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Clinical predictors of older driver performance on a standardized road test. *Traffic Injury
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ABSTRACT

Objectives: To determine the relationship between clinical variables (demographics, cognitive testing, co-morbidities, and medications) and failing a standardized road test in older adults.

Methods: Analysis of on-the road studies performed in optimal weather conditions, between January 1, 2005 and May 1, 2007. The standardized testing was held at the National Older Driver Research and Training Center (NODRTC), Florida and included 127 adults aged 65 and older with current driver licenses, recruited by advertisement from the Gainesville, Florida community. Measurements consist of demographics, self-reported medications and medical conditions, cognitive testing including Trail Making Part B, Global rating score (pass/fail), and driver maneuver score (0-273, with 273 indicating perfect driving or zero errors).

Results: A total of 127 older adults completed the protocol. Mean age was 74.8 years (SD = 6.3); 46.5% females. Mean time for Trail Making Part B was 114.3 seconds (SD of 83). Among the 127 drivers, the mean Sum of Maneuvers Score was 238.9 (SD of 25.0) and 24 (19%) failed the driver test. Odds ratio estimates for failing the test included advanced age (6.7, 95% CI 2.2 to 19.8), presence of a neurological disease (2.8, 95% CI 1.2 to 6.5), and prolonged time to complete the Trail Making Part B cognitive test (2.5, 95% CI 1.0 to 5.9). Conversely, odds ratio estimates lowering the risk of failure included taking a non-diabetic hormonal medications (e.g. thyroid and estrogen drugs) (0.3, 95% CI .09 to 0.7) and having a musculoskeletal diagnosis (0.3, CI .1 to 0.7).

Conclusions: To our knowledge, this is the first study to examine the medical predictors of failing a standardized road test. Advanced age and prolonged time on Trail Making Part B were the two major predictors of test failure and a lower Sum of Maneuvers Score. Our study also found that having a neurological diagnosis (primarily cerebrovascular and Parkinson's Disease) predicted test failure. Medications from neurological class also predicted a lower Sum of Maneuvers Score. Further study needs to be done to explain the apparent protective effect of musculoskeletal conditions and hormonal medications.