

Perspectives for Driving and Alzheimer's Disease



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From a Population Perspective

- From 2005 to 2025 the number of licensed drivers aged 65 and older is expected to double
- Today, there are more than 4 million Americans 85 and older
- There will be 20 to 28 million people over age 85 by 2050
- Age is the highest risk factor for AD
 - **Up to 50% of persons over 85 have AD**
- 5.1 million Americans have AD. By 2050, up to 16 million Americans will be affected
 - **Every 72 seconds, someone in America**
- develops AD





From a Brain Perspective

- Alzheimer's disease is a degenerative disorder whose clear diagnosis is often not evident until well into the course of the illness
- The aspects of cognitive ability most affected in dementia are probably those most needed for reasonable safety in driving
 - **Memory**
 - **Sequencing skills**
 - **Insight and judgment/decision making**
 - **Processing speed**
 - **Visuospatial ability**



From a Road Perspective

- Driving is a complex activity that quick reactions, clear sensory abilities, and split-second decisions
- Persons with dementia do not perform as well as controls on tests of driver performance, including road tests and driving simulator evaluations.
- Caregiver crash reports support this, though not all state-reported data necessarily support this
- Compensatory strategies do not seem to be the answer
 - **Refresher courses**
 - **Cognitive enhancers**
 - **Copilots**
 - **Onboard technologies**
 - **Restricted or conditional licenses;**



From an Expert Perspective

- All groups recommend cessation of driving for those with moderate to advanced dementia; however consensus is lacking regarding those with mild dementia or Mild Cognitive Impairment
- American Association of Geriatric Psychiatry
 - Discontinuation of driving should be strongly considered for all patients with Alzheimer's disease, even in mild dementia
- American Academy of Neurology
 - CDR of 1, indicating mild dementia, should not be allowed to drive
- American Psychiatric Association
 - Those with history of traffic accidents or spatial or executive/judgment impairment should be particularly scrutinized.
- Alzheimer's Association
 - Diagnosis of AD is not, on its own, a sufficient reason to withdraw driving privileges. The determining factor in withdrawing driving privileges should be an individual's driving ability.



From an Assessment Perspective

- Clinical assessment
 - **CDR 0.5 or CDR 1.0?**
 - **The opportunity to consider the individual**
- Office-based testing
 - **Data correlative**
 - **Literature does not provide definitive evidence supporting use of specific office tests to identify hazardous drivers, but work goes on**
- Driving performance-based simulators
 - **Availability?**
- On-road performance-based evaluations
 - **Gold standard?**
 - **When available, can be costly**
 - **Is a slice of life an example of the whole?**



From a Patient Perspective

- Driving is an important factor in maintaining autonomy for older people
- Loss of licensure can have significant individual effects
 - **Direct health effects**
 - **Increase in depression, loneliness, social isolation**
 - **Stress on family and friends**
 - **Greater likelihood of institutionalization**
- Public transportation does not adequately replace mobility and freedom of operating one's own car



Conclusions?

- Have we reached a point where we can answer the critical question that faces clinicians in everyday practice: When should we advise a patient with early disease to cease driving?
- We currently have no proven, sensitive and specific clinical diagnostic or assessment-based procedures to provide reliable and valid “cut-points” for driving cessation.
- Relevant stakeholders organizations should sponsor consensus workshops involving various professional groups with expertise in the area to focus on the next steps needed in terms of methodological issues and a clearly focused research agenda.



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