

Young Drivers with ADHD

OUR UPDATE FOR THIS ISSUE focuses on two related questions:
How impaired are young drivers with ADHD and how can their driving be improved?

More impaired than their peers?

The goals of the first study were to assess differences in driving behavior between young adults with and without ADHD, as well as examine how behaviors associated with ADHD relate to driving risk. Using in-vehicle cameras over the course of three months, researchers recorded specific driving activity of 17 young adults with ADHD and 19 young adults without ADHD. The average age was approximately 21. Both participant groups were similar (that is, matched) in terms of race, age, gender, and education; neither group was on stimulant medication.

Observers who were blind to whether participants did or did not have ADHD counted the frequency of collisions and near misses, as well as risky driving behaviors, such as drastically changing speed or direction. Drivers with ADHD showed more risky behavior and also experienced more collisions and “near misses” than drivers without ADHD. In fact, the ADHD group was at fault in all but one collision recorded.

Circumstances surrounding these negative driving events differed for those with and without ADHD, such that distractions in the form of young passengers, poor weather conditions, and cellphone use appeared harder to overcome for drivers with ADHD. Risky driving behaviors considered illegal (for example, driving without a seatbelt or speeding) and thought to be associated with hyperactivity/impulsivity (for example, reaching for a moving object) were more present in those with ADHD, whereas some risky driving behaviors thought to be associated with inattention (for example, daydreaming) were more present in those without ADHD.

After a negative event, drivers with ADHD were more likely to look at the camera and show facial expressions of joy or excitement, compared to drivers without ADHD, who showed more fear and distress. Researchers acknowledge that results are preliminary and may not generalize to all drivers with ADHD, given that they only selected for young adults with at least one prior driving mishap.

Merkel RL Jr, Nichols JQ, Fellers JC, Hidalgo P, Martinez LA, Putziger I, Burket RC, & Cox DJ. (2016). Comparison of on-road driving between young adults with and without ADHD. *Journal of Attention Disorders*, 20(3), 260–269.




Does computer-based training help?

The second study investigated the impact of a computer-based driver training in teens and young adults with ADHD, given research (such as the study reviewed above) documenting higher risk among drivers with ADHD. The study utilized the Drive Smart intervention, which originally was developed for training pilots and contains exercises focused on identifying risks and making decisions during driving. In total, 25 young drivers ages 16–25 participated in the study across two sites in Australia.

The primary outcome was the Hazard Perception Test (HPT), which displays real video clips of traffic with potential hazards (for example, someone stepping into the road) and measures how long participants take to mouse-click on hazards (that is,

reaction time in seconds). After participants completed the HPT, half were randomly assigned to immediately receive the 60-minute Drive Smart intervention and half were assigned to a control condition (such as watching a 60-minute documentary about automobile history and being placed on a waitlist for Drive Smart).

At post-treatment, those who immediately received Drive Smart showed significantly greater improvement in reaction time on the HPT compared to those who had watched the documentary (the control condition). Next, those in the control condition received the 60-minute Drive Smart intervention and showed similar improvements in reaction time as the immediate group (although not significant, perhaps due to the small sample size). In sum, brief computer-based driving training may be a beneficial augment or substitution to medication in order to mitigate risk in young drivers with ADHD.

Bruce CR, Unsworth CA, Dillon MP, Tay R, Falkmer T, Bird P, & Carey LM. (2017). Hazard perception skills of young drivers with Attention Deficit Hyperactivity Disorder (ADHD) can be improved with computer based driver training: An exploratory randomised controlled trial. *Accident Analysis & Prevention*, 109, 70–77. 

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