



**The Canadian Sports Concussion Project at the Krembil Neuroscience Centre,
Toronto Western Hospital 2015**

The **Canadian Sports Concussion Project**, led by principal investigator **Dr. Charles Tator**, is the world's first project that aims to address the still-unknown long-term effects caused by concussions. **Dr. Tator** is a distinguished neurosurgeon and recognized around the world as an expert in brain injury prevention.

The **CFL Alumni Association** has taken a leadership role in promoting research and awareness of brain injury and concussion. A team of research scientists has been recruited by **Dr. Tator** to undertake this research and is based at the **Krembil Neuroscience Center, Toronto Western Hospital**.

The CFL alumni involvement includes former players, **Leo Ezerins**, Executive Director, CFL Alumni Association and on the Advisory Group **Matt Dunigan**. The Advisory group also includes former NHL hockey player **Ken Dryden** and former CFL Commissioner, Honourable **Roy McMurtry**, as well as, a number of prominent business executives, led by SmartCenters owner **Mitchell Goldhar**.

Our research is designed to understand **who is at risk** for the effects of multiple concussions and **what makes some people more vulnerable** than others. We are also trying to come up with better **diagnostic tools** to detect the effects of multiple concussions, and we are trying to figure out the **underlying causes** of their long term effects. All of the above information is critically needed to **develop treatments** to prevent or at least minimize the enduring effects of multiple concussions.

In order to carry out our research and to provide some clinical services (if needed) to former players our group has received over 1.5 million in grant and donor funding. For related research publications conducted by the group, please see the bottom of this letter.

The **Canadian Sports Concussion Project** has three separate components:

- 1) **A clinical study**, which involves former football players undergoing a series of assessments including, a neurological exam, a clinical neuropsychological assessment and a brain scan (MRI) to help us better understand any changes in the brain that may occur due to multiple concussions. *The clinical study also includes an intervention piece; please see below.*
- 2) **Brain donation**, for post-mortem examination of the brain, from **former football players** who choose to donate their brain to the research team upon death.
- 3) **Brain donation**, for post-mortem examination of the brain, from **members of the players' families** who choose to donate their brain to the research team upon death.

Former football players are being asked to take part in the clinical study and to donate your brain for autopsy upon passing. However, the donation of your brain is not a mandatory requirement. Likewise, you can agree to donate your brain without participation in the clinical study.

Your participation in the study and the personal results obtained are kept **strictly confidential**. You will not be named in any reports, publications, or presentations that may come from this study unless you are in agreement.

The study will involve 40 retired CFL football players and 20 healthy control participants in the research study.

Please note, you do not need to be experiencing symptoms to participate in this study. Retired players with no symptoms and those with symptoms are encouraged to consider participating in the study.

We have had over 30 participants enroll so we still need your support!

We have also had over 12 brains donated.

Clinical Intervention

An important component of the **Canadian Sports Concussion Project** is the opportunity for **treatment**. This part of the project is led by **Dr. Robin Green, PhD, C Psych** (Practice in Clinical Neuropsychology), Canada Research Chair (II) & Senior Scientist, at **Toronto Rehab**.

In addition to the **clinical neuropsychological assessment**, in which you will receive face-to-face and written feedback/recommendations based on your findings, all participants are eligible for three types of **treatment**.

These include:

- (1) **Cognitive Behavior Therapy** (to improve emotional symptoms and coping skills),
- (2) **Goal Management Training** (to enhance “executive [higher level] thinking”), and
- (3) **"Environmental Enrichment"** (an experimental intervention based partly on the principles of “use it or lose it”, which is designed to offset the *accelerated aging* that is observed in some people with multiple concussions).

Finally, a **workshop** providing education and support for alumni will also be offered at the hospital as well as **online enrollment**.

If you are interested in being a participant in the research study or to donate your brain please contact:

Project Coordinator, Mozghan Khodadadi, 416-603-5800.ext. 4025

Email: Mozghan.Khodadadi@uhn.ca

NOTE: The testing will be conducted at two UHN sites - Toronto Western Hospital and Toronto Rehab. There may be coverage for all of the travel expenses (hotel, transportation, and per diem) incurred to participate in the research program. Plan on two days of testing.

Published Clinical Papers (from our research)

Absence of chronic traumatic encephalopathy in retired football players with multiple concussions and neurological symptomatology.

Hazrati LN, Tartaglia MC, Diamandis P, Davis KD, Green RE, Wennberg R, Wong JC, Ezerins L, Tator CH. *Front Hum Neurosci.* 2013 May 24;7:222.

Chronic traumatic encephalopathy and other neurodegenerative proteinopathies.

Tartaglia MC, Hazrati LN, Davis KD, Green RE, Wennberg R, Mikulis D, Ezerins LJ, Keightley M, Tator C. *Front Hum Neurosci.* 2014 Jan 31;8:30.

Is there evidence for neurodegenerative change following traumatic brain injury in children and youth? A scoping review.

Keightley ML, Sinopoli KJ, Davis KD, Mikulis DJ, Wennberg R, Tartaglia MC, Chen JK, Tator CH *Front Hum Neurosci.* 2014 Mar 19;8:139

Environmental enrichment may protect against hippocampal atrophy in the chronic stages of traumatic brain injury.

Miller LS, Colella B, Mikulis D, Maller J, **Green RE.** *Front Hum Neurosci.* 2013 Sep 24;7:506