

Canadian Concussion Centre furthers understanding of postconcussion syndrome

The Krembil Neuroscience Centre's Canadian Concussion Centre (CCC) has published new research to further medical understanding and prediction of postconcussion syndrome (PCS). Individuals who do not recover from a concussion within the standard seven to ten days are said to have PCS.

By analyzing data collected from 284 concussed patients, Dr. Charles Tator and his research team were able to provide a more accurate picture of PCS and who it affects. The research also encourages updating the definition of PCS to reflect these findings.

"As PCS becomes more prevalent, we need clinical information about who gets it, how long it lasts, what the symptoms are and any other data that will help us better understand these patients," says Tator, neurosurgeon and project lead of the CCC. "Current medical definitions of PCS are too narrow and outdated. We need to incorporate these new findings as we learn more about the condition."

The study, published in the *Journal of Neurosurgery* on February 26, 2016 found that:

- Many study participants with PCS had numerous symptoms that lasted for several months or even years.
- The majority of the participants sustained multiple concussions, although 23 per cent had only one concussion.
- PCS was not only more severe with more symptoms in women, but women also reported fewer concussions before suffering from PCS.
- The number of symptoms in PCS sufferers may indicate how long the condition will last: for each additional symptom experienced, the recovery rate was reduced by 25 per cent.

In addition to the findings, the researchers redefined the parameters used to diagnose PCS. Previous definitions of the diagnosis required three or more specific symptoms to persist for at least three months before the condition was qualified as PCS. Furthermore, conflicting definitions of PCS exist between different medical bodies.

Tator concludes these narrow requirements are arbitrary, not established by clear, medical evidence, and actually exclude many sufferers of PCS. His team sought a more inclusive definition of PCS where the head injury must have been caused by concussion and not by other types of brain injuries, with at least three symptoms from a full list of concussion related symptoms lasting at least one month.

"We need a more uniform definition of PCS based on the accepted medical evidence about concussions and that excludes more serious brain injuries," explains Tator.

In addition to examining the demographic and clinical features of PCS, the long term goals of the research are to investigate whether developing PCS is a precursor to developing chronic traumatic encephalopathy (CTE), a specific type of brain degeneration associated with concussion.

