How Old is Too Old To Drive?

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Brown Bag Webinar Series
Clinical Series: Our Graying Community

Personal background

BELGIUM

Personal background

KANSAS
Professional Background

• B./M.S. Physical Therapy and Rehabilitation Sciences
• Ph.D. in Biomedical Sciences
• Postdoc in Neurology and Mechanical Engineering
• Asst. Professor Physical Therapy

Professional Background

• Asst. Professor of Physical Therapy and Rehabilitation Science
• Driving Rehabilitation Specialist
• Director, Lab for Advanced Rehabilitation Research in Simulation (LARRS): http://larrs.kumc.edu
Objectives

To assist health care professionals in

1. Informing older drivers about legislation, screening, and interventions for fitness-to-drive
2. Referring older adults to driving rehabilitation specialists
3. Decide when and how to discuss driving retirement

Resources

1. The older adult driver: an overview
2. Is the older adult at increased risk of unsafe driving?
3. Screening and assessment of functional disabilities for driving
4. Clinical interventions
5. The driver rehabilitation specialist
6. Advising the older adult about transitioning from driving
7. Ethical and legal issues
8. State licensing and reporting laws
9. Medical conditions, functional deficits, and medications that may affect driving safety
10. Meeting future transportation needs of older adults
The Older Adult Driver

Facts and Figures

1. Adults > 65 years of age: FASTEST growing population
   15% in 2015 to 21% in 2030

2. Drivers > 65 years of age: FASTEST growing population
   15% in 2015 to 25% in 2025

3. Motor vehicle crashes (MVC) in drivers > 65 years of age
   2nd leading cause of injury-related fatalities

4. Car crashes are the leading cause of death for adults >65 years of age

5. Ageism: driving and age-related medical conditions may hinder safe driving

The Older Adult Driver

1. Older adults don’t get enough credit for their safe driving habits

2. Older drivers use more their seatbelts

3. They don’t drink and drive

4. They don’t text and drive

5. They self-regulate their driving, limiting night trips, highways, rush hour

6. Ageism: aging and age-related medical conditions may hinder safe driving

The Older Adult Driver

1. Driving is the only instrumental activity of daily living that can kill

2. Driving symbolizes mobility, independence, freedom and self-esteem

   Driving retirement: 6 – 10 years before end of life

3. Your driver’s license is literally your identity

4. Car is the favorite means of transportation:
   - In 85% of 75 – 79
   - In 78% of 80 – 84
   - In 60% of 85 +

5. Driving cessation leads to:
   - Increased social isolation
   - Decreased out-of-home activities
   - Depression
   - Mortality

   Increased social isolation / Decreased out-of-home activities / Depression / Mortality

   Institutionalization / Mortality

   
   References:
The Older Adult Driver

1. U-shaped curve
2. Number of fatal MVC have dropped from 1995 - 2008
3. Steep increase in fatal MVC after 74
   Fatal MVC in drivers > 80 years of age > 9x fatal MVC 75 – 69 years of age
4. Reasons
   More fragile to chest and head injuries: osteoporosis, atherosclerosis
   Older fleet of cars
   Driving skills may decrease with advanced age: decreased speed of processing; inattention; left turns

1. MVC are not always a good indicator of driving safety
2. Fitness-to-drive: (1) legal + (2) medical + (3) practical (see later)
3. Age groups:
   Middle-aged: 55 – 64 (n = 1386)
   Young-old: 65 – 74 (n = 1013)
   Old-old: 75 – 84 (n = 833)
   Oldest old: > 85 (n = 223)

Regression analyses (Middle-aged group used as reference group):

<table>
<thead>
<tr>
<th>Group</th>
<th>Physician's appraisal (fail)</th>
<th>Comprehensive FTD (fail)</th>
<th>MVC (one or more)</th>
<th>Traffic violation (one or more)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young-old</td>
<td>0.954</td>
<td>0.919</td>
<td>0.951</td>
<td>0.907</td>
</tr>
<tr>
<td>Old-old</td>
<td>0.958</td>
<td>0.932</td>
<td>0.962</td>
<td>0.932</td>
</tr>
<tr>
<td>Oldest old</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Role of the health care professional

Recognize that age-related changes may impact driving
Inform older drivers about rights to mobility
Inform older drivers about privileges of driving
Assist in driving prolongation
Assist in driving rehabilitation
Assist in driving restriction
Assist in driving cessation
Assist in exploring driving alternatives
Referral Process

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Legislation

Kansas

Kansas has not mandatory reporting.
It is the ethical duty of the health care professional to discuss driving issues with patient.
Document in records that driving was discussed.
There is “usually” no risk of liability suits for good faith reports.
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Screening

1. Purpose: To identify drivers with functional deficits who need detailed assessment
2. To screen out “at risk” drivers → stringent criteria
3. Screening should be cheap, easy, accurate, and not take > 45 min
4. Self Screening
   Am I a Safe Driver
5. Proxy Screening
   Fitness-to-Drive Screening Measure
6. Health Professional Screening

Screening

< 26 → further assessment (men)  > 61 → further assessment
< 51 → further assessment*  > 180 → further assessment*
> 2 errors → further assessment*
Screening

Directions

Compass

Road Sign Recognition

Referral Process

Referral Process
Assessment

1. Purpose: In-depth evaluation to determine who are truly at risk
2. More elaborate assessment, including
   - Off-road assessment
   - Driving simulator assessment
   - On-road driving assessment
3. Driving rehabilitation specialist
   - Health care professional
   - Qualified to make fitness to drive RECOMMENDATION
   - Final responsibility: referring MD / Medical Advisory Board

http://www.aded.net
Assessment
1. Out of pocket expense (unless VA benefits)
2. Need medical referral
3. 3-4 hours
4. Comprehensive assessment
   - Cognitive functions
   - Visual functions
   - Motor functions
   - Driving simulation
   - On-road testing

STISIM Drive, STI Inc, Model 500-OT

Lane positioning  Brake reaction time  Overtaking

Referral Process

Useful Field of View®
Speed of Processing
Divided Attention
Selective Attention

Referral Process

Resources

Interventions¹

1. Classroom training: limited evidence of benefit
2. Car modifications: limited evidence of benefit
3. Cognitive training programs
4. Physical fitness programs
5. Simulator training
6. (On-road training)

¹Note: A systematic review demonstrates improved performances in older adults with interventions. See Golisz, K. (2014).
Interventions

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Car modifications

1. Handybar
2. Most common piece of adaptive equipment
3. Use in loop on door frame
4. Much more secure than door frame or walker, which may move and cause fall, unsteadiness
Seat Belt Handle or Ribbon

1. Used for limited shoulder AROM

Leg Lifter

1. May be used for driver or passenger
2. Rigid loop is preferable to cheaper option of soft loop

Panoramic Mirrors

1. Rearview mirror can be placed over existing mirror
2. Blind Spot Mirrors assist with increased vision to the side and rear of vehicle
Interventions

1. Classroom training: limited evidence
2. Car modifications: limited evidence
3. Cognitive training programs: limited to moderate evidence
4. Physical fitness programs: evidence not established
5. Simulator training: moderate evidence
6. (On-road training)
Simulator training

Interventions

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2. Car modifications: limited evidence
3. Cognitive training programs: limited to moderate evidence
4. Physical fitness programs: evidence not established
5. Simulator training: moderate evidence
6. (On-road training): strong evidence
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Advising the older adult about transitioning from driving

- Acknowledge that loss of driving privileges does not only result in decreased mobility, but may also lead to increased risk of social isolation, increased depression, loss of self-esteem, loss of independence...
- Advance planning of driving retirement
- There are alternatives
  - Support from family and friends
  - Public transportation and commercial transportation
  - Elder care locator: www.eldercare.gov
Take home message

- Accurate screening tools assist in referring patients for formal driving evaluation
- Driving Rehabilitation Specialists can assist with decision making, car modifications, and transportation alternatives
- Training helps!
- Any training is better than no training