

It doesn't take a brain injury to have headache, dizziness and cognitive impairment

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Left hemisphere of J. Piłsudski's brain, lateral view. Credit: public domain

A team of researchers based at McMaster University has developed a new understanding of post-concussion syndrome, answering questions that have been plaguing researchers in the field.

Their study, published in the medical journal *Brain, Behavior and Immunity*, provides an explanation for why many people with even very trivial head injuries, or even injuries to other parts of their bodies, experience incapacitating post-concussion like syndromes.

These symptoms include headaches, dizziness, [cognitive impairment](#) and other [neuropsychiatric symptoms](#) such as irritability, anxiety and insomnia.

"It's inflammation that they have in common," said Michel Rathbone, a professor of medicine for McMaster's Michael G. DeGroote School of Medicine and a lead author of the paper. "Rather than a concussion, we'd like to propose a unifying umbrella term of post-inflammatory brain syndromes or PIBS."

He added that the research will encourage scientists to open up new lines of research into understanding the cause of post-concussion symptoms in the absence of obviously visible [brain injury](#) on conventional imaging and into the treatment of these symptoms by targeting [inflammatory mediators](#). For example, people who have a very subtle genetic change in a certain inflammatory protein have poorer recovery after brain injury.

It also explains why many [social factors](#) appear to play a role in development of [symptoms](#): "We know that the immune system can be modulated, or sensitized by the current and even the previous environment an individual was in. These social factors, such as preexisting stressors, depression or anxiety, may actually be, in a way, biological factors."

Rathbone added that this will provide hope for individuals with cognitive dysfunction after major infections, surgeries and traumas, as it suggests that current and future treatments for concussion may hold a benefit for these individuals.

"This research opens many doors for so many different patients. We are excited to be starting a totally new approach to the field, and we look forward to making a difference for the patients of the future."

Provided by McMaster University

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