

# Boys and girls who have had a traumatic brain injury differ in rates of harmful behavior

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Teenagers who said they had a traumatic brain injury in their lifetime, especially girls, also reported significantly higher rates of harmful behavior, according to new research.

The study looked at 13 harmful health behaviours –such as contemplating suicide, smoking marijuana or binge drinking– among 9,288 Ontario students between Grades 7 and 12.

"Both boys and girls were more likely to engage in a variety of harmful behaviours if they reported a history of TBI, but girls engaged in all 13 harmful behaviours we looked for, whereas boys were at higher risk of engaging in only nine," said Dr. Gabriela Ilie, lead author of the study and a post-doctoral fellow at St. Michael's Hospital. "Sex matters when it comes to traumatic brain injuries."

The research, published today in the online journal *PLOS ONE*, showed that girls with a history of TBI were more likely to have smoked cigarettes, been bullied, contemplated suicide or have increased psychological distress.

Researchers defined TBI as any hit or blow to the head that resulted in the teenager being knocked out for at least five minutes or spending at least one night in hospital due to symptoms associated with the head injury.

"Traumatic brain injuries are invisible but ignorance is not an excuse," said Dr. Ilie. "Parents, clinicians, teachers and coaches need to take all brain injuries, including concussions, seriously because their effects can affect students' formative years."

The data used in the study was from the 2011 Ontario Student Drug Use and Health Survey developed by the Centre for Addiction and Mental Health. The survey, one of the longest ongoing

school surveys in the world, contains responses from almost 9,000 students from Grades 7-12 in publicly funded schools across Ontario. The OSDUHS began as a drug use survey, but is now a broader study of adolescent health and well-being. Questions about [traumatic brain injury](#) were added to the survey for the first time in 2011.

"Many harmful behaviours in adolescence can be precursors to addiction and [mental health](#) issues later in life," said Dr. Robert Mann, senior scientist at CAMH and director of the OSDUHS. "The relationship between TBI and [mental health issues](#) is concerning and calls for greater focus on prevention and further research on this issue. We are seeing important links of adolescent TBI with both substance use and [mental health problems](#) and this combination of factors is something to watch as it may have a serious negative impact on these young people."

Dr. Ilie said the teenage years are already a turbulent time for some, as they try to figure out who they are and what they want to be. Since a TBI can exacerbate mental health and behavioural issues, she said primary physicians, schools, parents and coaches need to be vigilant in monitoring adolescents with TBI.

The study also looked at the harmful behaviours boys and girls engaged in most at different ages.

"Drinking alcohol, smoking cigarettes daily or being treated for physical injuries were three behaviours for which risk of harm changed at different ages," said Dr. Ilie.

Provided by St. Michael's Hospital

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