AGENDA

Overview of Driving
Connecting Clues about Driving Safety
Maximizing Driving Safety
Mobility Planning
Strategies for Resistance
Resources
Q & A
The Driving Task: Common, Valued, & Complex
Driving Is Important on Many Levels

Transportation in a vehicle-dependent culture

Independence, autonomy, freedom

Visible signal of function

Tied to social roles, adulthood, masculinity

(Nearly) Lifelong, daily behavior for many

= threatening to potentially or actually stop
“Ideal” Driver: Autonomous Vehicles
<table>
<thead>
<tr>
<th>A safe driver is one who:</th>
<th>In spite of:</th>
<th>Required abilities:</th>
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<tbody>
<tr>
<td>1) maintains constant yet shifting attention on the roadway</td>
<td><strong>Conditions:</strong> weather, light, vehicle, road maintenance</td>
<td><strong>Sufficient sensory input</strong> (primarily visual) to react to changing environmental</td>
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<tr>
<td>environment</td>
<td><strong>Road demands:</strong> route familiarity, traffic congestion, construction, unpredictable drivers</td>
<td><strong>Maintaining attention</strong> on sensory input in order to process, prioritize, and</td>
</tr>
<tr>
<td><strong>WHILE</strong></td>
<td>and pedestrians</td>
<td>react appropriately to dynamic on-road environment</td>
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<tr>
<td>2) mechanically operating the vehicle to control and adjust</td>
<td><strong>Distractions:</strong> cell phones, passengers, boredom</td>
<td><strong>Physical strength and flexibility</strong> to operate vehicle, as well as sufficient</td>
</tr>
<tr>
<td>speed, lane positioning, and direction <strong>WHILE</strong></td>
<td></td>
<td>reaction speed to respond appropriately to on-road demands</td>
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<tr>
<td><strong>ALSO</strong></td>
<td></td>
<td></td>
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<tr>
<td>3) applying rules of the road (signaling, responding to</td>
<td><strong>Emotional regulation:</strong> influenced by stress, sleep, nutrition, blood sugar, pain, meds,</td>
<td></td>
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<tr>
<td>regulatory signs, situational right of way, speed limit)</td>
<td>previous experiences</td>
<td></td>
</tr>
<tr>
<td><strong>BUT ALSO</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) remaining aware of route navigation to arrive at desired</td>
<td></td>
<td></td>
</tr>
<tr>
<td>location.</td>
<td></td>
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</table>
Functional Requirements for Driving

- **Vision**
  - Contrast Sensitivity
  - Field of view

- **Cognition**
  - Memory
  - Judgment
  - Decision making
  - Attention

- **Musculoskeletal flexibility and strength**
  - Turning neck, torso, arms
  - Turning wheel
  - Using pedals

- **Vision + Cognition + Motor Control = Reaction Time**
Dementia and Driving

- As a progressive brain deteriorating condition, dementia diagnosis signals that **driving cessation is not an if, but a when**.
- May still be safe in early stages, not later (moderate or severe), so start preparing as soon as possible

**Additional challenges**

- Driving is overlearned; after decades of a practice, a person with limited higher-level cognitive function may still be able to mechanically operate a vehicle (open door, start engine, turn wheel, press pedals)
- Forgetting or disbelieving diagnosis, recommendations, agreements
- Emotional reactions due to frustration, confusion, and restricted autonomy
Ways to Assess, Maintain, and Improve Driving Safety
Connecting Clues: Minor On-Road Errors

- Repeatedly not signaling for turns or lane changes
- Drifting within the lane
- Noticing stop signs or signal color at the last minute
- Following too closely to other vehicles
- Driving at speeds that are inconsistent with posted speed limits
- Difficulty turning to check over shoulder for blind spots
- Difficulty navigating turns
- Parking inappropriately
Connecting the Clues: Critical On-Road Errors

- Doesn’t observe stop signs or signals
- Drifting into another lane
- Getting lost in familiar places
- Misjudging spacing while completing an unprotected left turn
- Not yielding right of way to other traffic
- Stopping for no reason
- Having difficulty moving feet between the gas and the brake or confusing the two pedals
- Near collision with another vehicle, requiring evaluator intervention
Connecting the Clues: Day-to-Day Function

● Vision loss
  ○ Blurry vision (glaucoma, diabetes)
  ○ Blind spots or reduced peripheral vision (macular degeneration)
  ○ Difficulty seeing in low-light conditions (age)
  ○ Visual distortion/Difficulty with depth perception*

● Gait change (abnormal walking pattern)*

● Falls

● Peripheral neuropathy (loss of sensation in hands and/or feet)
Connecting the Clues: Day-to-Day Function (cont.)

Challenges with sustained attention (TV show, conversation)

Needs Assistance with Instrumental Activities of Daily Living (IADLs):

- Preparing hot meals
- Managing medications
- Handling finances
- Shopping
- Using telephone or remotes
Connecting the Clues: Stage of Dementia*

<table>
<thead>
<tr>
<th>Clinical Measure of Dementia Severity</th>
<th>No Dementia (CDR=0)</th>
<th>Questionable or Very Mild Dementia (CDR=0.5)</th>
<th>Mild Dementia (CDR=1.0)</th>
<th>Moderate to Severe Dementia (CDR=2.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the Dementia Specialist: Clinical Dementia Rating</td>
<td>No memory loss or inconsistent memory loss Fully oriented Judgment intact Function intact Personal care intact</td>
<td>Consistent slight forgetfulness Slight difficulty with orientation or judgment Slight impairment in community activities or home activities Personal care intact</td>
<td>Memory loss interferes with everyday activities Geographic disorientation Moderate impairment in judgment Mild but definite impairment of community or home activities Needs prompting for personal care</td>
<td>Severe memory loss Severe difficulty with time relationships and judgment No longer independent in activities Only simple chores preserved Needs assistance in personal care</td>
</tr>
<tr>
<td>For the Clinician: Short Blessed Test Mini-Mental Status Exam</td>
<td>1.2 (1.9)*</td>
<td>4.8 (5.9)#</td>
<td>15.4 (5.2)#</td>
<td>18.5 (5.5)##</td>
</tr>
<tr>
<td></td>
<td>28.9 (1.3)#</td>
<td>23.1 (2.5)@</td>
<td>20 (3.9)#</td>
<td>16.1 (4.7)#</td>
</tr>
<tr>
<td>For the Neuropsychologist: Logical Memory</td>
<td>8.8 (2.9)*</td>
<td>4.3 (2.7)+</td>
<td>1.9 (1.7)+</td>
<td>1.5 (2.3)**</td>
</tr>
<tr>
<td>Block Design</td>
<td>30.1 (8.6)*</td>
<td>22.2 (9.8)</td>
<td>12.0 (9.6)</td>
<td>3.2 (6.6)+</td>
</tr>
<tr>
<td>Digit Symbol</td>
<td>45.6 (11.5)*</td>
<td>31.7 (13.6)</td>
<td>17.0 (13.3)+</td>
<td>8.3 (8.7)+</td>
</tr>
<tr>
<td>Trailmaking A</td>
<td>40.9 (20.0)*</td>
<td>70.2 (39.2)+</td>
<td>108.3 (50.5)+</td>
<td>XXX</td>
</tr>
<tr>
<td>Benton Copy</td>
<td>9.6 (.88)*</td>
<td>9.1 (1.6)+</td>
<td>7.3 (2.7)+</td>
<td>XXX</td>
</tr>
</tbody>
</table>

Road Test Failure
- CDR 0 = 1.6%
- CDR .5 = 13.6%
- CDR 1 = 33.3%

What to do? Start Talking Now

**Green Light**
- No red flags
- Monitor at intervals

**Yellow Light**
- Red flags/co-morbid illnesses
- Decline in traffic skills
- Deficits on IADLs
- Consider referral and caution!

**Red Light**
- Driving Retirement/Counseling
- Stop!
Maintaining & Improving Driving Safety: Function

**Building blocks of function**
- Nutrition
- Hydration
- Sleep
- Exercise
- Connection
- Meaningful activities

**Barriers to function**
- Vision loss (correct if possible with new prescription, surgery, etc.)
- Polypharmacy (reduce unnecessary or impairing medications)
- Depression (recognize and treat)
- Isolation (continue valued interactions)
- Physical pain/stiffness
Maintaining & Improving Driving Safety: Education

Refresher courses
- AAA
- AARP
- National Safety Council (under Defensive Driving)

Practice
- Drive Focus (iPhone & iPad app)

Professional Training and/or Adaptations
- Certified Driving Rehabilitation Specialist (CDRS) $$
Preparing for a Nondriving Future
Mobility Planning

Start preparing before transition to nondriver, include driver when possible

- **Acknowledge** emotional transition from driver to nondriver; others will be asked to support continued mobility
- **Priorities**: household, medical, social, nature, spiritual, etc.
- **Communication**: discussing expectations with family or others expected to provide rides and/or other support
- **Preparation**: Identify and practice nondriving options available in community (search for local transportation options at www.ridesinsight.org)
- **Context**: Consider how physical environment affects transportation mobility (function/demand fit)
Nondriving Transportation Alternatives

Personal
● Rides from Friends/Family
● Walking

Public
● Buses
● Light rail/trains
● Specialized transport (e.g., for seniors or people with disabilities)

Private
● Taxis
● Volunteer Programs
● Rideshare (e.g., Uber, Lyft)

Search for available options by ZIP code at ridesinsight.org
Consider Individual Resources

Personal transportation mobility can be enhanced or inhibited by:

- **Functional abilities**: physical & cognitive
- **Community**: walkability, safety, transportation options, services
- **Social connections**: relationships that provide meaning, emotional support, information, tangible support
- **Finances**: increases options for paid transportation, delivery, home-based services
- **Knowledge/Experience**: know/have used local alternative transportation options, have adapting to other limitations (especially mobility)
- **Personality**: willing to try new things, adaptability to change, outlook
- **Choice**: Consider voluntary surrender of license at DMV & replace with state ID
Strategies for Resistance

- Focus on medical conditions as the reason to stop driving (e.g. vision too impaired, slowed reaction time)
- Make a contract of when or why person will stop driving (see Hartford “At the Crossroads” guide or Alzheimer’s Association for examples)
- Physician “prescription” for driving retirement
- Discuss financial implications of crash or injury
- Report to state/revoke license
Missouri Reporting Process

- Submit written and signed form detailing concerns with signature (Form 4319 for general reporting).

- Driver informed their license is suspended until decision is reached, usually required to complete additional testing (clinical and/or on-road) within 30 days.

- Good faith reporters are protected by law.

[dor.mo.gov/faq/drivers/unsafe.php](dor.mo.gov/faq/drivers/unsafe.php)
Driver Condition Report (Form 4319)
Additional Resources

Alzheimer’s Association (www.alz.org)

The Hartford
At the Crossroads
Dementia & Driving Toolkit
www.hartford.com

My Mobility Plan
(www.cdc.gov/motorvehiclesafety/older_adult_drivers/mymobility/)
In Summary

- Driving is not just about transportation
  - intertwines with social connections
  - one’s sense of self
  - visible sign of independence

- Driving is a very complex behavior, requiring coordination of vision, cognition, and motor control to react in ever-changing roadway environments

- There are ways to help drivers and their caregivers prepare and plan for nondriving future in order to help mitigate negative experiences and outcomes
  - Start talking early
  - Engage driver in prioritizing
  - Communicate with other stakeholders involved