

Evaluating ADHD medicines to reduce highway crashes

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The study will test how people with ADHD perform in driving simulations while using two different medications.

University of Virginia School of Medicine researchers are determining

whether an extended-release medication for attention deficit hyperactivity disorder can improve highway safety and help prevent accidents – especially during the hours when drivers' risk of crashing is greatest.

Daniel Cox, a leading expert in driving safety for [people](#) with ADHD, will use UVA's high-tech driving simulator to compare the driving performance of people with ADHD who are on the extended-release medication with their performance while on another established ADHD medication of shorter duration.

"Automobile accidents are a leading cause of death for people between ages 6 and 25. For adults who don't have ADHD, after age 25, the accident rate starts to decline significantly. That's not true for those with ADHD," Cox said. "They are elevated during adolescence – three to four times more collisions, injuries, etc. – but the rates don't go down, as they do for the general public, as they get older.

"The good news is that medications improve not only driving safety, they reduce collisions. So that's why this drug could be beneficial – it lasts a long time, and when ADHD people are on medication, their accident rates radically drop."

To determine the effects of the two drugs, [study participants](#) will do driving simulations while on one of the medications, then repeat the simulation at a later date while on the other. Cox's co-investigator, UVA's Dr. Vishal Madaan, will ensure each participant is on the optimum dose of each drug prior to the testing. The study is double blind, so neither the participants nor the researchers will know which drug is being tested at the time of the test.

"Ultimately, what participants get out of it is learning which medication works best for them," Cox said. "We may find that one medication is

better, generally speaking, than the other [medication](#), but it could be that for a particular individual the opposite is true."

On the two laboratory testing days, [participants](#) will do driving simulations at 7:30 a.m., 3:30 p.m., 6:30 p.m. and 9:30 p.m. "The reason we do this is because your accident rates in the general public are most common during rush hours – when people are going to work, when people are coming home from work, when people are going out at night and when people are coming back from being out at night. Among the general public, you have three times more deaths after 9 p.m. than before 9 p.m., so it's really a dangerous time to be out driving. You want to be sure you're optimally medicated during those most dangerous times."

Participants in the study (IRB No. 18201) will receive \$1,350 in compensation. They must be 18 to 35 years old, have ADHD, drive at least three times a week and have no other significant physical or mental ailment that affects their driving ability. A total of nine visits over six weeks will be required. For information, email driving@virginia.edu or call 434-924-8656.

Provided by University of Virginia

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