Raising Awareness of Concussions in BC

Dr. Shelina Babul
Associate Director, Sports Injury Specialist
BC Injury Research & Prevention Unit / BC Children’s Hospital
Investigator / Developmental Neurosciences & Child Health I Child & Family Research Institute
Clinical Assistant Professor / Department of Pediatrics, UBC

May 10, 2014
Purpose

- To highlight the need for standardized concussion recognition, treatment and management

- An overview of the burden of concussions/minor TBIs

- An orientation of the Concussion Awareness Training Toolkit (CATT)
  - Health Practitioners
  - Parents, Players and Coaches
  - Educators (Sept 2014)
How a concussion is handled in the minutes, hours and days after injury can SIGNIFICANTLY influence the extent of damage and recovery from this injury.
Concussion – Burden in BC

- **16,888** concussions seen in emergency departments throughout the BC Lower Mainland for all ages:
  - **6,651** from VCH (2011)
  - **8,959** from FH (2011/12)
  - **1,278** presenting to BCCH (2009)

- 39.5% of the total - **children** and youth ages 0-19 years

- 59.4% of the total – **males**

- **9,027** children & youth ages 0-19 years presented to BCCH with a concussion / minor head injury during the 2001-2009 period.
IMPACT OF CONCUSSION ON ATHLETE'S BRAIN

A concussion is a brain injury caused by a bump, blow, or jolt to the head. Symptoms can appear right away or days later. A severe concussion can have a dangerous cumulative effect and can cause debilitating memory loss, chronic headaches, and clinical depression.

What happens
In a severe concussion, forces can twist and break the long, slender axons of brain cells.

Fluid surrounding the brain can fail to protect blood vessels and nerves from damage.

Impact can be almost 100 times the force of gravity.

- Brain Injury
- Complex
- Head or other part of the body
- Loss of consciousness?
- Imaging
- Immediate or after several days
- Lasting days/weeks/months
Signs and Symptoms

**Physical**
- Headache
- Nausea
- Vomiting
- Balance problems
- Dizziness
- Visual problems
- Fatigue
- Sensitivity to light
- Sensitivity to noise
- Numbness/Tingling
- Dazed or stunned

**Cognitive**
- Feeling mentally “foggy”
- Feeling slowed down
- Difficulty concentrating
- Difficulty remembering
- Forgetful of recent information or conversations
- Confused about recent events
- Answers questions slowly
- Repeats questions

**Emotional**
- Irritability
- Sadness
- More emotional
- Nervousness

**Sleep-related**
- Drowsiness
- Sleeping less/more usual
- Trouble falling asleep
Concussion – of note….

• An individual is 3-times more likely to sustain a second concussion in recovery from a concussion.

• If a second concussion is sustained before recovering from the first, a condition known as second-impact syndrome (SIS) may occur: a swelling of the brain that can result in brain damage causing severe disability or even death.

• Repeated episodes may cause permanent deficits such as dementia, seizures, movement disorders, depression, possible death

• Children are at a greater risk for concussion than adults.

• Children can take longer to recover from a concussion than adults and are at higher risk for permanent damage.

• Each concussion MUST be treated on a case-by-case basis
Concussions

Good concussion management will potentially:

• Reduce future related-health problems
• Decrease the risk of long-term brain damage
• Lower total health care costs
What is the Key?

- Accurate Detection
- Expert Management
www.cattonline.com

CATT (Concussion Awareness Training Tool)

Cattonline.com currently provides two free online concussion toolkits: the Concussion Clinical Toolkit for Medical Professionals and the Concussion Awareness Training Toolkit for Parents, Players, and Coaches.

Both websites provide up-to-date education, tools and resources to help prevent, recognize, treat and manage concussions as well as support decreasing the impact of concussion when they do occur.

These resources are updated on a monthly basis and will provide the latest evidence on how to deal with concussions.

Medical Professionals
Learn the latest care and management of patients who have sustained a concussion. This includes a 40 minute online course that both physicians and nurses can take, as well as in-office assessments, printable resources for both the physician and patient, video commentary by experts and case studies.

Parents, Players, and Coaches
Learn how to recognize and respond to a concussion and manage a player's recovery through a variety of web-based tools and resources. This includes a 30 minute online course as well as printable resources, online videos and additional handouts for parents.

Educators
Available Fall 2014
Consensus Statement on Concussion in Sport
CATT Goals

• Training
• Quick and easy access
• Additional resources
• Links
• Printable resources
• FAQs
CATT Development

Look & Feel:

• Multisensory content via text, audio and video *(based on focus group discussion)*

• Culturally appropriate for Canada

• Interviews with Canadian experts

Extensive external review & revisions (provincial and national)
CATT for Health Practitioners

Promoting Concussion Management
Based on the consensus of a panel of experts at the 4th International Conference on Concussion in Sport

Learn
Mannos-M2 eligible
Up to date clinical management
Perspectives from concussion experts
Learner directed

Assess
With the online SCAT3 and ChildSCAT3
Quick and easy to fill out
Step-by-step evaluation
Optionally download or print the results

Resources
For Health care professionals
Clinical tools and guidelines
Return to activity guidelines for patients
Journal articles and more
CATT for Parents, Players and Coaches

Concussion Awareness Training Tool

Cationline.com provides up-to-date concussion education for parents and coaches. It includes video lessons and resources to effectively prevent, recognize and manage a player's recovery.

BEGIN COURSE

- Parents
  Information and resources for parents to help manage a child with a concussion
  PARENTS PAGE ➤

- Players
  Helpful videos to teach players about concussions
  PLAYERS PAGE ➤

- Coaches
  Information and tools to help coaches manage a player with a concussion
  COACHES PAGE ➤

Peter Mansbridge interviews Sidney Crosby to discuss head injuries and safe practices.
Parents

• Central to the management of their child’s concussion recovery
• Responsible for monitoring their child on a day-to-day basis
• Responsible for seeking medical attention for their child
• Responsible for ensuring their child follows recommended treatment
Players

• Need to understand what a concussion is and how it occurs
• Need to understand what the symptoms are
• Need to understand the importance of acknowledging a potential concussion
Coaches, including community volunteer coaches

- Need to know the principles of concussion management
- Need to identify high-risk activities
- Need to compile pre-participation information
- Need to take appropriate action when a player sustains an injury that could cause a concussion
Welcome to CATTonline.com for Coaches and Parents

This 30-minute course provides concussion education for both coaches and parents. Although the courses are the same for coaches and parents, the quizzes within the course are different for each audience.

Please choose which course you would like to complete

- COACHES
- PARENTS
1. **What is a concussion?**

2. **Does my child have a concussion?**

3. **What do I do if I think my child has a concussion?**

4. **My child has a concussion. What is the recovery process?**

5. **How does my child successfully return to school and play?**

6. **How can I help to prevent concussions?**

---

**Red Flag Symptoms**

If your child shows any of the following Red Flag Symptoms call 911 immediately.

- Neck pain
- Increased confusion or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness in arms/legs
- Tingling or burning in arms/legs
- Deteriorating consciousness
- Loss of consciousness
- Severe or increasing headache
- Unusual behaviour change
- Double vision
Brain 101: What's a Concussion
An animated, informative video that provides an overview of what a concussion is; signs and symptoms and emphasizes the importance of working together to recognize, respond and report concussions.

Concussion 101: A Primer for Kids and Parents
A whiteboard video providing an overview of concussion including cause, signs and symptoms and recovery.

Concussion 101: Symptoms, Risk and Return to Play
Concussion experts discuss signs and symptoms of concussion and what you can do to help prevent head injuries.

Concussions in Teens - Teenology 101
Provides an overview on how you get a concussion and what signs and symptoms to look for.
Concussion Awareness Training Tool

Handouts

Concussion Response Tool
BC Injury Research and Prevention Unit

Concussion Response Tool (user fillable)
BC Injury Research and Prevention Unit

Questions To Ask Your Doctor
BC Injury Research and Prevention Unit

Return to Learn Communication Tool
BC Injury Research and Prevention Unit

Return to Play Communication Tool
BC Injury Research and Prevention Unit

Concussion Fact Sheet
BC Injury Research and Prevention Unit

Concussion Guidelines for Coaches/Trainers
Parachute

Concussion Guidelines for Parents/Caregivers
Parachute
Concussion Response Tool

Child’s name: __________________________ Age: __________________
Name of parent/guardian: __________________________________________
Name of person monitoring child at scene: ____________________________
Date of incident: __________________ Time: __________________
Description of incident: ❑ Blow to the head ❑ Hit to the body
What happened: ___________________________________________________

At the scene of the incident

Step 1: Determine if this is a medical emergency

a) Follow basic first aid:
   ❑ Danger
   ❑ Response
   ❑ Airway
   ❑ Breathing
   ❑ Circulation

b) CALL 911 if the child shows any of these Red Flag Symptoms at any time.

<table>
<thead>
<tr>
<th>RED FLAG SYMPTOMS</th>
<th>The child complains of:</th>
<th>The child is showing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>❑ Repeated vomiting</td>
<td>❑ Neck pain</td>
<td>❑ Unusual behavior</td>
</tr>
<tr>
<td>❑ Seizure or convulsion</td>
<td>❑ Double vision</td>
<td>❑ Increasing confusion or irritability</td>
</tr>
<tr>
<td>❑ Deteriorating or loss of</td>
<td>❑ Weakness or tingling/burning in the arms or legs</td>
<td></td>
</tr>
<tr>
<td>consciousness</td>
<td>❑ Severe or increasing headache</td>
<td></td>
</tr>
</tbody>
</table>

Questions to Ask Your Doctor

If you suspect your child may have a concussion, you should see your doctor right away. This is a list of questions you can take with you.

Caring for my child
What kind of medication can I give my child? __________________________
Does someone need to be with my child at all times? __________________

What my child can do
Can my child eat? Will they have an upset stomach? __________________
What kind of activities can my child do at this stage of their recovery? __________________
Can my child readuse the computer/play video games? __________________
When can my child go back to school or work? __________________
When can my child return to physical activity? __________________
Can my child drive? __________________

Symptoms
What symptoms should I be watching for? __________________________
How soon will symptoms begin to improve? __________________________
How long will these problems last? __________________________

The risks
What is the risk of a future concussion? __________________________
What is the risk of long term complications? _______________________

Follow-up with the doctor
When should we come back to see you? __________________________
Under what circumstances should I call you? _______________________
Should a specialist be consulted? _____________________________
Are there any resources you recommend? __________________________

SMARTPHONE/IPAD FILLABILITY
Return to Play Communication Tool

Return to Learn should be completed before Return to Play.

**STAGE 1:**
No sporting activity
Symptom-limited physical and cognitive rest

**STAGE 2:**
Light aerobic exercise
Walking, swimming, stationary cycling. No resistance training. Heart rate <70%

**STAGE 3:**
Sport-specific exercise
Skating drills (ice hockey), running drills (soccer). No head-impact activities

**STAGE 4:**
Non-contact drills
Progress to complex training drills (e.g., passing drills). May start resistance training

**STAGE 5:**
Full-contact practice
Following medical clearance participate in normal training activities

**STAGE 6:**
BACK IN THE GAME
Normal game play

**Increase heart rate**
Add movement
Exercise, coordination, cognitive load

If symptoms reappear at any stage, go back to the previous stage until symptom-free for 24 hours. You may need to move back a stage more than once during the recovery process.

**Medical clearance required before moving to Stage 5**
CATT Evaluation

Parents, Players and Coaches
- Parents with a child registered in soccer, hockey, lacrosse and/or gymnastics
- Pre/post survey design using FluidSurveys
- Measuring changes in Knowledge, Attitudes & Practices

CATT Dissemination

Parents, Players and Coaches (Provincial / National)
- Face-to-Face Meetings
- Presentations
- Newsletters/Newspapers
- Websites
- Sports Organizations
- Arenas, soccer fields, libraries, etc.
Not just pro-athletes get concussions

Our concussion campaign gets the message out to Canadians about the importance of concussion recognition and management. This initiative is the result of a partnership between Preventable, Parachute, and the BC Injury Research and Prevention Unit. Through partnerships with various sports organizations and health and recreation agencies, we placed key messages in select recreational centers, ice rinks, soccer pitches and libraries.

Our goal is simple: encourage Canadians to recognize the potential severity of concussions. This starts with recognizing that concussions can happen to anyone.
Before you think only pro-athletes get concussions, have a word with yourself.
1. Astute Detection
2. Accurate Diagnosis
3. Optimal Management
4. Appropriate Follow-Up
“We’re at the end of the beginning...we know so much, yet so little”
Acknowledgement

CATT for Health Practitioners funded by:
  • Child Health BC
  • BC Children’s Hospital Foundation

CATT for Parents, Players and Coachers funded by:
  • LIFT Philanthropy Partners

BCCH Project Team for CATT- HP:
  • Dr. Shelina Babul (PI)
  • Dr. Paul Korn
  • Dr. Ran Goldman
  • Dr. Ian Pike
  • Ms. Christy Hay
  • Ms. Kate Turcotte
Thank you