

# Driving and dementia—assessing safe driving in high-risk older adults

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FAU's Louis and Anne Green Memory and Wellness Center operated by the Christine E. Lynn College of Nursing provides a comprehensive driving evaluation that includes tests of vision, physical functioning and cognitive skills required for safe driving. Credit: Florida Atlantic University

Driving is possibly one of the most complex procedures humans engage

in on a regular basis. Operating a motor vehicle involves a wide range of cognitive processes that require the ability to judge distances, manage multiple stimuli simultaneously, react quickly in an emergency, maintain attention for long periods of time, and correctly interpret traffic signs and signals.

Today, almost half of all drivers on the roadways are over the age of 65 and this number is projected to increase to 77 percent in the next 30 years. Adults over the age of 65 have the highest crash rate per mile compared to any other age group, and older driver fatalities are highest in Florida, California and Texas.

Driving also requires physical skills that are affected by age-related changes like deteriorating vision, decreasing hearing, and diminishing motor reflexes, coordination, and strength as well as effects from medications used for a number of conditions. Older adult drivers are frequently aware of these physical changes and do take precautions. But what about older adult drivers with declining cognition who can't make this determination on their own?

With the decline of [cognitive processes](#) in older adults due to Alzheimer's disease (AD) and other forms of dementia, there is heightened concern for public safety and unsafe driving in this population.

A researcher in the Christine E. Lynn College of Nursing at Florida Atlantic University and a collaborator have just published an article in the journal *Public Health Nursing* that sheds light on the cognitive factors that inhibit effective driving as well as recognizing older adults who may be at risk for unsafe driving.

"It is important to note that it's not a person's chronological age itself that puts the older driver at increased risk for driving accidents, but rather

the changes in functionality and skills needed for safe driving," said Lisa Kirk Wiese, Ph.D., first author and an assistant professor in FAU's Christine E. Lynn College of Nursing.

Memory plays a significant role in driving competence. At a basic level, memory provides drivers with the knowledge of how to operate a [motor vehicle](#); turning the key in the ignition, shifting gears, and distinguishing the brake from the gas pedal. Drivers also need to remember their destination so that they don't get lost. Studies have shown that there is a 62 percent increase in errors among individuals with AD, most notably in the attention skills of driving straight and in making left-hand turns. They also have pathological changes in visual processing areas, which significantly impacts visual processing, and consequently, driving performance.

"Drivers with dementia and even their caregivers may lack the insight needed to limit and eventually discontinue driving," said Wiese. "They might say something along the lines of 'I have never had an accident,' which is then confirmed by their loved one, and both are in denial that they could be an unsafe driver."

Wiese and co-author Logan Wolff, in the College of Psychology at Nova Southeastern University, note that self-rated methods for older drivers at risk are not effective because they may be overconfident and lack insight into their perceived versus actual driving abilities. The authors suggest a three-pronged approach to testing for safety in older adult drivers, which include a patient assessment and medication review; a computerized simulation using a touch screen interface, and a road test with a certified road test examiner.

"The task of identifying and helping older adults who are unaware of decline in cognition impacting road safety can be overwhelming for family members," said Wiese. "Nurses who care for older adults in

public health settings can play a vital role in understanding and identifying the cognitive mechanisms that inhibit effective driving and help to identify [older adults](#) who may be at risk for unsafe driving, and who would benefit from a driving evaluation."

FAU's Louis and Anne Green Memory and Wellness Center operated by the College of Nursing provides a comprehensive driving evaluation that includes tests of vision, physical functioning and cognitive skills required for safe driving. In addition, an on-road test in a dual-controlled vehicle is given, which was developed for the purpose of detecting driving errors made by cognitively impaired drivers. At the conclusion of the testing session, results and recommendations are provided, and if needed, options for alternative transportation and supportive services are discussed at length.

"Our [driving](#) evaluation program is one of several comprehensive services we provide to individuals with memory disorders and their families," said María Ordóñez, DNP, ARNP, GNP-BC, director of the Louis and Anne Green Memory and Wellness Center and an assistant professor in FAU's College of Nursing. "We are committed to helping our clients function at their personal best to maximize their quality of life and to respond to their unique needs with caring, expertise, and compassion."

Provided by Florida Atlantic University

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