FACT SHEET

Associations Between Falls and Driving Outcomes in Older Adults: A Systematic Review and Meta-Analysis

Background

• Driving is an important indicator of mobility and well-being for older adults
• A fall is defined as an event in which a person comes to rest inadvertently on the ground or floor or other lower level
• Prior work suggests that falls may increase the risk of subsequent motor vehicle crash (MVC) or other adverse driving outcomes
• Falls have the ability to impact driving in three ways:
  1. Falls may cause physical injury, limiting an older driver's ability to use the steering wheel, brake pedals, or otherwise perform essential driving maneuvers; e.g. a wrist fracture
  2. Falls may indirectly lead to reduced functional ability; e.g. increase in fear of falling leads to more limited physical activity, which may lead to physical and cognitive de-conditioning – "use it or lose it"
  3. Falls may heighten self-awareness of age-related physiological changes or precipitate a fear of injury; e.g. may lead to self-restricting driving behaviors like reduced mileage and day-driving only

Objective

• To better understand the research literature on the associations of falls in older drivers with subsequent MVCs, crash-related injuries, and driving performance and behavior

Methods

• A systematic literature review, including a narrative and a meta-analysis was conducted on previously published studies related to falls and ensuing driving behaviors
  ▪ Quantitative data for drivers aged 55 and older
  ▪ Cohort, case-cohort, case-control, and time-series designs
• Fifteen studies met the inclusion criteria
• This study is part of the AAA Foundation for Traffic Safety’s LongROAD study effort, a national, prospective cohort study designed to examine crashes, driving, and medical issues relevant to drivers 65 and older

***Continued***
**Key Findings**

**Increased risk of MVC**
- A fall history significantly increased the risk of subsequent crashes
  - Older adults who had fallen were 40% more likely to experience a subsequent motor vehicle crash than older adults who had not fallen
  - Many included studies adjusted for age and other factors such as neuromuscular function, vision, or cognition, suggesting that falls independently adversely affect drivers' functional abilities

- Limited evidence suggests that falls may also be associated with MVC-related injuries, hospitalizations, and deaths

**Inconclusive evidence**
- There was no evidence that falls were associated with:
  - Conditional driving avoidance
    - Avoidance of driving under certain conditions; e.g. at night, on highways, or alone
  - Driving difficulty
    - A self-reported measure, asking subjects whether they had difficulty driving under certain conditions, while performing certain tasks; e.g. turning left
    - Driving frequency, distance, or space
    - Driving cessation

**Implications**
- Falls in older adults are associated with a significantly increased risk of subsequent MVCs
- Safe mobility, both for walking and driving, is important for older adults’ well-being and health. These findings support the importance of fall prevention efforts
- Fall prevention programs may prevent MVCs, either by reducing injuries that can negatively impact safe driving or mitigating unnecessary self-restriction of driving, which could result in deteriorating driving skills
- SeniorDriving.AAA.com contains resources for senior drivers on strength and flexibility exercises - [AAA.com/fitness](http://AAA.com/fitness)

For more information on this study and the AAA Foundation’s other traffic safety research and materials, please visit [AAAFoundation.org](http://AAAFoundation.org).

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**March 2016**