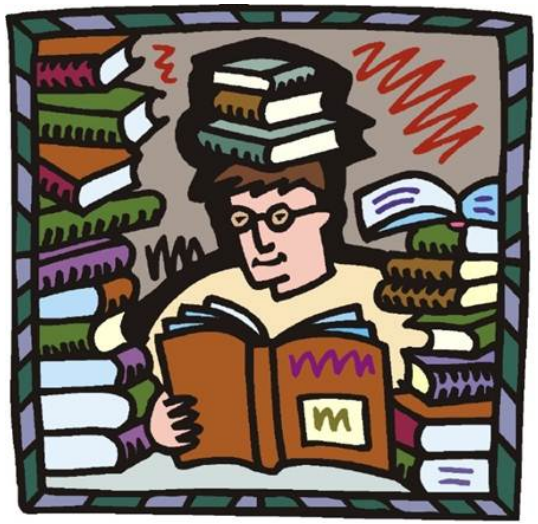
Step 1:

- Student does not attend school for at least 24 hours.
- Mental & physical rest to avoid worsening of symptoms.
- Cognitive rest includes limiting activities that require concentration and attention (e.g., reading, texting, television, computer, video/electronic games).
- Physical rest includes restricting recreational/leisure & competitive physical activities.
  - Once the student starts to improve or is asymptomatic proceed to Step 2.

Return to Learn

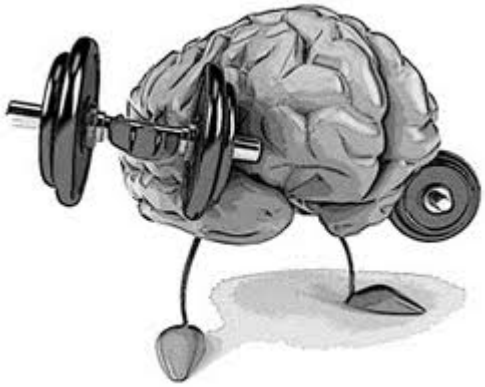
Step 2a:

- A student with symptoms that are improving, but who is not yet symptom free, may return to school but requires individualized classroom strategies and/or approaches to return to learning activities
- At this step, the student's cognitive activity should be increased slowly (both at school and at home), since the concussion may still affect his/her academic performance.
- Cognitive activities can cause a student's concussion symptoms to reappear or worsen.



Graded Exertion Protocol for Concussion

Physical Activity

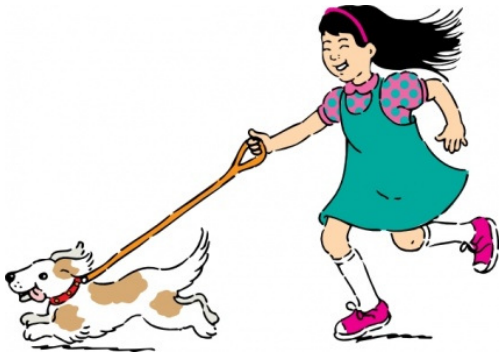


1. **No activity – COMPLETE** rest
2. Light aerobic exercise
3. Sport-specific training
4. Non-contact training drills (may start training)
5. Full contact practice after medical clearance
6. Return to play

- **MINIMUM** 24 hours per step
- If there is recurrence of symptoms at any stage, student must be examined by physician or nurse practitioner who determines the appropriate next step in the Return to Learn/Return to Physical Activity plan and the parents will communicate this with the school personnel.

6-Step Graduated Return to Play Protocol

- Return to play protocol initiated when the student no longer has any symptoms.
  - average 7-10 days but varies significantly.
- Time needed to successfully complete each step will vary with severity of the concussion and the student.
- Each step must be a minimum of one day & medically supervised (more cautious in younger children).
- If any symptoms return either during the activity or later that day the student must:
  - Stop all activity immediately.
  - Rest for 24 hours.
  - Follow up with physician or nurse practitioner to determine the next appropriate step.



Return to Learn
Return to Play

Step 2b

- At this step, the student begins regular learning activities without any individualized classroom strategies and/or approaches.
- This step occurs concurrently with Step 2 – Return to Physical Activity.
- **Activity:** Initial physical activity may involve light aerobic exercise such as walking, swimming, skipping, cycling for 10-15min, keeping intensity below 70% of maximum permitted heart rate
- **Restrictions:** no resistance training, no participation with equipment or with other students).
- **Objective:** Increase Heart Rate

Return to Play

If no reoccurring symptoms after completing Step 2 → parent/guardian may sign the form, e.g., ***Sample Documentation for a Diagnosed Concussion (Appendix C4)*** to permit the student to proceed to Step 3 at school.

Step 3:

- **Activity:** Individual sport-specific physical activity only (e.g., running drills in soccer, skating drills in hockey, shooting drills in basketball)
- **Restrictions:** No resistance/weight training. No competition (including practices, scrimmages). No body contact, no head impact activities (e.g., heading a ball in soccer) or other jarring motions (e.g., high speed stops, hitting
a bat).
- **Objective:** To add movement

Return to Play

Step 4:

- **Activity:** Activities where there is no body contact (e.g., dance, badminton, volleyball). Progressive resistance training may be started. Non-contact practice and progression to more complex training drills (e.g., passing drills in football and ice hockey).
- **Restrictions:** No activities that involve body contact, head impact or other jarring motions.
- **Objective:** To increase exercise, coordination and cognitive load

Return to Play

- After successfully completing Step 4, the teacher/coach provides the student with the ***Sample* Documentation for a Diagnosed Concussion (Appendix C4)**.

- Student must return for a second visit with the physician/NP to be reassessed for final approval to engage in full physical activity.

- Physician determines and indicates that all symptoms and signs of the concussion are gone by completing:
  - I, _____ (medical doctor/nurse practitioner name) have examined _____ (student name) and confirm he/she continues to be symptom free and is able to return to regular physical education class/intramural activities/interschool activities in non-contact sports and full training/practices for contact sports.

- Physician signs and dates the form and student brings the completed form to the appropriate school personnel.

Return to Play

Step 5:

- **Activity:** Regular physical education class/ intramural activity/non contact interschool competition.
  - For interschool activities with intentional physical contact (e.g. hockey, rugby, football), student must complete at least one practice, with full physical contact, prior to first competition.
- **Restrictions:** No competition (e.g., games, meets, events) that involve body contact
- **Objective:** To restore confidence & assess functional skills by teacher/coach

If the student is symptom free for the next 24 hours, he/she can go to Step 6.

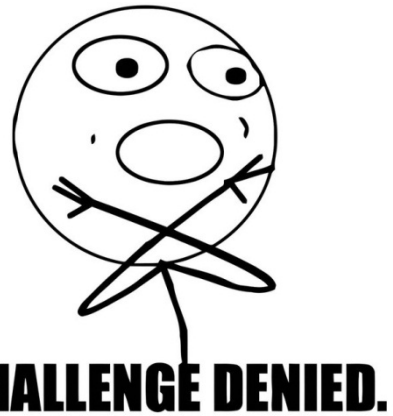
Return to Play

- Step 6: Competition
  - Staff activity providers are to be informed of the student's ability to participate in **all** physical activities and sports.
  - The completed Concussion Related Injuries Form is filed in the student's OSR.

Return of Symptoms

- If the parent/guardian/physician/NP determines that the student still has symptoms & signs of concussion:
  - Parent/Guardian signs the final page of the ***Sample Documentation for a Diagnosed Concussion (Appendix C4)***
  - Student brings the form to the appropriate school personnel.
  - The student is to rest for 24 hours and return to the physician/nurse practitioner who will advise a return to:

    Step _____of the Return to Learn/Return to Physical Activity Plan



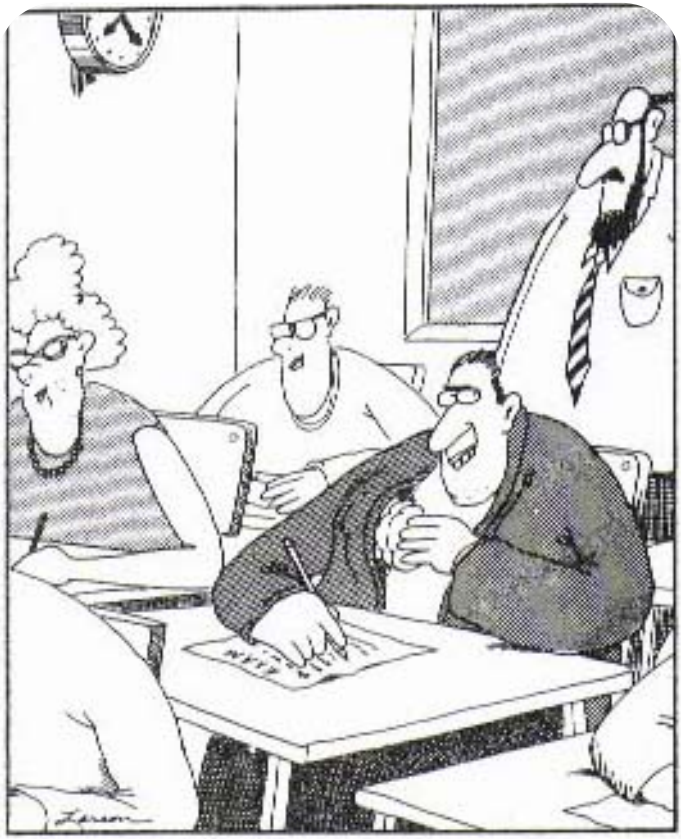
While not all children who sustain a concussion are athletes, all children who sustain concussions are students.

Parachute
PREVENTING INJURIES. SAVING LIVES.

Return to Learn

Return to Learn

- Often overlooked!
- There has been less emphasis on school than sport.
- Cognitive demands, much like physical demands, can worsen symptoms and delay recovery.
- Presently, there are no return to learn protocols in place.
- Return to learn is an extremely individualized process.



Midway through the exam, Allen pulls out a bigger brain.

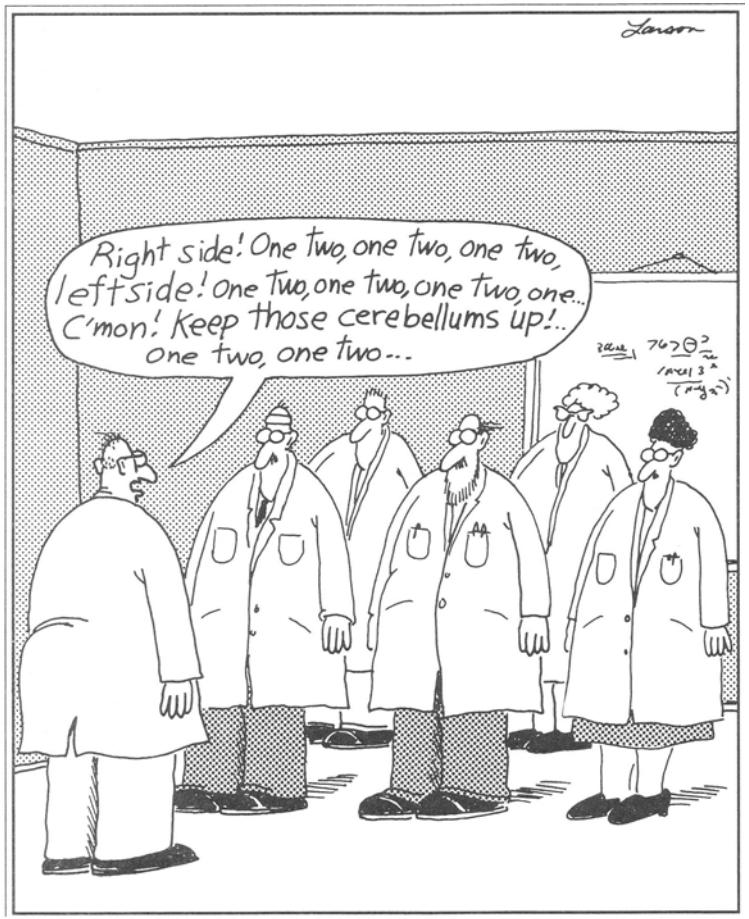
Return to Learn

- Concussed students should not return to school until symptoms are improving.
- When headache free, students may try brief periods of reading or light studying.
- Return to school when the student can tolerate a few hours of cognitive activity without return of concussion symptoms.
- Important that students have full return to academics BEFORE return to full participation in physical activity & sport.

Concussion Effects on Learning

- Concussion can cause mental fatigue and affect ability to participate, learn, & perform in school:
  - Difficulty with new learning
  - Decreased attention and memory
  - Slowed processing speed and efficiency
  - Slowed reaction time
  - Anxiety/nervousness
    - Can further impair cognitive function & impact compliance
  - Emotional meltdowns & behavioural outbursts
    - Common result of mental fatigue
    - Especially in younger children.

Concussion Effects on Learning



Brain aerobics

- Activities requiring concentration can worsen symptoms & prolong recovery.
  - "cognitive overexertion"
- Find an appropriate level of cognitive activity that does not exacerbate symptoms.
  - Limit video games, computer, reading as well as schoolwork
- Academic adjustments need to be <u>individualized</u>.

Difficulty with New Learning

- Educators need to be sensitive to the fact that while the goal of school is new learning, the concussed brain is inefficient in its ability to create new learning.
- The material presented to a student during a concussion recovery period has a difficult time being converted to memory but also into conceptual learning.

"Mr. Osborne, may I be excused? My brain is full."

Return to Learn

- Stepwise increase in cognitive tasks
  - Cognitive rest
  - Period of school absence
  - Increase cognitive activities at home
  - Gradual return to school
    - Half-days initially, only attend some classes
    - Shortened day→ start later in the morning or have an early dismissal depending on student's peak time for symptoms.
    - Avoid classes such as phys-ed, music and industrial arts until symptoms have resolved.
    - Teacher reassurance

School Absence

- Temporary
- Minimal period necessary
- Social isolation, withdrawal
- Mental health issues (depression, anxiety)
- Peer group interactions important
- “Normal” routine important

Return to Learn

- Before the student can return to school, the parent/ guardian must fill in ***Sample Documentation for a Diagnosed Concussion - Return to Learn/ Return to Physical Activity Plan (Appendix C4)***, either that:
  - the student's symptoms are improving and the student will proceed to **Step 2a – Return to Learn**

  OR

  - the student is symptom free and the student will proceed directly to **Step 2b – Return to Learn** and **Step 2 – Return to Physical Activity** (concurrently).

Accommodations in the Classroom

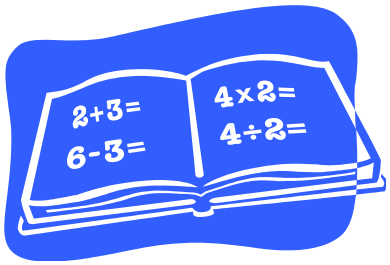
- Frequent breaks & rest periods during the day if possible.
- Quiet area to retreat to if symptoms begin.
- Remove or exempt the concussed student from tests or large projects.
- Write exams in a quiet room and allow extra time with the ability to take breaks to make up for delayed processing speed.
- Space out tests so no more than 1/day.
- Extensions on assignments & projects, shorter assignments, adjust due dates.

Accommodations in the Classroom

- Adjust/cut back on workload in class and homework.
  - Don't expect them to catch up on all missed work later.
- Focus on understanding the material rather than memorization of facts.
- It is not possible for the student to make up all the missed work while recovering from a concussion.
- Carrying over work for a later date creates significant anxiety and can impede recovery.

Accommodations in the Classroom

- Math and chemistry seem to cause the return of symptoms more than other classes. This may be because more areas of the brain are used to process the information & more intense concentration required by some students.



Accommodations in the Classroom

- Noise Sensitivity:
  - Avoid noisy hallways and congested areas such as cafeterias.
  - Wear earplugs or do schoolwork in quiet areas of school.
  - Avoid the noisy school bus by having the student get a drive to school.
  - Student may use tape recorders or obtain copies of the teachers/other students notes.

Accommodations in the Classroom

- Light Sensitivity:
  - Permit the student to wear sunglasses in the classroom.
  - Work in rooms with lower number of bright windows.
  - Consider dimming the lights and turning off some of the fluorescent lights.

Once the student returns to school with the appropriate interventions in place the question will be…….

1. Are the interventions working?
2. How long do the academic adjustments need to be in place?
3. The process of Assess - Intervene - Monitor progress – Adjust repeats until the student is recovered.

The Support Team

- A team approach to develop & evaluate Return to Learn plans.
- Involvement of the student, parent/guardian, school nurse, school psychologist, guidance counsellors, teachers, coaches & principal/ administrator all in communication with the health care professional will be instrumental in supporting changes to the academic plan.

Difficulties in Return to Learn

- Lack of compliance
- Lack of communication
- Lack of support from school
  - No policy in place
  - Lack of knowledge regarding concussion
  - Students being forced to participate beyond their capabilities

Persistent Concussion Symptoms

- The recovery pattern may not always be smooth.
- Concussed students with symptoms lasting longer than normal are at high risk for depression due to:
  - loss of identity
  - loss of social interaction
  - overwhelming course demands
  - peer pressure
  - loss of scholarship/university acceptances due to poor marks

Summary

- By following the concussion protocol as addressed in the Ontario Physical Education Safety Guidelines, teachers can by confident they are:
  - Minimizing the chance of concussion occurring during school related activities.
  - Implementing a recognized standard of care for the management of concussions as advocated by experts in the field of concussion prevention and management.
  - Meeting their duty of care (safety obligation) by providing recognized safety procedures in activities for which they are responsible.

A Little Known Fact About Hockey

- **The first *testicular guard* "Cup" was used in hockey in <u>1874</u> and the *first helmet* was used in <u>1974</u>.**

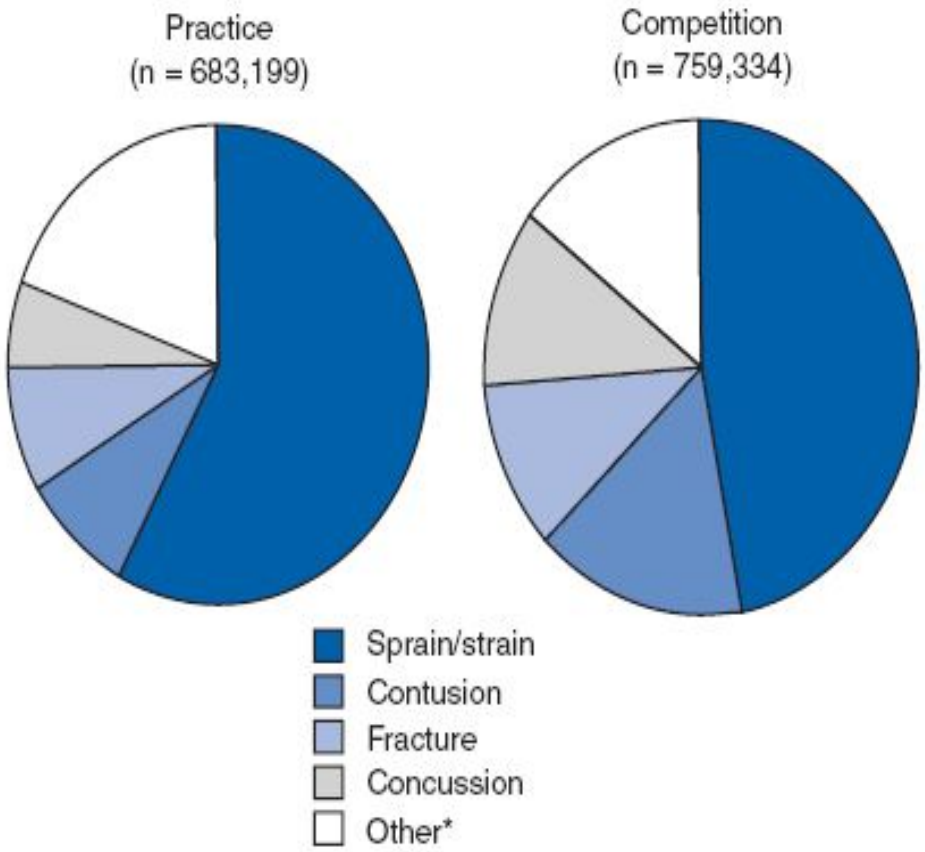
- **It took 100 years for us to realize that the brain is also important!**

Keep it in Perspective…

INJURY	RECOVERY
Fractures	6-8 weeks
Ligament sprains	2-8 weeks
ACL tear	6-12 months
Concussion	1-3 weeks

Keep it in Perspective….

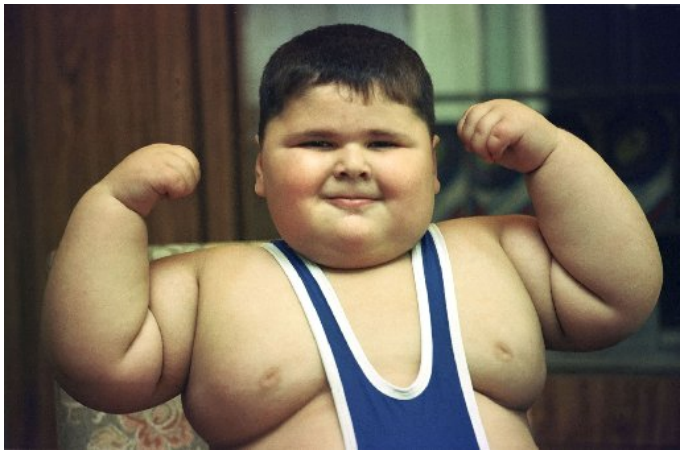
FIGURE 1. Proportion of injuries in practice and competition, by diagnosis — High School Sports-Related Injury Surveillance Study, United States, 2005–06 school year



*Includes other injuries (e.g., lacerations or dislocations) and reportable health-related events (e.g., heat illness, skin infections, or asthma attacks).

Keep it in Perspective…

- Canada is in the midst of an epidemic of overweight & obesity.
- In 1978, only 15% of children were overweight or obese. By 2007, Statistics Canada found that 29% of adolescents had unhealthy weights.
- From 1981 to 1996, the number of boys & girls who were overweight doubled & the number that were obese tripled.
- More than half of 5-17 year olds are not reaching activity levels sufficient for optimal growth and development.
- Encourage students to be active!



Benefits of Physical Activity & Sport Outweigh the Risks

- Increases physical health, cardiovascular conditioning, strength, & endurance.
- Improves self-image & self-esteem.
- Decreases the risk of obesity.
- Helps children learn that they can improve their performance & skills through practice & hard work.
- Team sports teach how to interact with peers, to assist those who are less skilled, and to learn from those who are more highly skilled.
- Teaches how to cooperate & how to lead.
- Increases the chances that they will lead more active lifestyles as adults.

Resources

- Ontario Physical Education Safety Guidelines (managed by Ophea) www.safety.ophea.net
- Parachute Canada www.parachutecanada.org
- Think First Foundation of Canada www.thinkfirst.ca
- Hockey Canada www.hockeycanada.ca/apps
- Play it cool www.playitcoolhockey.com
- Stop Concussions www.stopconcussions.com
- Concussions Ontario www.concussionsontario.org
- Centers for Disease Control and Prevention www.cdc.gov/concussion
- Canadian Paediatric Society www.cps.ca/ HealthyActiveLiving.htm
- Canadian Academy of Sports Medicine www.casem.acmse.org

THERE'S AN APP FOR THAT!

Sport Concussion Assessment Tool 2

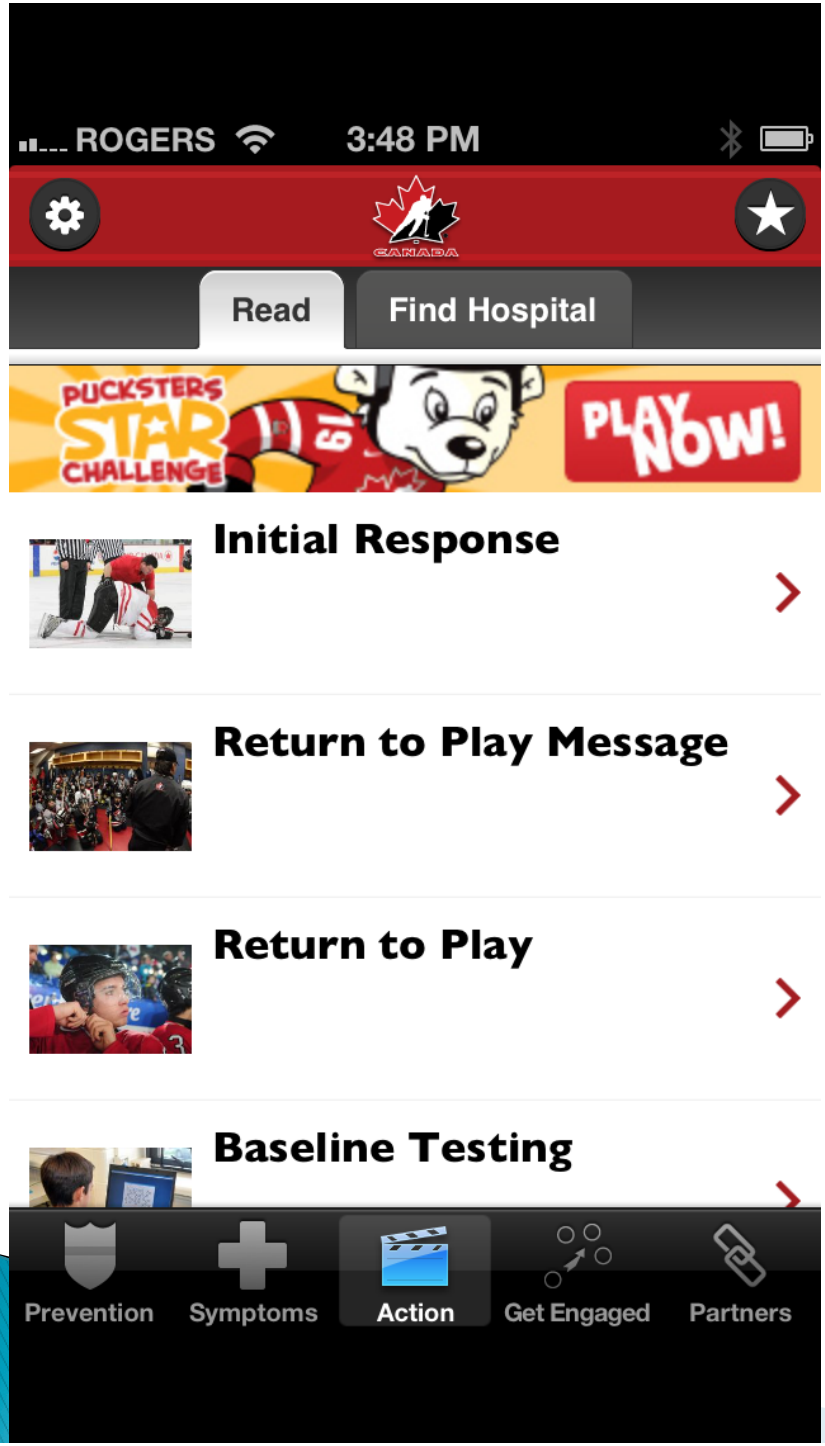
SCAT2 is a standardized method of evaluating injured athletes for concussion.
Download the SCAT2 app for your iPhone, iPod touch, or iPad.
Support inquiries may be directed to support@scat2.org.

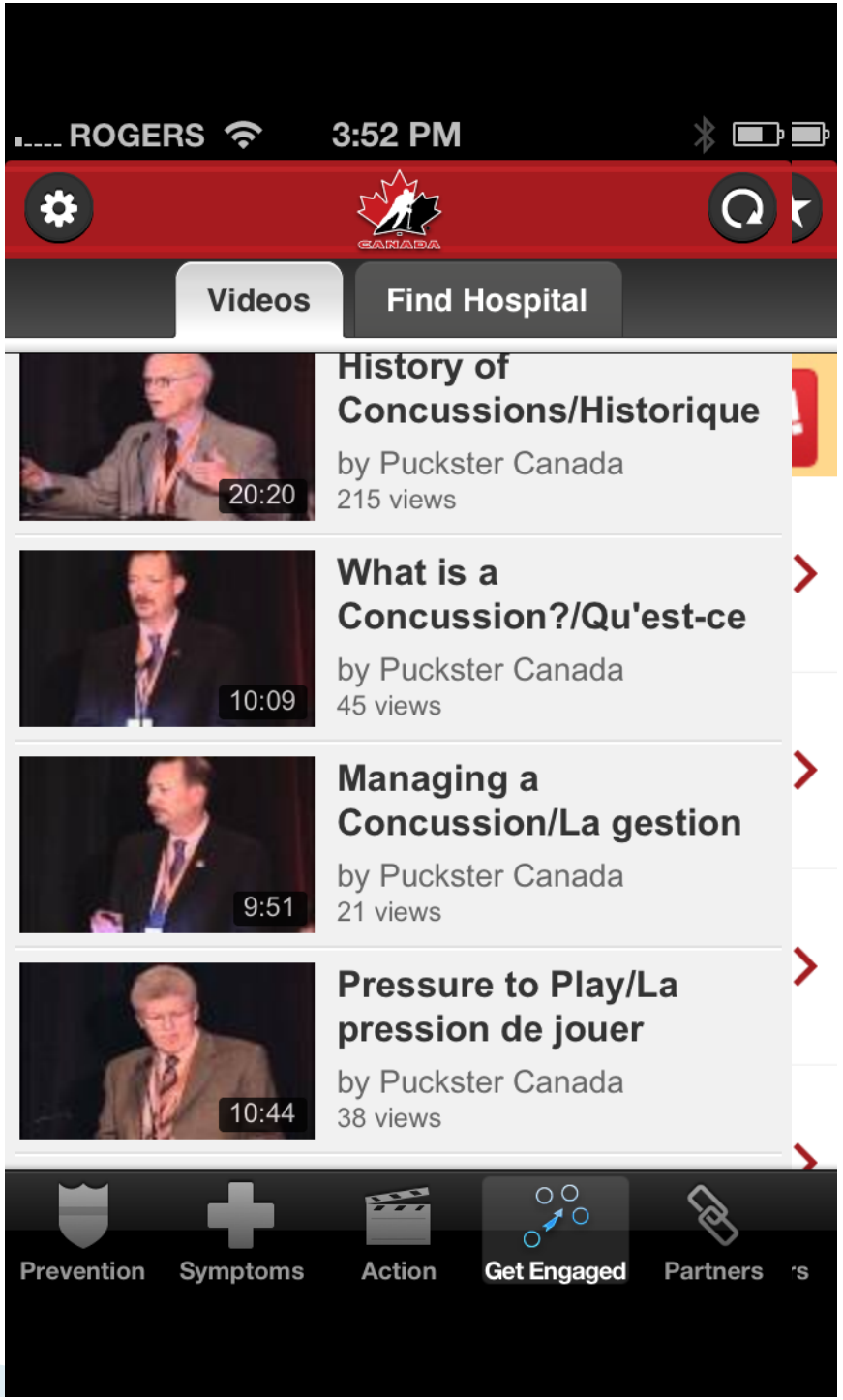
Pocket SCAT2

By Inovapp Inc.

Open iTunes to buy and down

CONCUSSION APP NOW AVAILABLE


ROGERS
3:48 PM
Read
Find Hospital
PUCKSTERS STAR CHALLENGE
PLAY NOW!
Initial Response
Return to Play Message
Return to Play
Baseline Testing
Prevention
Symptoms
Action
Get Engaged
Partners


ROGERS
3:52 PM
Videos
Find Hospital
20:20
History of Concussions/Historique
by Puckster Canada
215 views
10:09
What is a Concussion?/Qu'est-ce
by Puckster Canada
45 views
9:51
Managing a Concussion/La gestion
by Puckster Canada
21 views
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Pressure to Play/La pression de jouer
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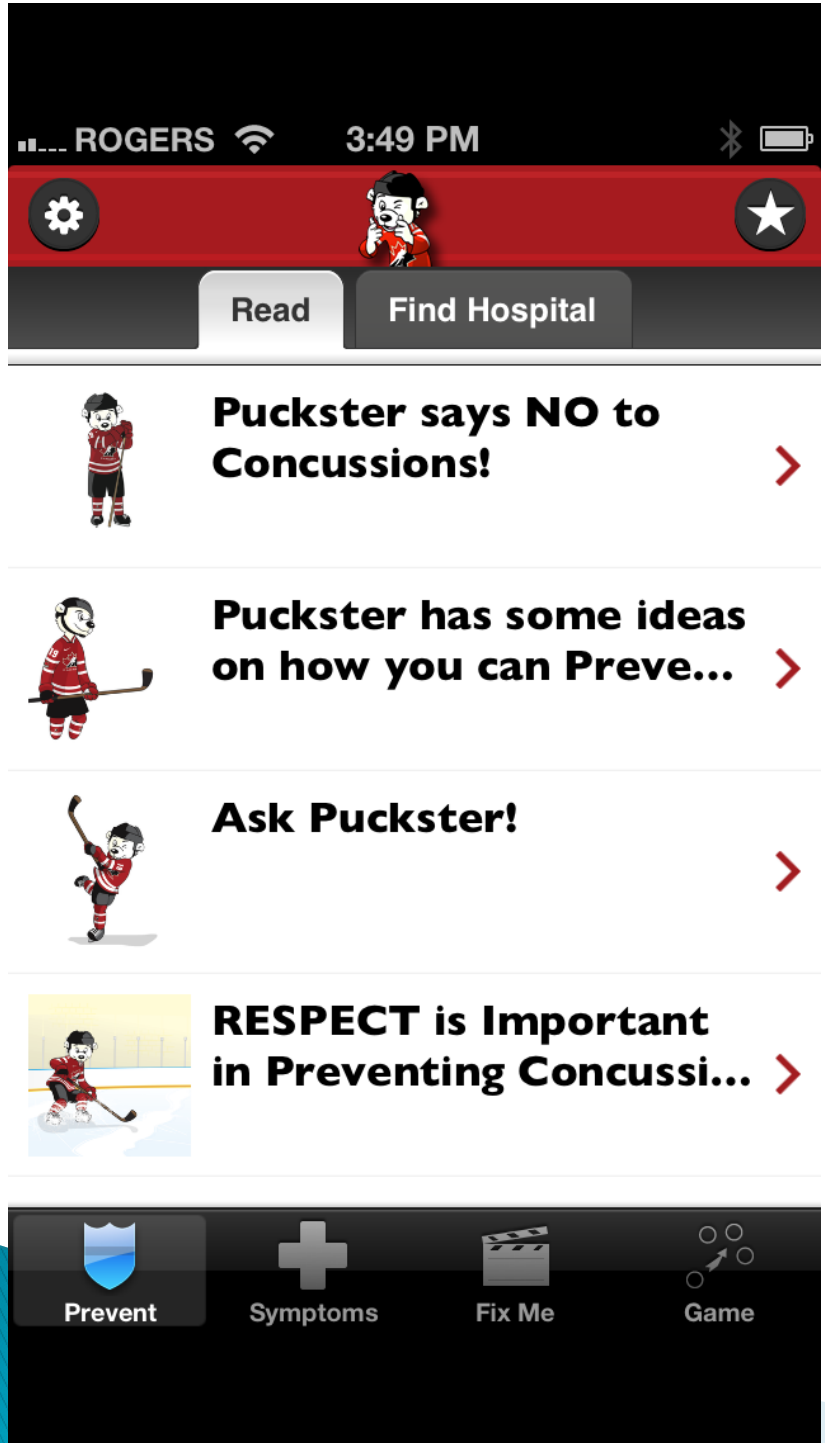
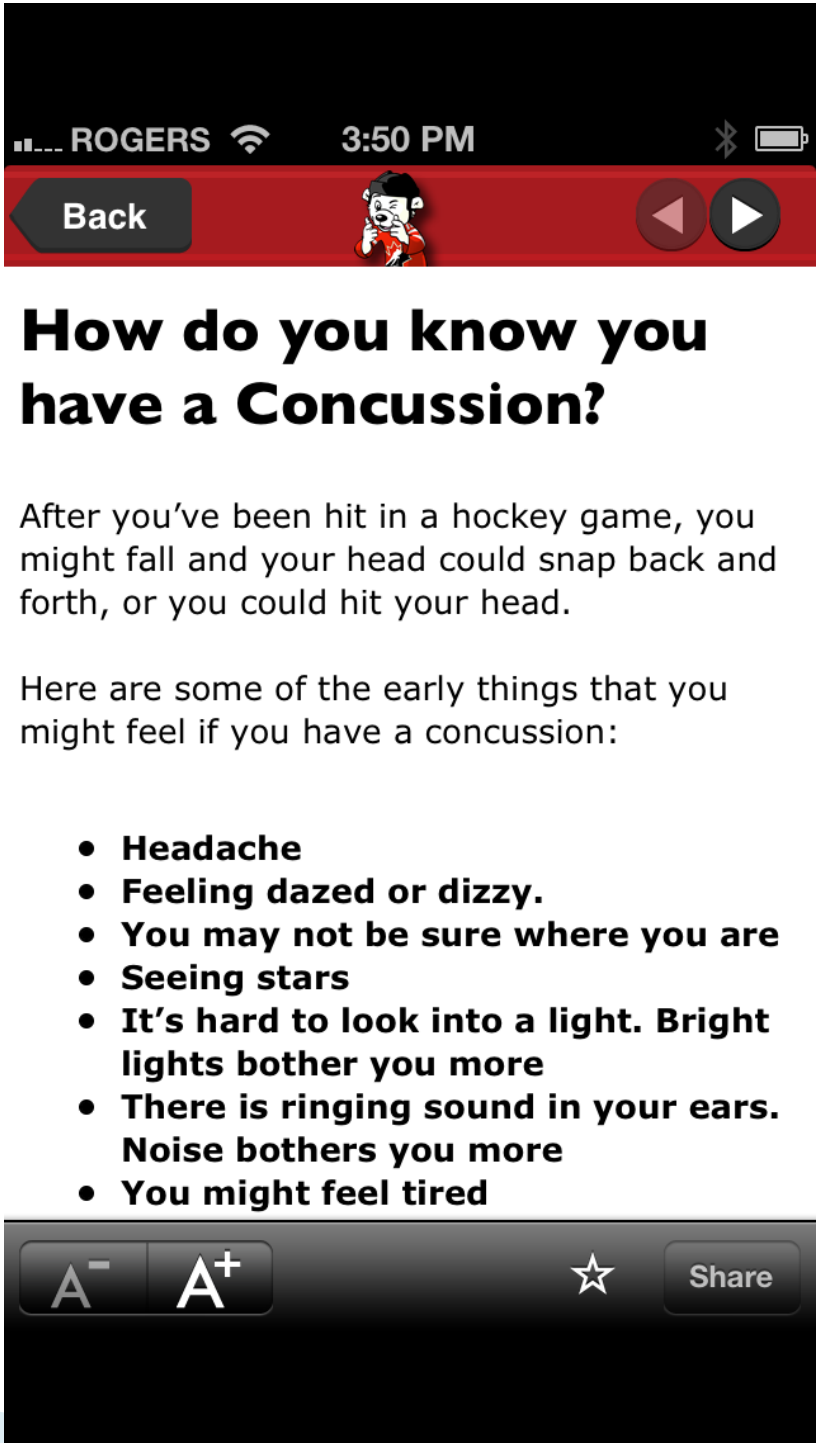
38 views
Prevention
Symptoms
Action
Get Engaged
Partners


ROGERS
3:49 PM
Read
Find Hospital
Puckster says NO to Concussions!
Puckster has some ideas on how you can Preve...
Ask Puckster!
RESPECT is Important in Preventing Concussi...
Prevent
Symptoms
Fix Me
Game


ROGERS
3:50 PM
Back
How do you know you have a Concussion?
After you've been hit in a hockey game, you might fall and your head could snap back and forth, or you could hit your head.
Here are some of the early things that you might feel if you have a concussion:
Headache
Feeling dazed or dizzy.
You may not be sure where you are
Seeing stars
It's hard to look into a light. Bright lights bother you more
There is ringing sound in your ears. Noise bothers you more
You might feel tired
A-
A+
Share

Questions?

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