

PREVENTING CONCUSSIONS IN SPORTS

Promoting Strategic Partnerships Between Brain Injury Associations and Coach Training Programs to Reduce Incidence Rates



Presented By Dr. Anthony Hutchinson, BSc, BSW, MSW, RSW, PhD

**Mild Traumatic Brain Injury:
*Current Directions in Diagnosis and Treatment***

18th Annual Conference on Neurobehavioural Rehabilitation in
Acquired Brain Injury

Hamilton Convention Centre, Hamilton, ON April 28-29, 2011

Concurrent Session C2: 11:15 am –12:15pm, April 28, 2011

Presentation Context

“The BEST ‘treatment’ for concussions is PREVENTION.”



- Dr. Anthony Hutchinson

Abstract

The Coaches Association of Ontario (CAO) has identified that coaches can play a more proactive role in preventing traumatic head injuries in sports such as mild TBI, concussions and post-concussion syndrome. Despite advances in awareness campaigns across Canada, there is much room for improvement on the part of sports leaders such as coaches and trainers to be more effective in educating, enabling and empowering players to better protect themselves from mild traumatic brain injuries. Based on an epidemiological approach, this presentation focuses on a centralized “head impact telemetry system” that informs coach training and certification facilitated by local brain injury associations in partnership with applied research institutions such as colleges and universities.

Presentation Objectives

- ◉ **Partnership Opportunities**: To highlight areas where brain injury associations (local, provincial, national) can connect with coaching associations to prevent mild brain injuries and reduce sports injury rates.
- ◉ **Accreditation Program**: To propose that mild brain injury and concussion prevention could be a core component of coach training and certification across a range of coaching domains that would be accredited with brain injury associations.
- ◉ **Epidemiological Approach**: To promote the development of a centralized “head impact telemetry system” as an evidence-based tool to track and measure successful prevention of brain injuries across sports domains.
- ◉ **Funding Opportunities**: To identify possible funding channels and support resources for brain injury and coaching associations to work together to plan, develop and implement enhanced brain injury prevention training modules and sustain ongoing accreditation.

Presentation Outline

◎ **The Perfect Storm**

- 1) Coach Association Recognition
- 2) Media Headlines/ Awareness Campaigns
- 3) Brain Injury Association Leadership
- 4) New Academic Evidence on Concussions

◎ **Opportunities for Partnerships**

- 1) Partnerships in Player Protection and Awareness
- 2) Partnerships in Coach Training and Accreditation
- 3) Partnerships in Evidence-Based Research
- 4) Partnerships in Measuring Success through Evaluation

◎ **Example of Good Model**

◎ **Paying for Partnership Initiatives**

The Perfect Storm

- 1) Coach Association Recognition
- 2) Media Headlines/ Awareness Campaigns
- 3) Brain Injury Association Leadership
- 4) New Research/ Evidence on Concussions



Coach Association Recognition

The Coaches Association of Ontario (CAO) reports that in Canada, brain injury is the number one killer and disabler of people under the age of 44. CAO further identifies that incidence rates are two times greater within the male population. It has been identified that coaches can play a vital role in preventing head trauma injuries such as mild brain injuries, concussions and post-concussion syndrome in sports.

Media Headline/ Awareness Campaigns

- The Public Health Agency of Canada (PHAC) reports that: Injuries requiring significant medical treatment by activity (% of injuries) – 55% riding in/ driving a car; 49% biking; 34% playing/ training for a sport (Pickett, 2008).
- The vast majority of injuries to young people happen at sports facilities (16 to 43 percent).... As children age, the incidence of injuries at home declines while the incidence of injuries at sports facilities increases (Pickett, 2008).



But concussions
are NOT just
about hockey...

Brain Injury Association Leadership

- ◎ Focused, collaborative responses can support more proactive practices to reduce incidence rates of head injury in sports and other activities beyond hockey such as: football; soccer; basketball; rugby; cycling; kabaddi; skateboarding; BMXing; snowboarding; and, skiing. Other activities such as cheerleading would also benefit.
- ◎ Shots to the body as well as shots to the head can be just as harmful.

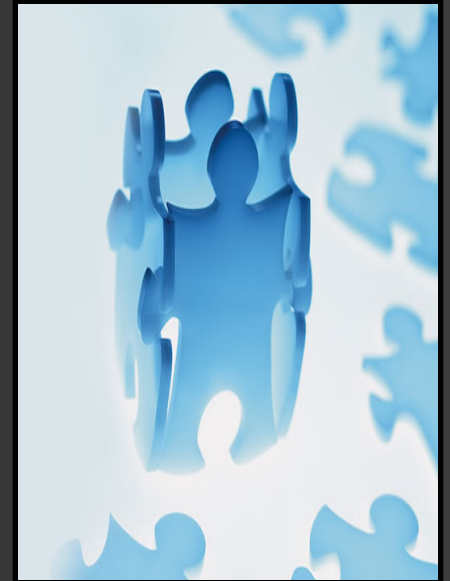


New Research/ Evidence on Concussions

- ◎ **Chronic Traumatic Encephalopathy (CTE):** Center for the Study of Traumatic Encephalopathy (CSTE), Boston University School of Medicine – Dr. Ann McKee
(March 2011: Bob Probert's brain who died age 45 – similar to 20 NFL football players)
- ◎ **Body-Checking Rules :** Injury Prevention Research Centre, St. Michael's Hospital, Toronto, ON – Dr. Michael Cusimano
- ◎ **Post-Concussion Syndrome:** Mayo Clinic

Opportunities for Partnerships

- 1) Player Protection and Awareness
- 2) Coach Training and Accreditation
- 3) Evidence-Based Research
- 4) Measuring Success through Evaluation



Player Protection and Awareness

Centers for Disease Control and Prevention (CDC) connects concussions and mild brain injuries as a sub-component of traumatic brain injuries:

- **About 75% of TBIs that occur each year are concussions or other forms of mild TBI (Centers for Disease Control and Prevention, 2003).**
- **Half of all cases are children aged 0 to 14.**
- **Centers for Disease Control and Prevention (CDC), the incidence of youth sports injuries has increased at an alarming rate and accounts for an estimated 2 million injuries, 500,000 doctor visits and 30,000 hospitalizations every year.**
- **The CDC also says that nearly 30 million children and adolescents participate in youth sports and nearly 3.5 million children under the age of 14 receive medical treatment for sports injuries each year.**

Coach Training and Accreditation



- ◎ In the last 25 years, coaching in Canada has been developed jointly by the federal and provincial governments through the ***National Coaching Certification Program (NCCP)***.
- ◎ Over 1 million coaches have participated Canada-wide (approx. 35% – 300,000+ of coaches from Ontario).
- ◎ Based on presenter's experience with ***Coaching Association of Canada (CAC)*** and ***Sport Canada*** there are opportunities for partnerships to optimize accreditation.

CAO Training Objectives

Coaching development programs objectives:

- To promote and develop coaching excellence in Ontario.
- To provide coaches at all levels with a standardized system for improving their knowledge and skills in the theory, techniques and practice of coaching.
- To increase the number of qualified coaches to work toward the goal of every athlete in Ontario benefiting from a trained coach.



One of Four Proactive Recommendations by the CAO for the Development of Coaches in Preventing Brain Injuries:

Contact local [brain injury association](#) and talk to an expert .

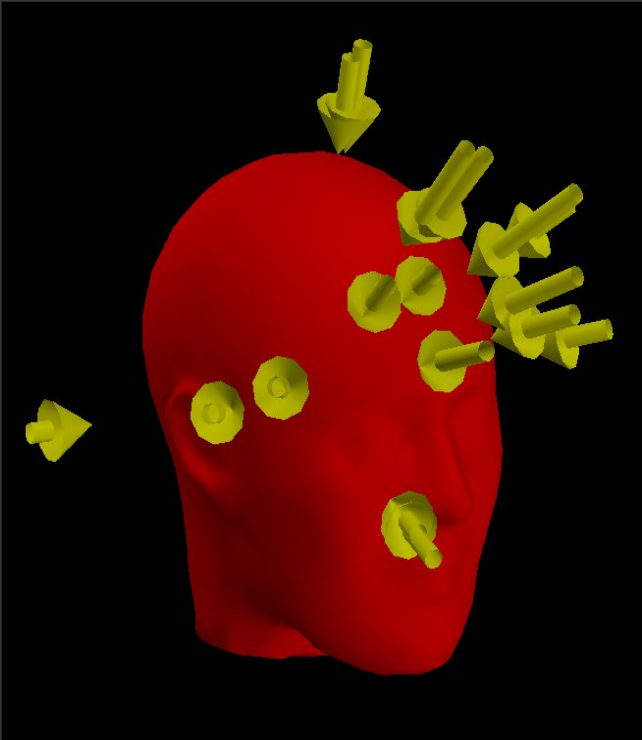
Evidence-Based Research

The Public Health Agency of Canada (PHAC) and the Centers for Disease Control and Prevention (CDC) in the United States both agree that data is critical to understand concussions and other forms of mild brain injury as data can:

- ◎ inform prevention strategies
- ◎ identify research and education priorities
- ◎ support the need for services among those living with a mild ABI

A centralized “head impact telemetry system” can inform coach training and certification.

Head Telemetry Impact System



Head Impact Telemetry System (HITS) – a software system originally designed to help detect potential concussion type collisions of American football players.

First developed at **Virginia Tech** and **Dartmouth College** in 2002, this system measures the impacts of players in real game time to help better understand how concussions and other head injuries happen. Relatively easy to use – “plug and play”.

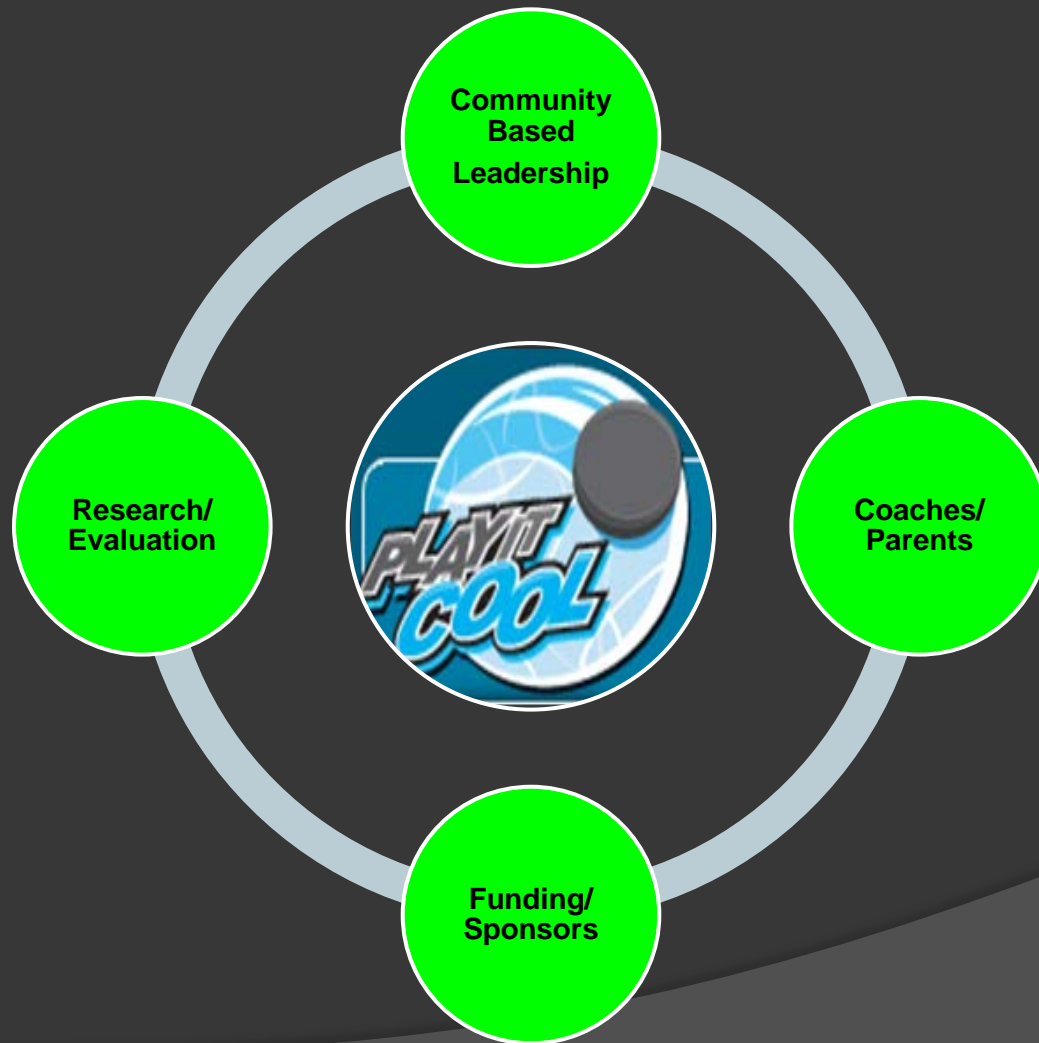
Real-time data can be compiled in a centralized-database across North America to clearly track incidence rates of possible concussion scenarios to inform prevention and safety standards. The **Canadian Institute for Health Information (CIHI)** has a good track-record in showing how data can be compiled, managed and used to support and facilitate positive outcomes.

Measuring Success Through Evaluation

The Ontario **Ministry of Health Promotion and Sport** works with *Provincial Sports Organizations* (PSOs) to maintain and develop of coaches through all levels of the *National Coaching Certification Program* (NCCP). Results are measured against a recognized set of standards, which in the case of coaches, is the NCCP.



Example of a Good Model



“Paying for” Play It Cool*

Identified online: <http://www.playitcoolhockey.com/parent/supporters.php#>

- 29 SPORTS.COM
- Canadian/ American Spinal Research Organization
- Downsview Park (Canada)
- Falconeri Munro Tucci LLP
- haggar, 1926
- Lakehead University
- meeting at the Bottom Line
- NHLPA
- One Goal Hockey Show
- Ontario Hockey Federation
- Ontario Neurotrauma Foundation
- Ontario Women’s Hockey Association
- RBC
- Shoot for a Cure Spinal Cure Research
- Source for Sports
- The Hockey News
- VIA Rail Canada
- Weekend Hockey Tournaments



Paying for Partnership Initiatives

Federal Government

- **Canadian Heritage (Sport Canada):** Amounts can vary. Online at: <http://www.pch.gc.ca/eng/1267385141593/1268413270876>
- **CIHR:** Usually up to \$200,000 per year for up to 5 years (usually partnership led by academic or hospital institution)
- **Health Canada:** Amounts can vary. Online at: <http://www.hc-sc.gc.ca/ahc-asc/finance/contribution/index-eng.php>
- **SSHRC (CURA):** Usually up to \$200,000 per year for up to 5 years (usually partnership led by academic or hospital institution)

Provincial Government

- **Ministry of Health Promotion and Sport:** Usually up \$50,000 per year through the Healthy Communities Fund online at: <http://www.mhp.gov.on.ca/en/healthy-communities/hcf/default.asp>

Other

- **Dr. Tom Pashby Sports Safety Fund**
- **Neurological Foundation of Ontario**

Resources/ References

Brain Injury Association of Canada (BIAC)
Canadian Institutes of Health Research (CIHR)
Coaches Association of Ontario (CAO)
Coaches of Canada
Coaching Association of Canada (CAC)
Hockey Canada
Mayo Clinic
Ontario Injury Prevention Resource Centre (OIPRC)
Ontario Ministry of Health Promotion and Sport
Ontario Neurotrauma Foundation
Play It Cool
Public Health Agency of Canada
Safe Communities Canada
Safe Kids Canada
Smart Risk
Social Sciences and Humanities Research Council
(SSHRC) of Canada
Sport Information Resource Centre (SIRC)
Sunnybrook RBC First Office for Injury Prevention
Think First

Website: www.biac-aclc.ca
Website: www.cihr-irsc.gc.ca
Website: www.coachesontario.ca
Website: www.coachesofcanada.com
Website: www.coach.ca
Website: www.hockeycanada.ca
Website: www.mayoclinic.com
Website: www.oninjuryresources.ca
Website: www.mhp.gov.on.ca
Website: www.onf.org
Website: www.playitcoolhockey.com
Website: www.phac-aspc.gc.ca
Website: www.safecommunities.ca
Website: www.safekidscanada.ca
Website: www.smartrisk.ca
Website: www.sshrc-crsh.gc.ca
Website: www.sirc.ca
Website: www.ounceofprevention.sunnybrook.ca
Website: www.thinkfirst.ca

Brain Injury Associations in Ontario

[Ontario Brain Injury Association \(OBIA\)](#)

[Ontario Alliance for Action on Brain Injury](#)

Belleville – [Brain Injury Association of Quinte District](#)

Chatham – [Brain Injury Association of Chatham Kent](#)

Durham Region – [Head Injury Association of Durham Region](#)

Fort Erie – [Head Injury Association of Fort Erie and District](#)

Hamilton-Wentworth – [Hamilton Brain Injury Association](#)

Kingston – [Brain Injury Association of Southeastern Ontario](#)

London and Region – [Brain Injury Association of London and Region](#)

Niagara Area – [Brain Injury Association of Niagara](#)

North Bay Area – [Brain Injury Association of North Bay and Area](#)

Ottawa Area – [Brain Injury Association of Ottawa Valley](#)

Peel-Halton – [Brain Injury Association of Peel & Halton](#)

Peterborough Area – [Four Counties Brain Injury Association](#)

Sarnia-Lambton – [Brain Injury Association of Sarnia-Lambton](#)

Sault Ste. Marie – [Brain Injury Association of Sault Ste. Marie & District](#)

Sudbury and District – [BIA of Sudbury & District Branch](#)

Thunder Bay – [BIA Thunder Bay & Area](#)

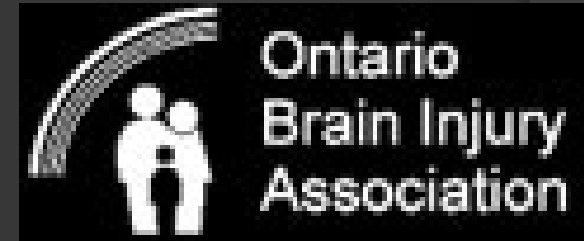
Timmins – [Brain and Seizure Association](#)

Toronto – [Brain Injury Society of Toronto](#)

Waterloo-Wellington – [BIA of Waterloo-Wellington](#)

Windsor-Essex – [BIA of Windsor and Essex County](#)

York Region – [York Region Head Injury Support Group](#)



Contact Information

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2008 Federal Citation for Citizenship

- ◎ GA (General Accountant)
- ◎ BSc (Developmental Psychology): Toronto
- ◎ BSW (Honors Bachelor of Social Work): York
- ◎ MSW (Master in Social Work: Social Policy): McMaster
- ◎ RSW (Registered Social Worker): OCSWSSW
- ◎ PhD (Epidemiology/ Social Work): WLU

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