DRIVING EVALUATION

WHEN AND HOW TO TAKE AWAY THE KEYS

OHSU, 2021

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GOALS OF SESSION

• Describe **when** to screen for driver safety

• Demonstrate **how** to screen for driver safety

• Describe **when** to send DMV form vs. refer to OT

• Demonstrate **how** to report or refer for evaluation
By 2050 drivers >65 yrs old = 25% of the US driving population
Life expectancy exceeds driving fitness expectancy in the US
~6 yrs for men
~10 yrs for women

Most older adults need to retire from driving in their lifetime
In 2019, motor vehicle crash death rates per capita increased substantially among males and females beginning at ages 75-79

http://www.iihs.org/iihs/topics/t/older-drivers/fatalityfacts/older-people/
Passenger vehicle fatal crash involvements per 100 million miles traveled by driver age, April 1, 2016 - March 31, 2017

http://www.iihs.org/iihs/topics/t/older-drivers/fatalityfacts/older-people/
Involvement Rates per 100,000 Licensed Drivers for Older Drivers in Fatal Crashes, by Age Group and Sex, 2018

- **65–69**:
  - Male: 22.66
  - Female: 7.81
  - 16+: 22.03
  - 65+: 16.15

- **70–74**:
  - Male: 22.37
  - Female: 7.72
  - 16+: 22.96
  - 65+: 10.02

- **75–79**:
  - Male: 27.38
  - Female: 11.04
  - 16+: 27.38
  - 65+: 11.04

- **80–84**:
  - Male: 31.82
  - Female: 12.20
  - 16+: 31.82
  - 65+: 12.20

Sources: FARS 2018 ARF; Licensed Drivers – Federal Highway Administration

https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812928
Older Driver Involvement Rates per 100,000 Licensed Drivers in Fatal Crashes, by State, 2018

Sources: FARS 2018 ARF; Licensed Drivers – Federal Highway Administration
Note: 2018 licensed driver data for Puerto Rico is not available.
WHO IS AT RISK?

2019 Data from US Department of Transportation looking at fatal crashes involving a driver 70+

- 59% drivers themselves
- 14% were their passengers
- 27% were occupants of other vehicles, motorcyclists, bicyclists or pedestrians
Studies looking at self-rated driving ability show that older drivers tend to score themselves higher on ability as their skills decline.\(^9\)

However, most older adults agree that if a primary care provider advised them to stop driving they would do so.\(^{11}\)

Given this dichotomy between driving perception and ability, it is clearly within the role of providers to assess and counsel older drivers.
DRIVING = INDEPENDENCE
TRAINS

ALL ABOARD!
WHEN?
DRIVING IS A COMPLEX TASK

Visual acuity and perception
Cognitive abilities: executive function and multitasking
Neuromuscular function
TRIGGERS FOR DRIVER SCREENING
TRIGGERS FOR DRIVER SCREENING

Changes in Vision
TRIGGERS FOR DRIVER SCREENING

Changes in gait, neuro or MSK exam
Changes in memory or cognition
TRIGGERS FOR DRIVER SCREENING

Medications - Polypharmacy
TRIGGERS FOR DRIVER SCREENING

Driving Concerns

I’m sorry that everytime you are in the car with me you think you are going to die.

your ecards

www.yourcards.com
HOW?
There is no single validated screening tool to assess driving safety and thus evaluation requires a multifaceted approach.
VISION
VISION

"Snellen chart" by Jeff Dahl - Own work by uploader, Based on the public domain document: [1]. Licensed under CC BY-SA 3.0 via Commons https://commons.wikimedia.org/wiki/File:Snellen_chart.svg#/media/File:Snellen_chart.svg
VISION

Diagram showing the visual path from the eyes to the brain, including labels for Optic nerve, Optic chiasm, Optic tract, Lateral geniculate nucleus, Optic radiation, and Striate cortex.
Same Scene Viewed By A Person With:

Normal Vision

Cataracts

http://www.krishnavision.com/
Same Scene Viewed By A Person With:

Normal Vision

Diabetic Retinopathy

http://www.krishnavision.com/
Same Scene Viewed By A Person With:

Normal Vision

Glaucoma

http://www.krishnavision.com/
Same Scene Viewed By A Person With:

**Normal Vision**

**Age-Related Macular Degeneration**

http://www.krishnavision.com/
NEUROMUSCULAR FUNCTION
History of falls is associated with motor vehicle accidents in which older drivers were at fault.\textsuperscript{36}

Driving impairment is associated with:
- Inability to reach above the shoulder
- Decreased neck ROM
- Impaired knee flexion
- Inability to walk for more than one block.\textsuperscript{37,38}
NEUROMUSCULAR FUNCTION

Neuro/MSK exams

• Weakness
• Flexibility
• Peripheral neuropathy
• Motor coordination

https://meded.ucsd.edu/clinicalmed/musc_external_rotators.jpg
Timed up and go (TUG) was not a reliable indicator of driving ability, however the rapid pace walk test is associated with driving ability.

- 20 feet (10 feet up and back) using any assistive device they normally use.
- >9 seconds is associated with driving impairment.
COGNITION
MEMORY

Mini Cog
  - 3 item recall
  - Clock draw

Executive function testing: trails B test
MOCA

- Attention
- Judgement
- Reaction Time
- Planning and sequencing
- Impulsivity
- Visuospatial
- Memory
SUBSTANCES
MEDICATIONS
ALCOHOL USE

2014 Data from the National Survey on Drug Use and Health Report 4.1% of drivers over the age of 65 drove under the influence of alcohol in the preceding year - roughly the same percentage as drivers aged 16-17 years old.\textsuperscript{15}

Older adults are at even greater risk due to increased rates of drug interactions, decreased alcohol metabolism, and underlying cognitive impairment.\textsuperscript{16}
DRIVING CONCERNS

Does the patient limit their driving?
Has family expressed concerns?

http://i.dailymail.co.uk/i/pix/2015/05/04/15/284C70B900000578-3067329-image-a-52_1430750640045.jpg
MANDATORY REPORTING TO DMV OR REFERRAL???
Providers should know local reporting laws and should feel comfortable counseling their patients on driving cessation and alternative transportation strategies.
MANDATORY REPORTER LAWS

Report
- Severe
- Uncontrollable
- Permanent

Refer
- Mild
- Potentially controllable
- Potentially reversible
VISION

Refer to ophthalmology specifically for drivers evaluation
NEURO

Strength
Sensation
Flexibility
Motor Coordination

DMV Report
• Severe
• Uncontrollable
• Permanent

OT Referral
• Mild
• Controllable
• Reversible
MEMORY

DMV report
- Mod-Severe Dementia
- Frontal-temporal dementia
- Dementia with Lewy Bodies
- Parkinson’s dementia

OT Referral
- MCI
- Mild dementia
DMV report only if medications severely impacting function with plan to continue >6 months

- Opiates
- Hypnotics
- Anticholinergics
- orthostatic hypotension
DRIVING CONCERNS

Voluntary retirement from driving

OR

REFERRAL
VOLUNTARY RETIREMENT

SURRENDER OF DRIVING PRIVILEGE(S)

Please check appropriate box(es), sign and date only the one section that applies to you.

CUSTOMER INFORMATION
NAME [PRINT LAST, FIRST MIDDLE] DATE OF BIRTH CDL / CUSTOMER NUMBER

SURRENDER OF PRIVILEGES
I am surrendering my: (Check appropriate box(es).)

☑ Out of State Commercial Driver License (CDL)
☐ CDL Endorsement(s): [ ]
☐ CDL Instruction Permit (CDL IP)
☐ Class C License
☐ Instruction Permit
☐ Motorcycle Endorsement

If I wish to regain the privileges I have surrendered, I understand that I MUST take all appropriate tests.
REPORT
At-Risk Driver Program for Medical Professionals

Overview

Certain medical professionals are required to report drivers with severe functional or cognitive impairments that are uncontrollable by surgery, medication, therapy, a device or special technique.

Note: If you are not a medical professional and would like to submit a report about an at-risk driver, see our Voluntary Reporting page. If you would like to report an aggressive or intoxicated driver, see our Reporting a Problem Driver page. General information about the program can be found at our At-Risk Driver Program page.

You may use the links below to go directly to any section:

- Mandatory Reporters
- Which Patients to Report
- The Mandatory Impairment Referral Form
- How to Report
- After Reporting
- Helping Your Patients Retire from Driving
- Related Information

<table>
<thead>
<tr>
<th>FUNCTIONAL IMPAIRMENTS: (Check all that apply.)</th>
<th>COGNITIVE IMPAIRMENTS: (Check all that apply.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] VISUAL ACUITY and/or FIELD OF VISION</td>
<td>[ ] ATTENTION</td>
</tr>
<tr>
<td>Patient is unable to meet the state vision</td>
<td>[ ] JUDGMENT &amp; PROBLEM SOLVING</td>
</tr>
<tr>
<td>standards listed below, even with correction:</td>
<td>[ ] REACTION TIME</td>
</tr>
<tr>
<td>• Acuity must be no worse than 20/70 in the</td>
<td>[ ] PLANNING &amp; SEQUENCING</td>
</tr>
<tr>
<td>best eye</td>
<td></td>
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<tr>
<td>• Horizontal field of vision of 110 degrees</td>
<td>[ ] IMPULSIVITY</td>
</tr>
<tr>
<td>or greater (includes temporal and nasally</td>
<td>[ ] VISUOSPATIAL</td>
</tr>
<tr>
<td>vision of persons with usable vision in</td>
<td>[ ] MEMORY</td>
</tr>
<tr>
<td>only one eye)</td>
<td>[ ] OTHER:</td>
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<td></td>
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<tr>
<td>[ ] STRENGTH</td>
<td>[ ] LOSS OF CONSCIOUSNESS OR CONTROL</td>
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<tr>
<td>[ ] PERIPHERAL SENSATION</td>
<td>[ ] Single recent episode:</td>
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<tr>
<td>[ ] FLEXIBILITY</td>
<td>[ ] Multiple recent episodes:</td>
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<tr>
<td>[ ] MOTOR PLANNING &amp; COORDINATION</td>
<td>[ ] Date of Last Episode:</td>
</tr>
<tr>
<td>[ ] OTHER (describe):</td>
<td>[ ] Medication to prevent</td>
</tr>
<tr>
<td></td>
<td>[ ] recurrence:</td>
</tr>
</tbody>
</table>

Checking one or more of the boxes below indicates that the above referenced patient has one or more severe and uncontrollable functional and/or cognitive impairments listed on the reverse side unless otherwise described below.
After Reporting

In most cases DMV will suspend the individual’s driving privileges. Fewer than 10% of reported drivers ever regain their driving privileges.

DMV notifies the individual that their suspension is effective five days from the date on the notice. They have the right to appeal the suspension by requesting an administrative hearing.

Many drivers surrender their driving privileges and request a quit driving identification card after being suspended under the medically at-risk program. See below to learn how to help your patients retire from driving.

If the individual wishes to regain their driving privileges, DMV’s Medical Determination Officer (a physician on staff at DMV) reviews their medical and driving records to determine if they are safe to test. If it is determined that the person may be capable of safely testing, they must first pass the knowledge test and then vision screening before being allowed to take a drive test. If the individual does regain driving privileges, the Medical Determination Officer will decide under what conditions driving privileges may be reinstated based upon the medical information provided. Drivers may be required to medically recertify on a regular basis.

The reporting health care professional will be notified if their patient’s driving privileges are reinstated.

Reporting health care professionals may inquire about the status of a report by contacting DMV's Driver Safety Unit at (503) 945-5083.
PRIVATE DRIVING EVALS

Cost ~$200+ out of pocket

One time appointment ~2 hours

Test thinking, perception, vision and motor function

May or may not be on the road

Report back to PCP with finding
LOCAL REFERRALS

• OHSU OT – Marisa Palandri
• Providence Gateway Rehab (503-216-5410)
• Legacy Emmanuel Outpatient Rehab: DriveAbleUSA program (503-413-1500)
• Alpine Rehab. & Wellness - Jeff Lango, OTR/L, CDRS (503) 249-3220 alpinerehab@gmail.com
COMMUNITY MOBILITY PROGRAMS

PeaceHealth Southwest Community Mobility Program
(Vancouver, WA) 360-514-2910

Rehabilitation-to-Drive Program focused therapy to strengthen physical and cognitive performance in order to return-to or continue driving.

• 6-8 visits, may be covered by insurance

Progressive Cognitive Disorders Program for patients that likely need to retire from driving, but are resistant.

• Includes assessment, education on alternate transportation, home safety and other resources
• Usually 2-3 visits
• Initial evaluation and discharge summary sent to referring provider
OTHER RESOURCES

- Aging and Disability Services offices
  http://www.oregon.gov/dhs/spwpd/pages/offices.aspx#top
- AAA Senior Driving Resources
- AARP Driving Safety Resources
  https://www.aarp.org/auto/driversafety/driving-assessment/
- Association of Driver Rehabilitation Specialists
  https://www.aded.net/
- The Hartford Center
  https://www.thehartford.com/resources/mature-market-excellence/driving-safety
- Older Adult Driver Initiative
  www.planfortheroadahead.com
- American Geriatrics Society
  https://www.healthinaging.org/driving-safety
DRIVER ASSESSMENT WORKFLOW

Identify
• Red flag condition
• Red flag medications
• Substance abuse
• Acute events
• Driving concerns

Assess
• Vision – acuity and peripheral vision
• Cognition – clock draw and Trails B
• Neuromuscular function – gait speed, strength, flexibility

Refer or Revoke
• Mild, controllable, reversible deficits = referral to CDRS
• Severe, uncontrollable, not reversible deficits = driving cessation
Driving Evaluation

Reason for Visit
- Driver Evaluation
- Fitness to drive

Chart Note
Please use note template accessible via gerodrivingeval

Orders
- CONSULT TO OPHTHALMOLOGY [CNSLT0006] Internal referral
- CONSULT TO OCCUPATIONAL THERAPY [REHAB00002] Internal referral
- CONSULT TO PHYSICAL THERAPY [REHAB00001] Internal referral
- CONSULT TO NEUROLOGY [CNSLT0042] Internal referral
- CONSULT TO NEUROPSYCHOLOGIST [CNSLT0183] Internal referral
- REHAB SPEECH LANGUAGE/COGNITIVE REFERRAL [REHAB00003] Internal referral

Diagnosis
- Driving safety issue [V10 89]

Links for Providers
- Trails B
- High Risk Medications in the elderly
- Driving Evaluation Algorithm
- Overview of Services for Driving Safety

Resources for Providers - Oregon DMV
Oregon DMV:
Referral for driving evaluation: link to PDF below. Report results in one of the following: 1) automatic suspension of license in 5 days, 2) person has 30 days to report medical information that supports continued driving (could still result in suspension if medical information shows severe and uncontrollable impairments), 3) the person has 60 days to take driving knowledge, vision and road tests. There is an appeals process. Driving knowledge test $5 and road test $9. Reinstatement of license if it is suspended, then reinstated is $75.

Mandatory Impairment Referral for severe and uncontrollable impairments: link to pdf below. Results in automatic suspension of license in 5 days. There is an appeals process. Severe and uncontrollable impairment definition: link to PDF below.

Referral for driving evaluation
Mandatory Impairment Referral for severe and uncontrollable impairments
Severe and uncontrollable impairment definition

Resources for Providers - Washington DOT
Washington DOT: Referral for driving evaluation: link to PDF below. After report is reviewed, potential action includes: 1) a medical or vision certificate sent to driver for completion by licensed professional, 2) May require re-examination, which may include mandating adaptive equipment, 3) May revoke license. Driving knowledge and driving test $20, reinstatement after non-alcohol related revocation $75.

No mandatory reporting of Washington drivers.

Referral for driving evaluation
SPECIAL THANKS

• Colleen M. Casey, PhD, ANP-BC, CNS
• Elizabeth Eckstrom, MD, MPH
REFERENCES


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