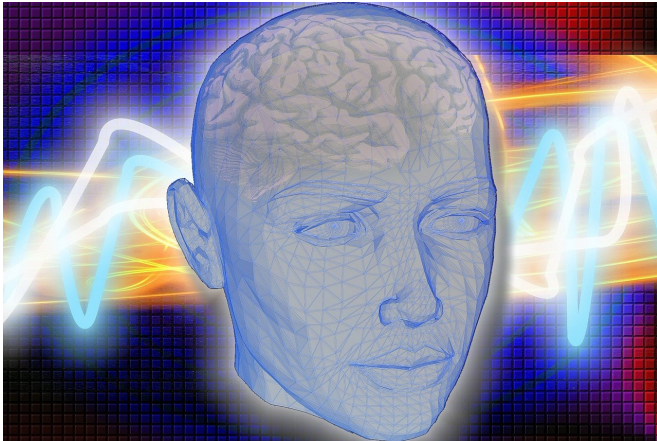


Nearly half of young drivers are resuming driving just weeks after sustaining a concussion

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Researchers from Children's Hospital of Philadelphia (CHOP) and the University of Pennsylvania School of Nursing (Penn Nursing) found that nearly half of adolescents who sought specialty care for a concussion were back to driving when asked approximately two weeks after the injury, even though few had returned to exercise and sports. The findings raise important concerns about the need for evidence-based guidance on safely returning to driving for adolescents with concussion. In the absence of standardized guidelines, providers should include driving as part of post-injury discussions with families.

The findings were published online today by the *Journal of Adolescent Health*.

More than 1.9 million children sustain a concussion each year, with adolescents representing more than 50% of these injuries. Concussions affect cognition and oculomotor function and thus can

impair abilities essential to safe driving such as visual scene assessment, processing [environmental risks](#) and executing [complex tasks](#).

"We're looking at this intersection of driving and concussion and see [teen drivers](#) returning to what is already a very high risk behavior for them and doing so with an injury known to cause [cognitive impairment](#)," said first author Catherine McDonald, Ph.D., RN, FAAN a Senior Fellow with CHOP's Center for Injury Research and Prevention (CIRP) and an Associate Professor of Nursing in the Department of Family and Community Health at Penn Nursing. "This study sought to provide information on what teens and families are actually doing in the absence of structured clinical guidelines."

Data from the Minds Matter Concussion registry were collected on 332 drivers between the ages of 16 and 19 who had been diagnosed with a concussion within 28 days of injury and seen between January 31, 2018 and August 31, 2018 at CHOP's specialty care concussion program. On average, they were seen 12 days post-injury. Patients answered questions about driving as part of an intake questionnaire, including whether they made changes to their post-injury driving behaviors as well as their return to school, exercise and sports behaviors.

Of these 332 drivers seeking specialty care for concussion, nearly half (47%) had already returned to driving since their injury. Of those who had returned to driving, three out of five reported no changes in their driving behavior. The remaining drivers made changes that reduced exposure to driving such as limiting the number of trips, limiting the distance of trips and avoiding driving at night.

Among those who had returned to driving since

their injury, only 28% had returned to exercise, and only 11% had returned to playing an organized sport, while 79% had returned to school. Thus, families who are making school and sports accommodations for their teen's injury may not be considering driving in similar light as a cognitively demanding and high-risk activity.

There were indications of symptom-based self-regulation among those who returned to driving. Those who made changes to limit time spent behind the wheel also had higher symptoms scores as compared to those who returned to driving without modifying their driving.

However, among those teens who were "driving without changes," about three quarters were ultimately recommended for cognitive rest or return to school with accommodations after the clinician's assessment, suggesting that a staged approach to cognitive activities is needed.

"In the absence of structured recommendations for returning to driving, we believe that young drivers may be getting behind the wheel too soon after their [injury](#)," said senior author Kristy Arbogast, Ph.D., Director of Engineering at CIRP and Co-Director of the Minds Matter Concussion Research Program at CHOP. "The management of [concussion](#) is evolving, and since driving may pose even more risks than exercise or sports, this study makes it clear that evidence-based guidelines are needed."

Meanwhile, researchers recommend that clinicians and families implement a gradual return to driving similar to, or more conservative than, the gradual return to school protocol. Teens who drive with cognitive, oculomotor and neurophysiologic deficits likely increase their risk of crashing and causing injuries to themselves and others on the road.

More information: McDonald et al, "Changes in Driving Behaviors After Concussion in Adolescents." *J Adolesc Health*, online December 15, 2020. [DOI: 10.1016/j.jadohealth.2020.10.009](https://doi.org/10.1016/j.jadohealth.2020.10.009)

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