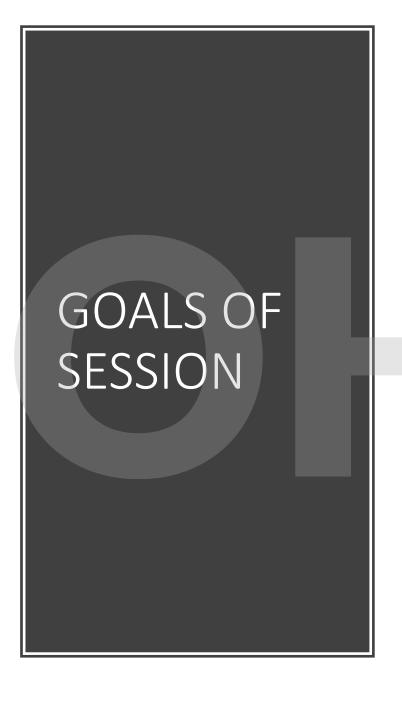
# Driving Evaluation

WHEN AND HOW TO TAKE AWAY THE KEYS



Emily Morgan, MD OHSU Geriatrics 2022





Describe when to screen for driver safety



Demonstrate <u>how</u> to screen for driver safety



Describe when to send DMV forms vs. refer to OT



Demonstrate <u>how</u> to report or refer for evaluation

## Case history

- Mr. G is a 78 year old gentleman who presents with his wife for a new patient appointment in internal medicine clinic.
- PMHx significant for systemic lupus, CAD, HTN, age related macular degeneration, chronic lumbar disease with pain and numbness.
- On geriatric ROS he states he drives himself to the gym three times per week. His wife says she refuses to ride with him because he has poor vision and numb feet. She does all the other driving.
- He's a retired history professor. Independent with ADLs and IADLs.
- No alcohol, marijuana or illicit substance use.

# Driving during the Lifespan

By 2050 drivers >65 yrs old = 25% of the US driving population



## Driving during the lifespan

Life expectancy exceeds driving fitness expectancy in

the US

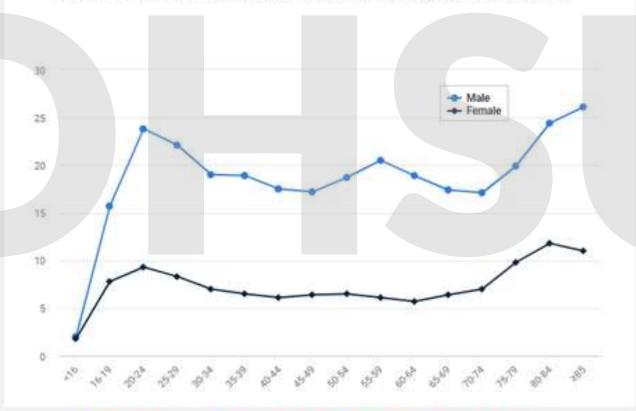
~6 yrs for men ~10 yrs for women



# Most older adults need to retire from driving in their lifetime

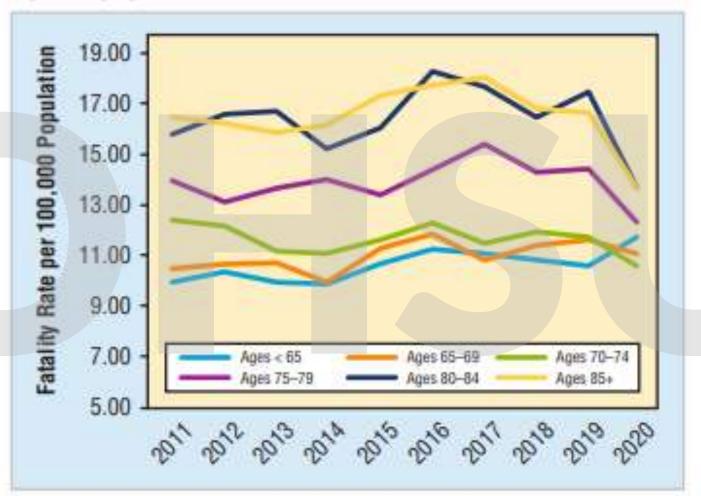
# In 2019, motor vehicle crash death rates per capita increased substantially among males and females beginning at ages 75-79

Motor vehicle crash deaths per 100,000 people by age and sex, 2019



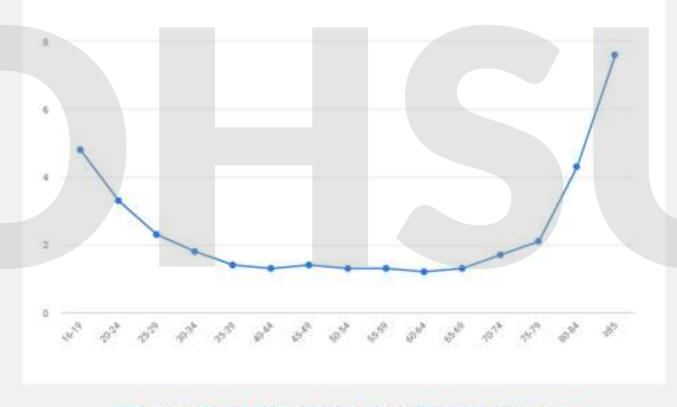
http://www.iihs.org/iihs/topics/t/older-drivers/fatalityfacts/older-people/

# Fatality Rate per 100,000 Population, by Age Group, 2011–2020



Sources: FARS 2011-2019 Final File, 2020 ARF; Population - Census Bureau

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/

#### 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

# Why is this my job?

Studies looking at self-rated driving ability show that older drivers tend to score themselves higher on ability as their skills decline.<sup>9</sup>

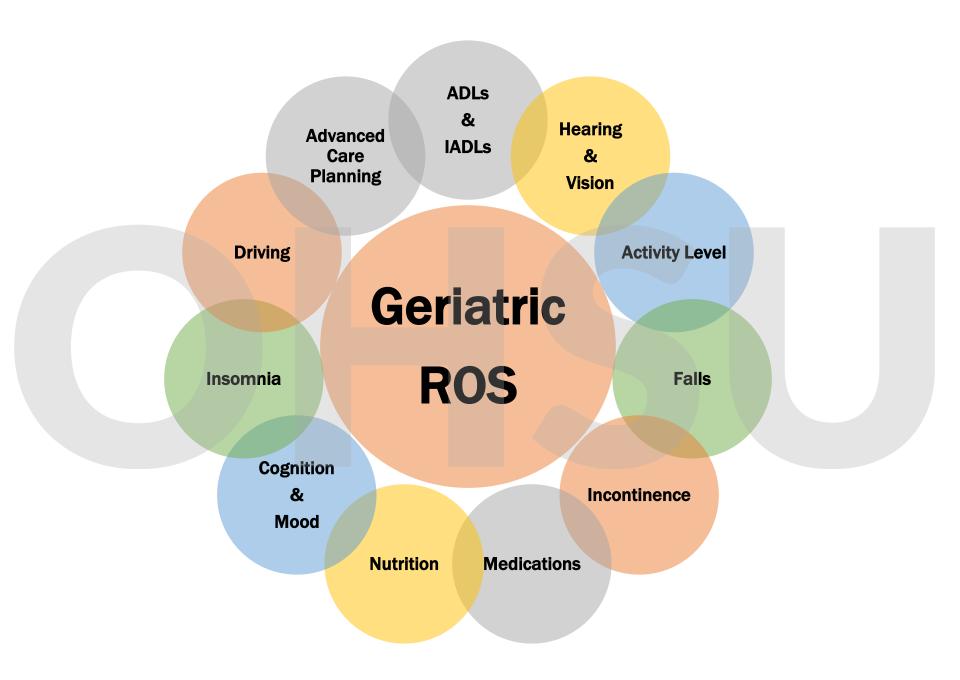
However, most older adults agree that if a primary care provider advised them to stop driving they would do so. 11

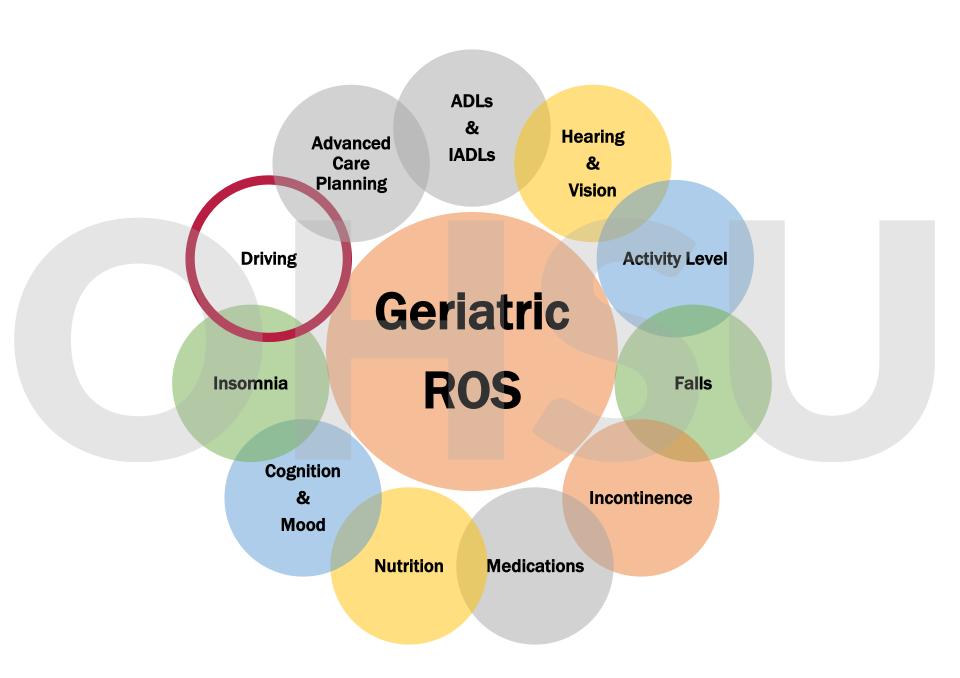
Given this dichotomy between driving perception and ability, it is clearly within the role of primary care providers to assess and counsel older drivers



# Driving = independence







## Driving is a complex task

Visual acuity and perception

Cognitive abilities: executive function and multitasking

Neuromuscular function





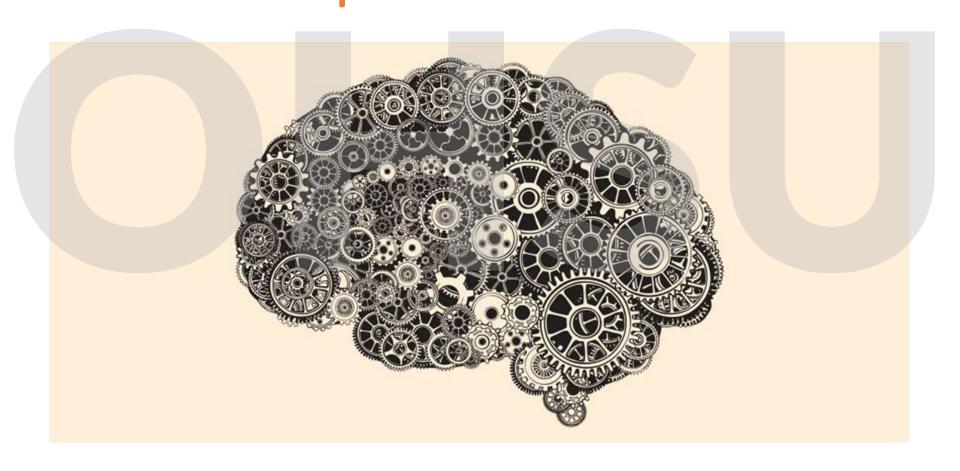
Changes in Vision





Changes in gait, neuro or MSK exam

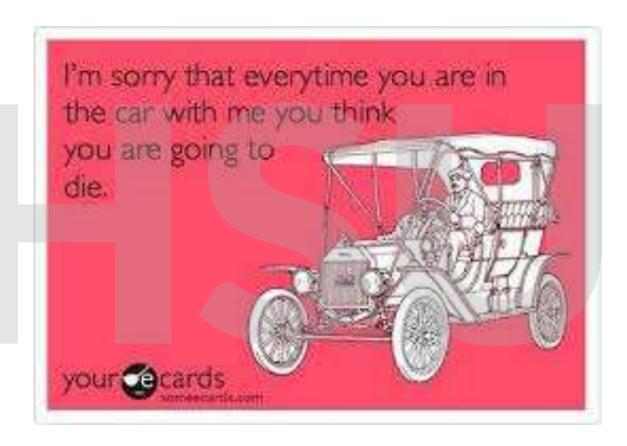
### Changes in memory or cognition





Medications Polypharmacy

**Driving Concerns** 



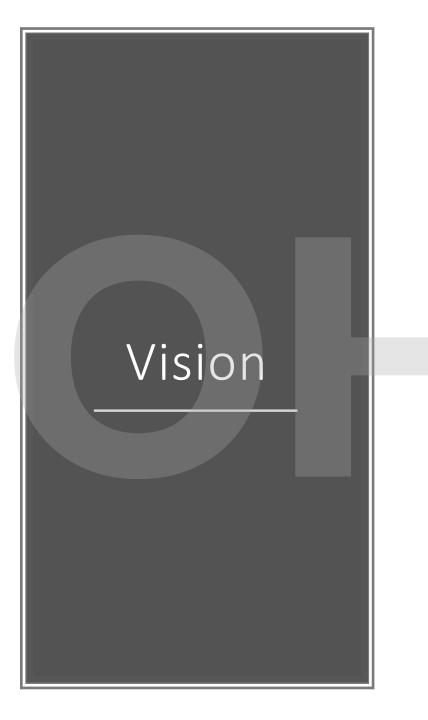
HOW? Five Domains to Assess

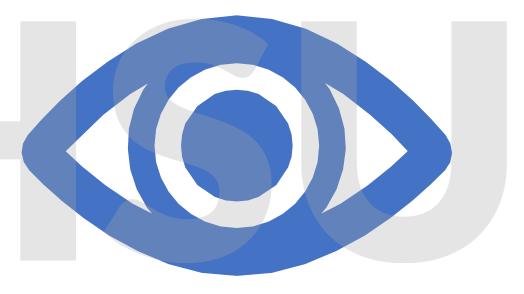


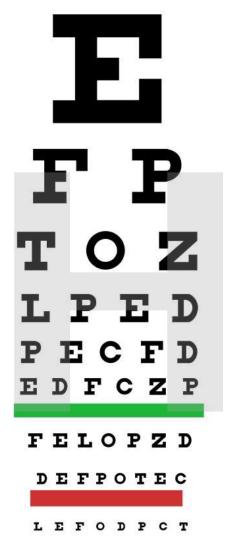


### Toolbox

There is no single validated screening tool to assess driving safety and thus evaluation requires a multifaceted approach







FDPLTCEO

PEZOLCFTD

1 20/200

2 20/100

3 20/70

4 20/50

5 20/40

6 20/30

7 20/25

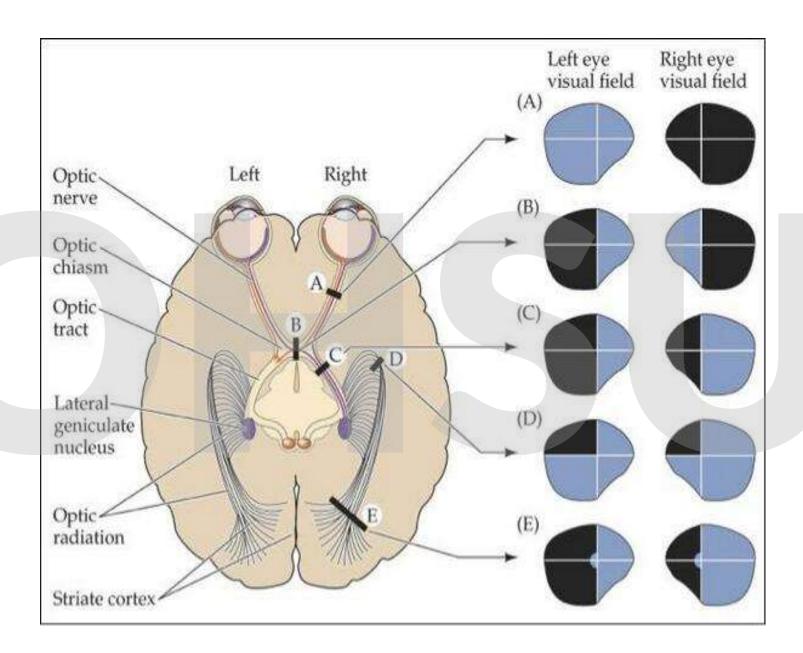
8 20/20

9

10

11

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BY-SA 3.0 via Commons
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Normal Vision Cataracts



Normal Vision

Diabetic Retinopathy



Normal Vision Glaucoma

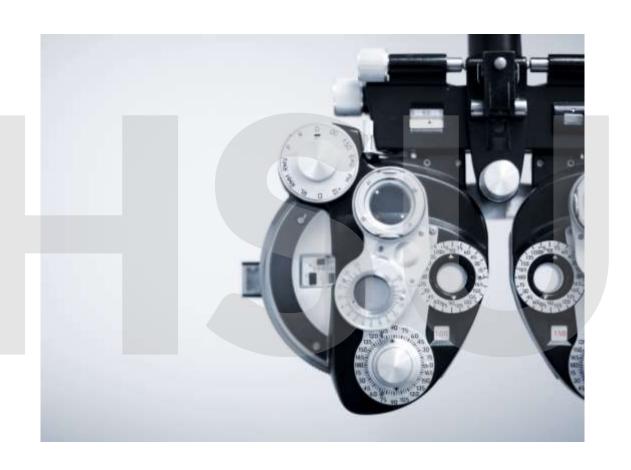


**Normal Vision** 

Age-Related Macular Degeneration

## Vision

Refer to ophthalmology specifically for drivers evaluation



Neuromuscular function



# Neuromuscular function

History of falls is associated with motor vehicle accidents in which older drivers were at fault.<sup>36</sup>

Driving impairment is associated with inability to reach above the shoulder, impaired knee flexion, neck ROM, and inability to walk for more than one block. 37,38



# Neuromuscular function

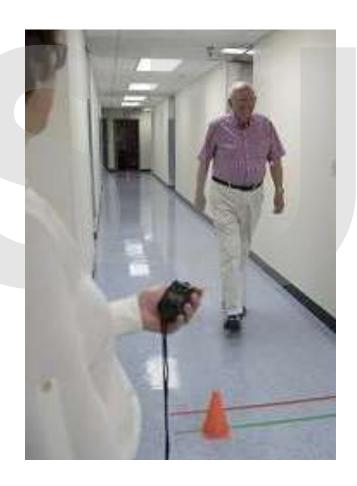
#### Neuro/MSK exams

- Weakness
- Flexibility
- Peripheral neuropathy
- Motor coordination



# Rapid pace walk test

- In a recent review, it was shown that the timed up and go (TUG) was not a reliable indicator of driving ability,<sup>39</sup> however the rapid pace walk test is associated with driving ability.<sup>17</sup>
- 20 feet (10 feet up and back) using any assistive device they normally use.
- >9 seconds is associated with driving impairment.<sup>40</sup>



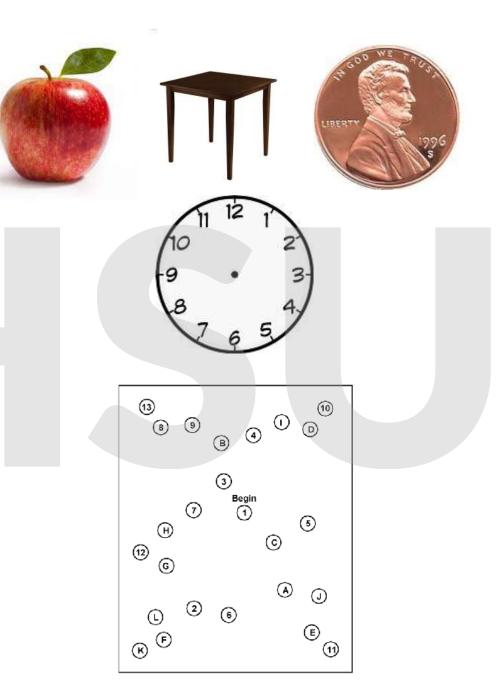
Cognition



### Mini Cog

- 3 item recall
- Clock draw

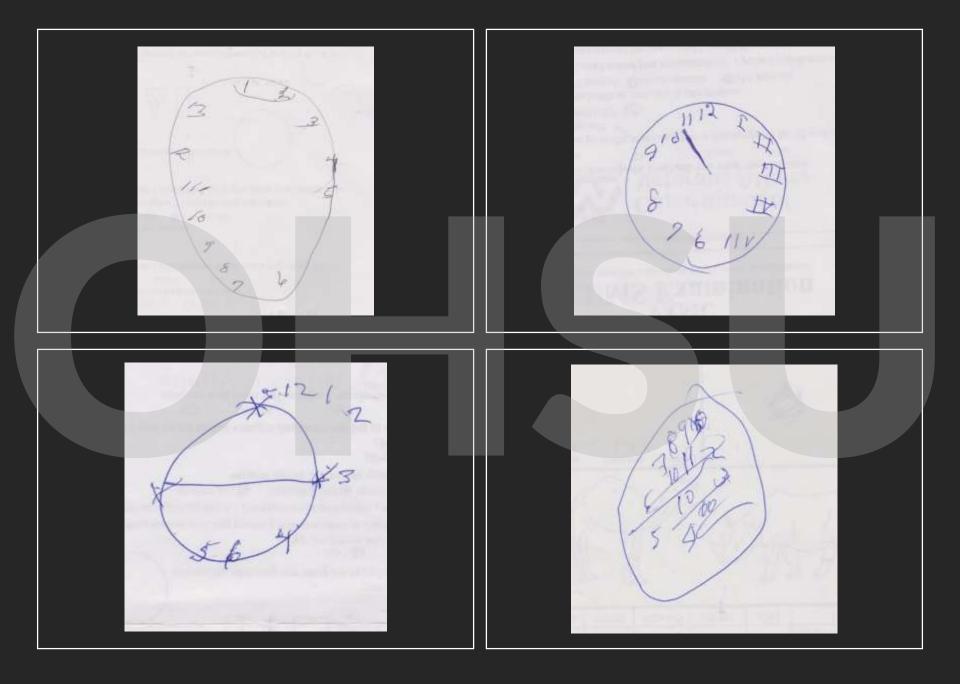
Executive function testing: trails B test



# MoCA

- \*
- **Attention**
- Judgement
- Reaction Time
- \*
- Planning and sequencing
- Impulsivity
- **Yisuospatial**
- Memory

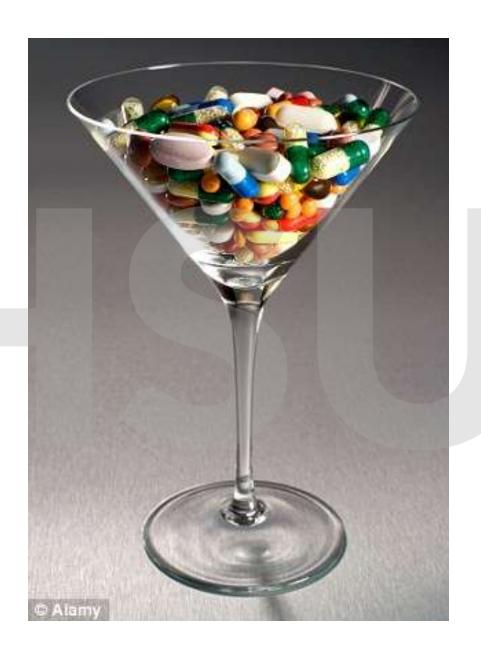
MONTREAL C	OGNITIVE ASSE	SSMEN	T (MOCA)	Edi	Sex :		Date of birth : DATE :	
S Begin	(A) (B) (Q)	2		Copy	Draw (3 pot		(Ten past eleven)	POINTS
©	(3)			1.1	[ ]	ir Nu	] [ mbers Han	] _/5
NAMING				THE I		Y.		]/3
MEMORY	Read list of words, subj must repeat them. Do a De a recall after 5 minu	trials.	FA 1st trial and trial	CE VEL	VET CI-	URCH	DAISY RE	D No point
ATTENTION	Read list of digits (s dig	51	abject has to re	peat them in	the backwa		[]2185	4/2
Kend list of letters. If						KDEA	AAJAMOFAA	B _/1
Serial 7 subtraction s	tarting at 100	1 93	B6	ctions: 3 pts, a		[ ] 72 Epts, scon	[ ] 65 rect: 1 pt, o correct: 0	pt/3
LANGUAGE	Repeat: I only know th The cat alway		e ame to help to the couch when		the room.	1.1		_/2
Fluency / Name	maximum number of wo					[]_	(N≥ n words)	_/1
ABSTRACTION	Similarity between e.g.	banana - ora	mge = fruit [	] train-bi	cycle [ ]	watch - r	ruler	/2
DELAYED RECALL	Has to recall words WITH NO CUE Category cue	FACE []	VELVET [ ]	CHURCH []	DAISY []	RED [ ]	Points for UNCUED recall only	/5
Optional	Multiple choke cue							
ORIENTATION	[ ]Date [	Month	[ ]Year	[ ]D	y [	] Place	[ ] City	_/6
o Z.Nosreddine MD \ www.mocates	/ersion November 7, 2004. t.org			Nor	mal ≥ 26/30		NL Add 1 point If 5 12:	/30 rr edu





# substances





# 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.
- That is roughly the same percentage as drivers aged 16-17 years old.<sup>15</sup>
- Older adults are at even greater risk due to increased rates of drug interactions, decreased alcohol metabolism, and underlying cognitive impairment.16



Driving concerns

Does the patient limit their driving?

Has family expressed concerns?

# Case: Objective assessment

- Mr. G's med list: ASA, plaquenil, lisinopril, metoprolol, rosuvastatin,
   Preservision, diazepam prn nighttime anxiety
- Vitals: Sitting BP 130/70, HR 70, Standing BP 125/72
- Exam: Moves cautiously. Neck ROM full. CN intact. Strength 5/5 in UE/LE. DTRs 2+ biceps and quads, trace at ankles. Diminished light touch sensation midfoot to toe tips bilat.
- Rapid walk test 8 seconds
- MOCA 23/30 (0 trails, 0 cube, 3 clock, 3 naming, 2 digits, 1 letters, 2 serial 7s, 1 language repeat, 1 fluency, 2 abstraction, 3 recall, 5 orientation)

# Mandatory reporting to DMV or referral???



Provider responsibility

Providers should know local reporting laws and should feel comfortable counseling their patients on driving cessation and alternative transportation strategies



### Report

- Severe
- Uncontrollable
- Permanent

### Refer

- Mild
- Potentially controllable
- Potentially reversible

# Neuro



Strength



**Sensation** 



**Flexibility** 



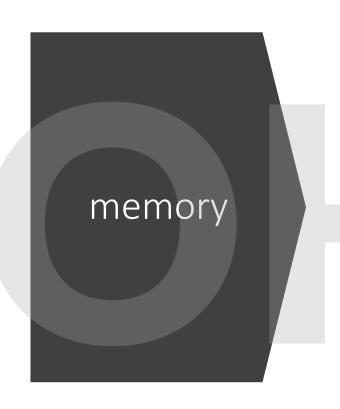
**Motor Coordination** 

### **DMV** Report

- Severe
- Uncontrollable
- Permanent

### **OT Referral**

- Mild
- Controllable
- Reversible



### **DMV** report

- Mod-Severe Dementia
- Frontal-temporal dementia
- Dementia with Lewy Bodies
- Parkinson's dementia

### **OT Referral**

- MCI
- Mild dementia

### MEDICATIONS

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**







Licenses & ID Cards Vehicles

Records

Most Popular



#### Oregon Driver & Motor Vehicle Services

♠ > Oregon Driver & Motor Vehicle Services > At-Risk Driver Program for Medical Professionals

#### At-Risk Driver Program for Medical Professionals

Licenses & ID Cards

Vehicles

**Forms** 

Records

Offices

50plus

Teen

**FAQs** 

Some people have, or may develop, cognitive or functional impairments, that could affect their driving ability. The At-Risk Driver Program was created to help prevent injury or death by impaired drivers.

Most medical professionals are required to report drivers who can no longer drive due to impairment. See the At-Risk Driver Program rules for more details:

- Mandatory Reporting OAR
- Non-Mandatory Reporting OAR

Not a medical professional? Visit our page about reporting an unsafe driver.

Which Patients to Report

The Mandatory Impairment Referral Form

How to Report

Liability & Confidentiality

After Reporting

Helping Your Patients Retire from Driving

# Voluntary Retirement

DEPARTMENT OF TRANSPORTATION DRIVER AND MOTOR VEHICLE SERVICES 1905 LANA AVE NE, SALEM OREGON 97314	QUIT DRIVIN	G FORM				
Complete this form to s	urrender you driver licen	se or driver permit under ORS 807.400.				
This form	n must be submitted ONI	LY at a DMV Field Office.				
When you quit driving for one of the reasons listed below, you may be eligible for an identification card with the same expiration date as your current driver license at no cost.						
LAST NAME (PLEASE PRINT)	FIRST NAME	MIDDLE NAME				
OREGON DRIVER / ID NUMBER		DATE OF BIRTH (MM-DD-YYYY)				
RESIDENCE ADDRESS		CITY, STATE, ZIP CODE				
MAILING ADDRESS (IF DIFFERENT)		CITY, STATE, ZIP CODE				
CHECK THE REASON I	FOR SURRENDERING	YOUR DRIVER LICENSE OR PERMIT				
☐ I recognize I'm no longer a	able to safely operate a mo	tor vehicle.				
<b>O</b> D						

http://www.oregon.gov/ODOT/DMV/pages/at-risk\_program\_index.aspx

# Apply for ID card when surrendering license

DMV A	PPLI	CATIC	ON FOR ORIGINAL	DRIVIN RENE		ILEGE REPLACE		ID CA	RD
DRIVER LICENSE  CLASS C CLASS	C RESTR'D	LT CONVE	RT INSTRUCT	ION PERMIT  MOTORCYC	Control Control	RSEMENT  MC-3	FARM	ID CARD	AT-RISK
APPLICANT INFORM	ATION:								
LAST NAME (PRINT NAME)			FIRST NAME		MIDDLE			SECURITY NUM	BER
OREGON DRIVER / ID NUMBER	DATE OF BIRTH	I (M-D-Y) MOTH	HER'S MAIDEN NAME	APPLICANT	S PLACE OF BIRTH (CITY		( )		
RESTRICTIONS	Do you want that you are a		or ID card to show [ al donor?	YES HEIGHT	FT. IN.	WEIGHT LBS.	M F X	HAIR COLOR	EYE COLOR
NOTE: YOUR ADDRESS BELOW MUST BE CURRENT. THE U.S. POSTAL SERVICE WILL NOT FORWARD YOUR LICENSE OR ID CARD.									
RESIDENCE ADDRESS				MAILING A	ADDRESS (IF DIFFER	RENT FROM RESIDE	ENCE ADDRESS)		
CITY, STATE, ZIP CODE				CITY, STA	TE, ZIP CODE				
CURRENT OR PREVIOUS MILITARY SERVICE: By checking this box I authorize DMV to send my name and address to the Oregon Department of Veterans' Affairs (ODVA) for the purpose of receiving benefit information.									
NOTE: Voter registration forms are available at the DMV office. If you would like to register to vote today; please ask a DMV clerk.									
DRIVING HISTORY:									
<ol> <li>Have you ever had a drive</li> <li>Is your driver license of</li> </ol>				Y? ☐YES ☐NO ☐YES ☐NO	If yes, what state o	or country:	Numb	er (if known):	
3. List other names you h						2			
MEDICAL FITNESS:			or an Identification Ca	rd.	100000				

DMV Reporting





#### MANDATORY IMPAIRMENT REFERRAL

**Reset Form** 

(OAR CHAPTER 735 DIVISION 74)

#### THE MEDICAL INFORMATION IN THIS REPORT IS CONFIDENTIAL AND WILL BE USED BY THE DRIVER AND MOTOR VEHICLE SERVICES (DMV) ONLY TO DETERMINE THE QUALIFICATIONS OF THE PERSON TO OPERATE MOTOR VEHICLES. LAST NAME (PLEASE PRINT) FIRST NAME MIDDLE NAME SEX ODL / CUSTOMER NUMBER DATE OF BIRTH CITY ZIP CODE RESIDENCE ADDRESS STATE COUNTY The underlying medical condition or diagnosis is: PROGRESSIVE DATE OF MOST RECENT EXAM: IMPAIRMENT(S) IS: CHRONIC The patient named above is over 14 years of age and has the impairment(s) checked or described below. The impairment(s) is documented as severe and uncontrollable and not correctable by medication, therapy and/or surgery, driving device and/or techniques. Submission of this form may result in an immediate suspension of the patient's driving privileges. 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. FUNCTIONAL IMPAIRMENTS: (Check all that apply.) STRENGTH VISUAL ACUITY and/or FIELD OF VISION Patient is unable to meet the state vision standards listed PERIPHERAL SENSATION below, even with correction: FLEXIBILITY Acuity must be no worse than 20/70 in the best eye MOTOR PLANNING & COORDINATION Horizontal field of vision of 110 degrees or greater OTHER (describe): (includes temporal and nasal vision of persons with usable vision in only one eye) **COGNITIVE IMPAIRMENTS:** (Check all that apply.) LOSS OF CONSCIOUSNESS OR CONTROL ATTENTION **IMPULSIVITY** Single recent episode: JUDGMENT & PROBLEM SOLVING VISUOSPATIAL Multiple recent episodes: REACTION TIME **MEMORY** – Date of Last Episode: PLANNING & SEQUENCING OTHER: Medication to prevent

I qualify as a mandatory reporter because:		
I am the patient's Primary Care Provider.		
I am a physician, physician assistant or nurse pr a referral from the patient's primary care provide		
A health care provider (see reverse) providing he care provider, and related to a cognitive or fundamental control of the care provider.		I from the person's primary
A physician or health care provider (see reverse not have a primary care provider.	e) providing emergency health care ser	vices to a person who does
EALTH CARE PROVIDER'S NAME (PLEASE PRINT)	SPECIALTY	LICENSE or CERTIFICATE #
AILING ADDRESS	FAX#	TELEPHONE # (and EXT.)
TY	STATE ZIP CODE	COUNTY
IGNATURE OF HEALTH CARE PROVIDER		DATE SIGNED

**FAX or Mail Instructions on Reverse of form** 

STK# 300457

\*\*You MUST report even if the patient voluntarily retires from driving\*\*

735-7230 (5-16)

#### **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 <u>below</u> 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.

# Refer for Re-test if deficits are not severe and uncontrollable



#### DRIVER EVALUATION REQUEST

Clear Form

Print

DMV may require re-evaluation only when there is reason to believe that a driver may no longer be qualified to hold a license. The individual may be required to take vision, knowledge or driving tests or obtain a medical clearance.

#### INSTRUCTIONS:

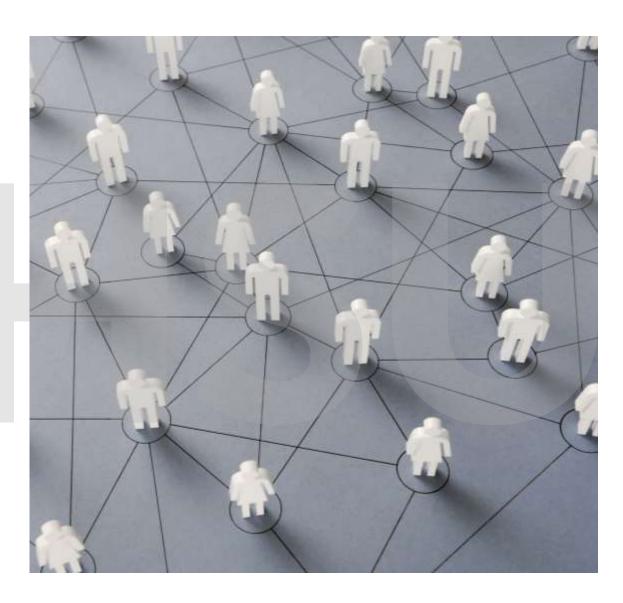
- 1. Complete this form to request that DMV re-evaluate a driver's ability to drive safely.
- 2. Sign this request in the signature block provided. Anonymous requests will not be honored.
- 3. Mail or fax completed request to: DMV, Driver Safety Unit, 1905 Lana Avenue NE, Salem Oregon 97314; FAX: (503) 945-5329.

NAME OF PERSON TO BE RE-EVALUATED (Last, First, Middle)	SEX (Circle)	ODL / CUSTOMER NUMBER	DATE OF BIRTH	
	MFX			
STREET ADDRESS	СІТУ		STATE	ZIP CODE
DRIVER BEHAVIOR - Check appropriate boxes for driving pro	blems you have observ	ed:		- 1 · • ·
Does not see or react to other cars, pedestrians, etc.  Drives in wrong lane or on wrong side of road  Allows car to drift in and out of lane  Drives on sidewalk  Makes turns from wrong lane  Turns in front of on-coming cars  Acts violently or aggressively when driving  Drives too slowly, or stops, for no reason	Is confused by Gets lost or cor Backs up or che Fails to react to Has slow react	nfused while driving near langes lanes without looking traffic signals, other cars fron times (caused by med mistakes while talking to p	home ng back or s, pedestria lications, d	ans, etc. Irugs or condition

# Driver re-evaluation request

Please use the space below and the back of this form to provide you to question the individual's ability to drive safely. If you be driving, please provide information about its impact on their ability	elieve the person has a medical condition/impairmer	nt that impacts safe
► REQUESTS BASED ON AGE, DIAGNOSIS AND/O	OR CENERAL HEALTH ALONE WILL NOT BE	HONORED
Check here if you want your name kept confidention driver requests a hearing or files a lawsuit against DM	al. DMV may not be able to keep this request co	and the second s
YOUR RELATIONSHIP TO THE DRIVER:		
☐ Law Enforcement ☐ Physician* ☐ Health Care Provi	ider* (explain):	
Relative Friend DMV Employee Cou	rt Other (explain):	
* Medical providers who are required to report patients under the refer to www.OregonDMV.com for more information.	e mandatory reporting program must use DMV Form 7	35-7230. Please
YOUR NAME (Please Print)	SIGNATURE	DATE

Referral



# Private Driving Evals

Cost \$200-\$250 out of pocket

One time appointment ~2 hours

Test thinking, perception, vision and motor function

May not be on the road

Report back to PCP with finding

#### LOCAL REFERRALS

- OHSU OT Marisa Palandri
- VA OT drivers assessment (Frank!)
- 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 <a href="mailto:alpinerehab@gmail.com"><u>alpinerehab@gmail.com</u></a>

# Community Mobility Programs

- <u>Rehabilitation-to-Drive Program</u> focused therapy to strengthen physical and cognitive performance in order to return-to or continue driving.
  - 6-8 visits, may be covered by insurance
- <u>Progressive Cognitive Disorders Program</u> 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**

https://exchange.aaa.com/saftey/seniordriver-safety-mobility/

#### AARP Driving Safety Resources

https://www.aarp.org/auto/driversafety/driving-assessment/

Association of Driver Rehabilitation Specialists <a href="https://www.aded.net">https://www.aded.net</a>

Older Adult Driver Initiative https://www.planfortheroadahead.com

# Driver assessment workflow

 Red flag condition Red flag medications Substance abuse Identify Acute events Driving concerns Vision – acuity and peripheral vision Cognition – clock draw and Trails B Neuromuscular function – gait speed, strength, flexibility Assess

Refer or Revoke

- Mild, controllable, reversible deficits = referral to DRS/CDRS
- Severe, uncontrollable, not reversible deficits = driving cessation

### Case: assessment and Plan

Borderline case: With MCI, did not require reporting on cognitive impairment alone and other deficits weren't severe.

Messaged ophthalmology regarding driving assessment during appointment scheduled for later that week.

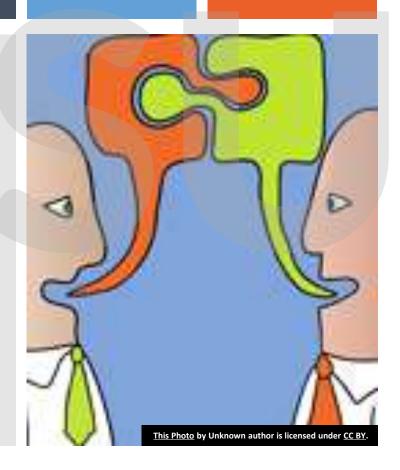
Recommended he consider voluntary retirement from driving and if not now, prepare for this in the future. While driving, continue to limit this to local, daytime trips to familiar places.

OT referral appropriate. Will revisit in the future.

Discontinue rare prn diazepam. Try melatonin at bedtime instead.

# Conversation Starters

- Ask/Explore: "What would it mean to you if you had to stop driving?" "Where are the most important places you go?"
- Tell/Partner: "There will be a time when your dementia has
  progressed to the point that it is no longer safe for you to
  drive. I will continue to work with you to assess driving safety
  and would like to assist you in driving safely for as long as
  you can."
- Empathize and Legitimize: "I can only imaging what a disappointment this is. I wish the news could be different."
- Hope for Best, Plan for the Worst: "I hope that you will be safe to drive for some time too, but we need a plan for what to do when it is no longer possible."
- Set Goals and Priorities: "Let's start with more evaluation to help us gauge this." "Start driving only when and where you feel most comfortable, like only locally and during the day." "In the next few months, look into ride sharing with friends and try taking a taxi/Uber/public transportation."



# References

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   Available at: <a href="http://seniordriving.aaa.com/understanding-mind-body-changes/reaction-time">http://seniordriving.aaa.com/understanding-mind-body-changes/reaction-time</a>.
   Accessed April 23, 2017.
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