

PUBLIC RELEASE DATE: 13-APR-2004

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Concussion causes emotional disturbances, say researchers

Researchers from the University of Toronto and the Toronto Rehabilitation Institute have documented negative mood disturbances such as depression and confusion resulting from sports concussions for the first time.

The study, which appears in the March issue of the Journal of Sport & Exercise Psychology, used injured athletes to chart the course of emotional recovery after a concussion. The researchers found that concussed athletes were not emotionally different from their peers before injury, but were more depressed and confused than their uninjured teammates after sustaining a concussion.

"Our results support a causal link between sports injury and subsequent emotional distress," says Lynda Mainwaring, a registered psychologist and associate professor in U of T's Faculty of Physical Education and Health. "Moreover, it highlights emotional changes that result from brain injury, which may help us determine when people are completely healed from a concussion." She notes that there has been little research into the emotional impact of concussions and subsequent recovery.

Three groups were used in the study - concussed athletes, uninjured teammates of the concussed athletes and healthy, physically active undergraduate students. Baseline mood state for athletes (members of U of T Varsity sports teams) was measured during a pre-season medical and neurological assessment. Those athletes who suffered a concussion during the season were then repeatedly reassessed in the weeks after injury.

The study found that the depression, confusion and total mood disturbance that resulted from the concussion disappeared within three weeks. There were also different rates of decrease for each emotion – depression resolved in approximately seven days while confusion and total mood disturbance took 17 to 21 days. Post-injury mood disturbances were not a result of the injured athlete's pre-injury emotional state.

According to Mainwaring and her colleagues at Toronto Rehab, the data they have generated could serve as a benchmark of emotional recovery from brain injury. "Because athletes are typically highly motivated to return to play, there's little risk that they will exaggerate their emotional symptoms."

A comparison of pre- and post-concussion emotional profiles of athletes to the emotional profiles of a healthy functioning comparison group could also highlight important emotional changes that result from brain injury, as well as point to different patterns of recovery. This information will help researchers obtain a clearer understanding of psychological recovery from sports injury that will eventually guide the clinical management of all types of injury, in particular short-term concussions.

According to Sean Bisschop, a research associate in Toronto Rehab's neurology service, these findings let people know that emotional changes are common after concussion and they should report mood changes to their clinician, just like any other symptom of concussion.

"This research is an exciting first step in our exploration of how mood interacts with the frequently discussed cognitive deficits that accompany concussion," Bisschop adds.

Concussions, or mild traumatic brain injuries (MTBI), are a result of an alteration of consciousness that does not necessarily cause someone to lose consciousness. Physical symptoms of concussion include blurred vision, headache, dizziness and loss of coordination.

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