

# On the Road to Safer Senior Driving



How aging affects driving and  
things TZD E's need to know?

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Brian Harmon, DPS Office of Traffic Safety

# Learning objectives:

1. List signs of physical & cognitive impairment
2. Describe screening & safety information education that can be used to mitigate effects of aging on safe driving
3. Identify other possible causes for increased older driver fatalities



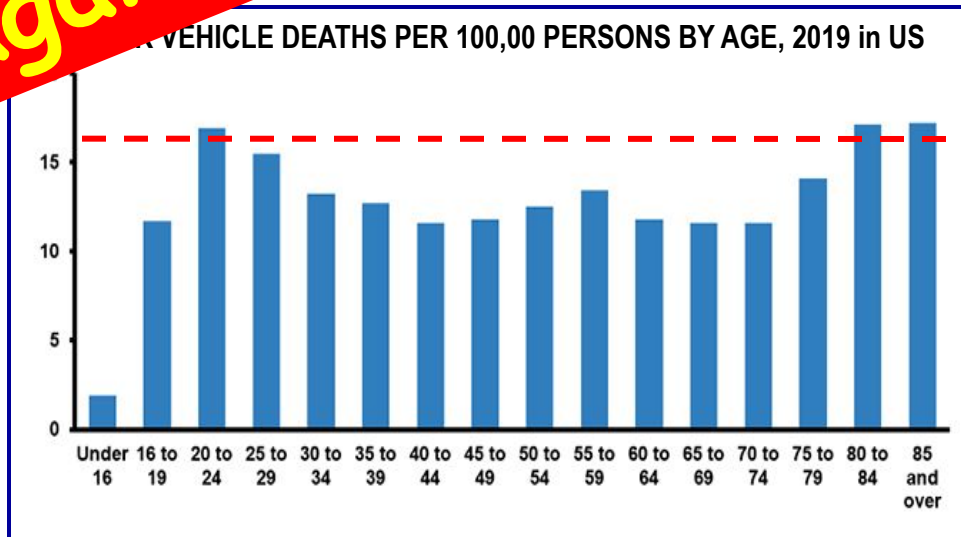
Any age driver may present with “impaired” or “unsafe” driving behaviors, however....



# Age of road-related deaths shifts

In 2008, teens and young adults had the highest numbers of deaths in crashes.  
By 2019, that pattern had shifted.

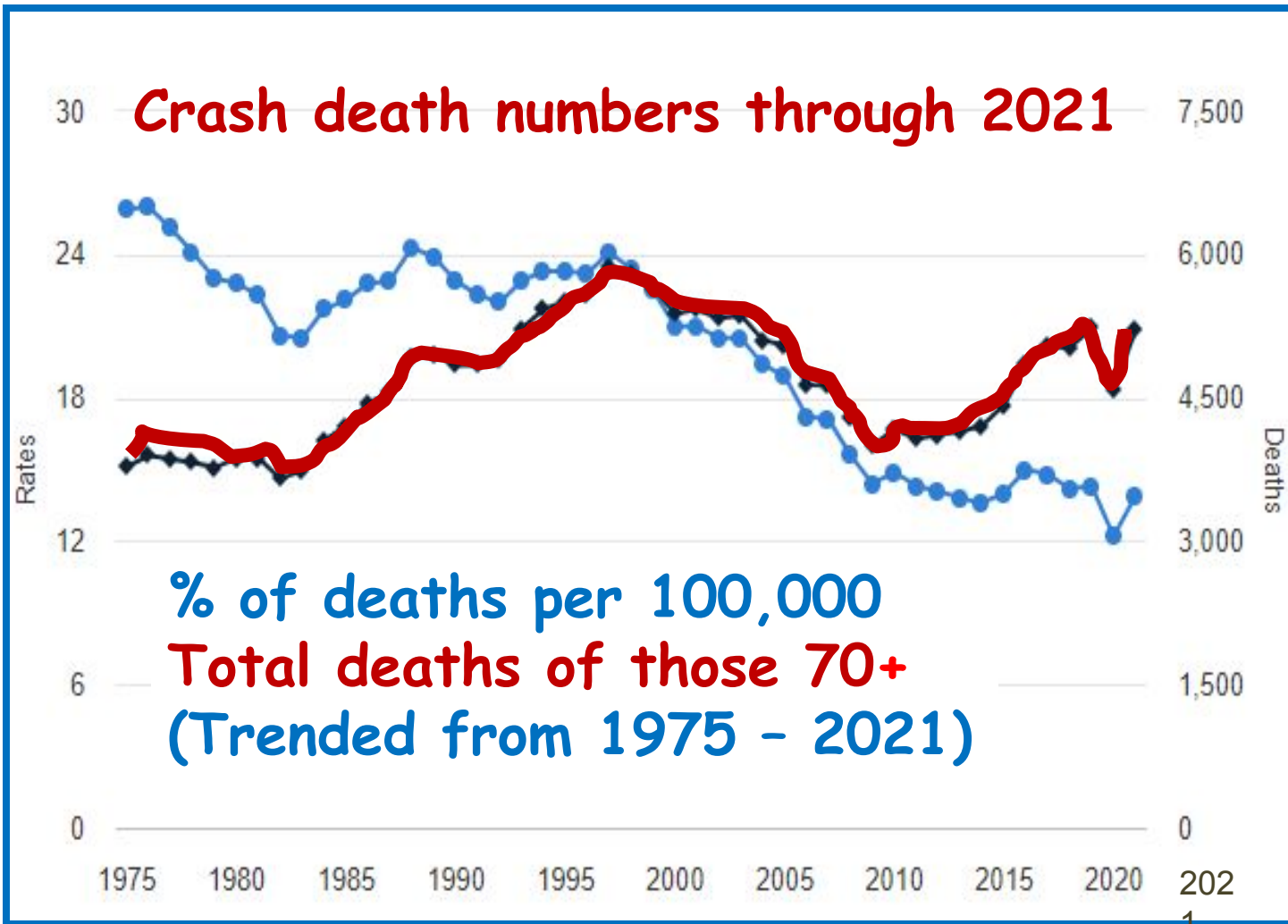
Older drivers and a slight drop in 2020 (COVID?) but is increasing again in 2021/2022!



\*<https://www.iii.org/article/background-on-older-drivers>

\*\*<https://www.iihs.org/topics/fatality-statistics/detail/older-people>

# Increasing number of those 70 & older are dying on our roads



2010 - 4,171  
 2016 - 4,848  
 2018 - 5,026  
 2019 - 5,232  
 2020 - 4,848\*  
 2021 - 5,209

**\*COVID year**



American winter by Julia Frantseva  
a parody on Grant Wood's "American gothic"

Several factors seem to be converging to lead to this increased loss of our senior's lives on the roads.

Number of US licensed drivers 65+ increased by about 14.4M from 2008 to 2020 (32.2M in 2007 to 46.7M in 2020)\*

First boomer turned 65



First boomer turns 80  
Last boomer turns 65

We are here



Last boomer turns 80

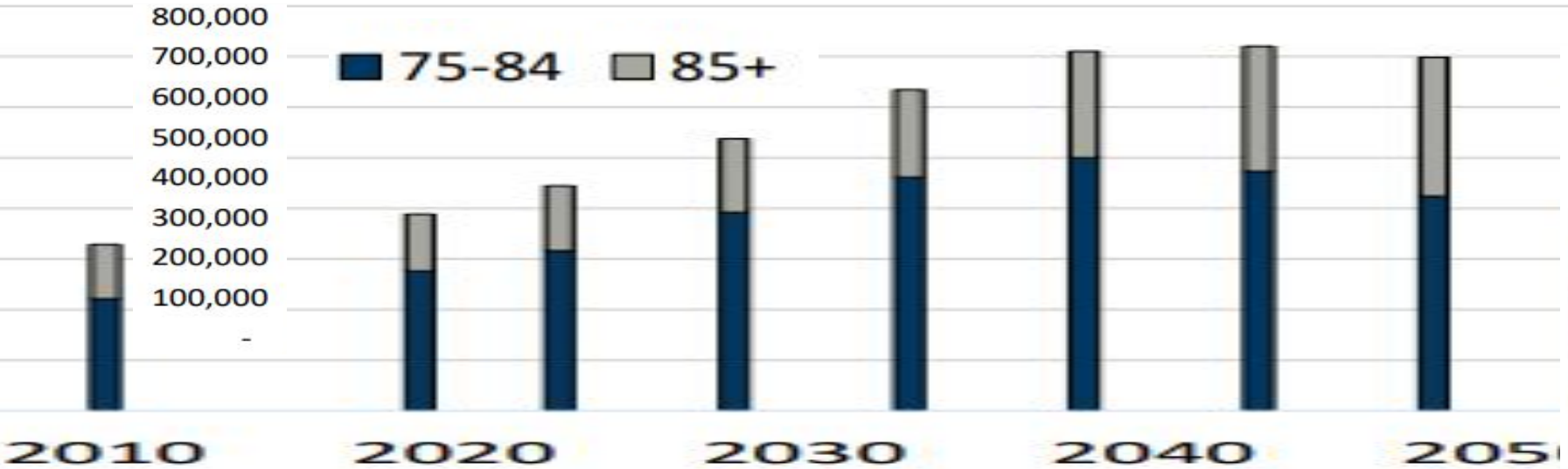


2010 2015 2020 2025 2030 2035 2040 2045

2010 2015 2020 2025 2030 2035 2040 2045

800,000  
700,000  
600,000  
500,000  
400,000  
300,000  
200,000  
100,000  
-

75-84 85+



# Driving requires:

## Physical ability

- Strength & flexibility of neck, arms, & legs
- Ability to see, hear, & feel information
- An intact nervous system to send & receive messages between the brain, arms, and legs

## Cognitive ability

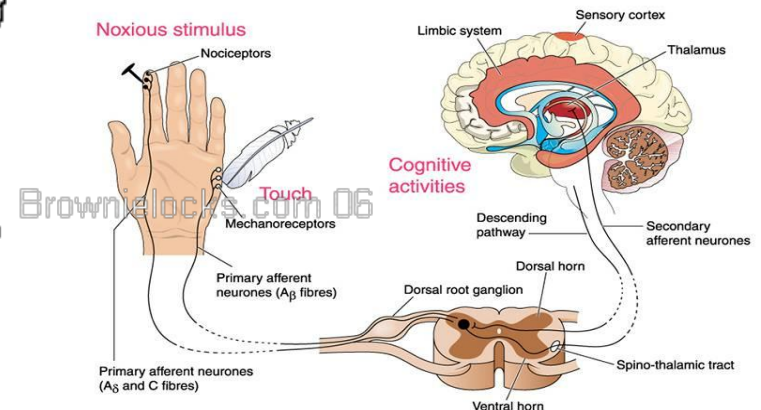
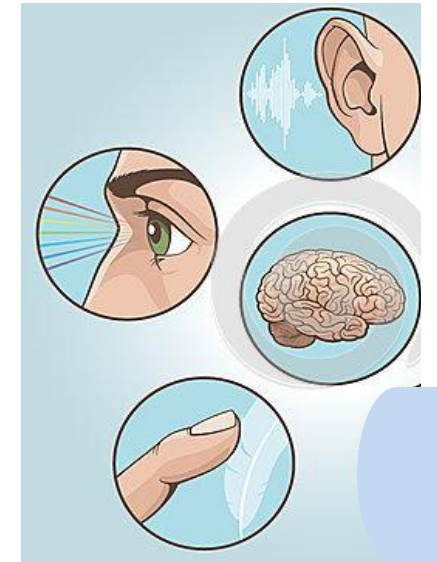
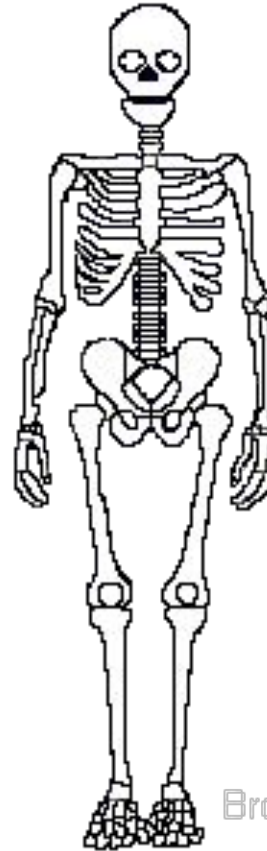
- Ability to process sensory information
- Sort out distractions
- Respond in an appropriate & timely manner





# How the Body is Affected by Aging

- Muscle strength & flexibility
- The ability to sense feeling in feet/hands
- Eyes (vision) & ears (hearing)
- Brain's ability to process sensory information from eyes, ears, nerves
- Reaction time
- Pain with movement



# Driving changes seen:

- Lack of strength/flexibility to brake /accelerate
- *Not knowing* if foot is on gas or brake
- Difficulty turning head to check traffic
- Slower response in emergent braking situations
- Missing auditory/visual warnings about their driving



# Cognition - the ability to process information

(Sights - Sounds - Sensations - Situation)

Signs of cognitive slowing typically appears:

- age 65-74 ~ 2.4% of people
- age 75 - 84 ~ 11% of people
- > age 85 ~ 34-50% of people



**COVID** has added a new dimension to this!

# Age related cognitive changes often have a slow onset and may include:



- “Freezing” when stressed
- Appearing (getting) lost easily
- Confusion, anxiety, anger when asked about abilities
- Searching for words/explanations
- Difficulty recalling names, etc.
- Unable to find things (keys, cars)
- In wrong places at wrong times
- Unable to use vehicle tech, or handle vehicle correctly

**Many learn how to hide & compensate for these changes**

# Driving changes seen:

- Easily distracted /overwhelmed by stimuli, high traffic situations
- Difficulty judging distance and speed of other vehicles
- Decreased ability to recognize unsafe situations
- Trouble reading street/road signs
- Issues with way-finding / getting lost





# Unsafe driving behaviors that may be due to physical/cognitive impairment

- Driving on wrong side of road / weaving
- Nearly hitting pedestrians, cyclists, other cars
- Difficulty making left turns or getting into correct lane when turning
- Turning in front of, or failing to yield to oncoming traffic
- Inappropriate / delayed stops
- Driving too slow/fast
- Scratches/dents on garage door, mailbox, etc



# Failure to yield & merging issues more frequently seen in older drivers

Contributing Factors	Senior Drivers*	Senior Drivers*	Other drivers
<b>Human Factors</b>			
Failure to Yield Right of Way	1,700	24.1%	888
Careless/Negligent/Erratic Driving	604	8.6%	671
Following Too Closely	584	8.3%	898
Improper Lane Usage	421	6.0%	188

Contributing factors in 12,698 crashes involving senior-drivers (age 65+) in 2016\*

Difficulty seeing hearing, judging distances/speed of other cars, slower ability to respond



Safety devices may not be as effective in these crashes

\*Minnesota Motor Vehicle Crash Facts, 2017



# Baby boomers & distracted driving

- Drivers 55+ were 8 sec. slower than Millennials responding to on screen in-vehicle technology\*

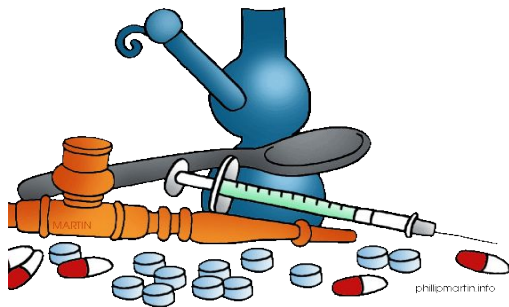
More time required to:

- Look at the screen
- Read the message
- Process the information
- Respond to the info



<https://www.cbsnews.com/news/distracted-driving-study-aaa-older-drivers-distracted-longer-in-car-technology-infotainment-2019-07-25/>

Physical and cognitive impairment associated with aging can lead to driving errors, or indicators, similar to those seen when someone is driving under the influence of drugs or alcohol!



Hill, L., Rybar, J., Stowe, J., Jahns J. Development of a curriculum and roadside screening tool for Law enforcement identification of medical impairment in aging drivers ( 2016) *Injury Epidemiology* 3:13 DOI 10.1186/s40621-016-0078- 3 [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4858548/pdf/40621\\_2016\\_Article\\_78.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4858548/pdf/40621_2016_Article_78.pdf)  
North American Conference on Elderly Mobility Driver Screening and Assessment Collaboration Between Law Enforcement and Public Health Organizations: The Cognitive Assessment Tool (2019 ) [https://safety.fhwa.dot.gov/older\\_users/noteworthy/ch2.cfm](https://safety.fhwa.dot.gov/older_users/noteworthy/ch2.cfm)  
Pomidor, A. ed: *Clinician's Guide to Assessing and Counseling Older Drivers, 4th Edition* 2019 New York

# Aging leads to conditions that add to physical & cognitive changes

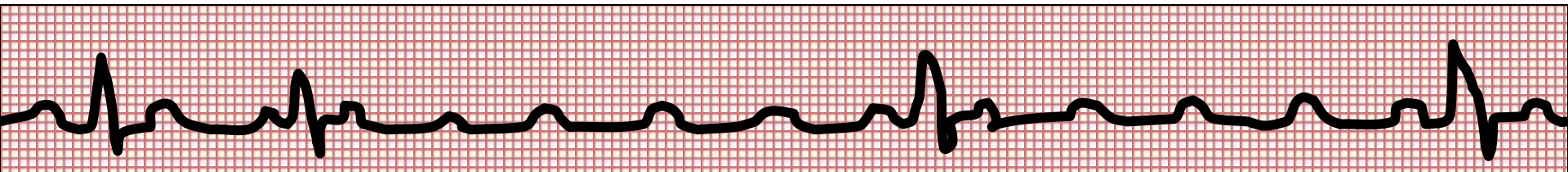
- Alzheimer's disease & dementia
- Stroke/ limb weakness
- Diabetes (neuropathies)
- Arthritis (pain/mobility)
- Parkinson's disease
- Heart/lung disease
- Glaucoma, macular degeneration, loss of peripheral / night vision



**Sudden onset, or change in of any of these may result in a crash!**

# More importantly - symptoms of these conditions can cause unsafe driving

- Irregular heart rhythm
- Low or high blood sugar
- Low oxygen level
- Low blood pressure
- Loss of/decreased sensation or movement in arms or legs
- Pain with joint movement
- Dizziness/altered mental status



# Older adults more likely to be taking medications which affect the ability to drive safely

- Pain medications
- Sleeping pills
- Seizure medications
- Muscle relaxers
- Anti-nausea medications
- Eye drops
- Blood pressure & heart medications



□ Any medication that can cause drowsiness, blurred vision, dizziness, relaxed muscles; including over the counter or herbal supplements!

Care providers or pharmacist can provide information if medications can cause problems driving!

# Frailty leads to increased deaths

- Aging leads to physiological changes in the body making it less able to tolerate a crash and recover from injury
- Complications and under-lying conditions often lead to death long after the crash



# Mechanism of injury leading to fatality is not always obvious



# Frailty can lead to....

- Bones break more easily
  - especially ribs, hips pelvis, spine/neck, limbs
- Low oxygen levels/pneumonia
- Blood clots to the lung
- Slower wound healing
- Sepsis (super-infection)
- Decreased mobility
- Excess bleeding (especially in the brain & as bruises)

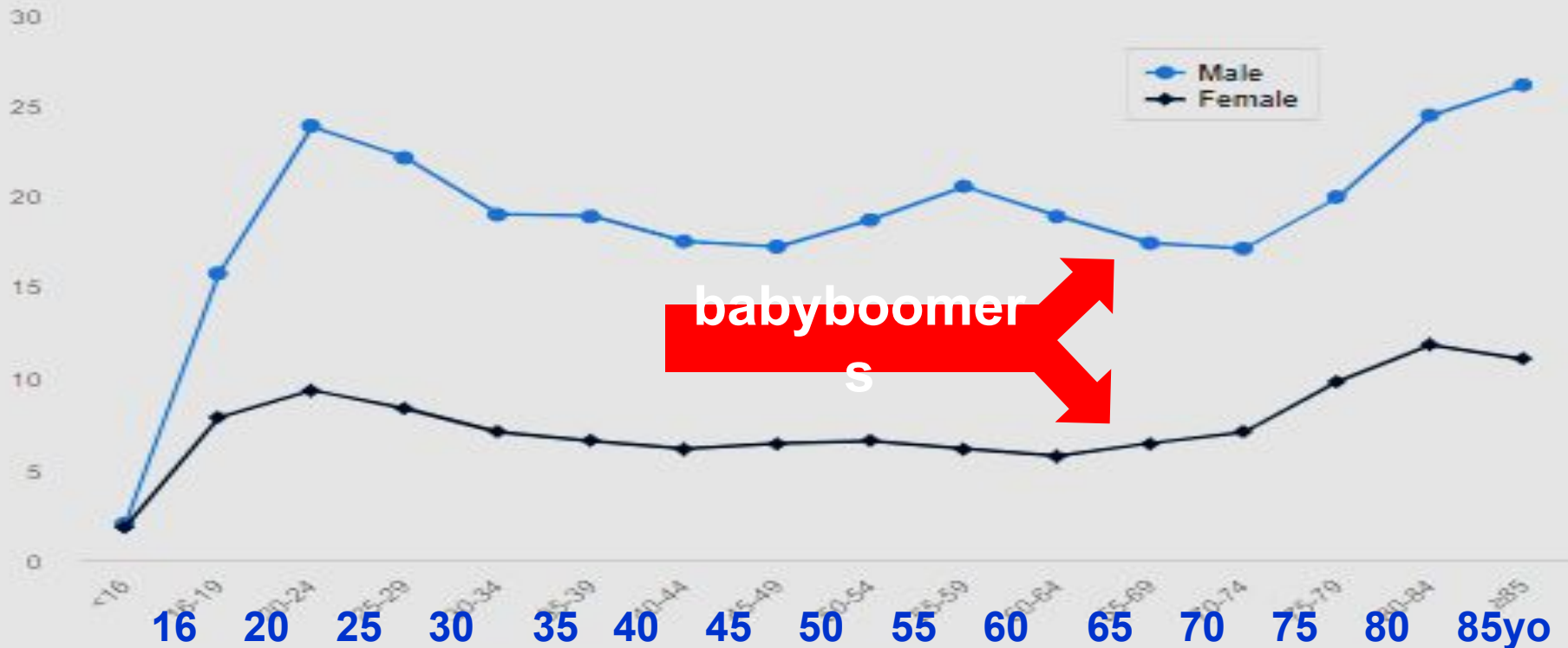


Also increased vulnerability even with steel around them



# Being age 75 or older is associated with higher risk of death when in a crash!

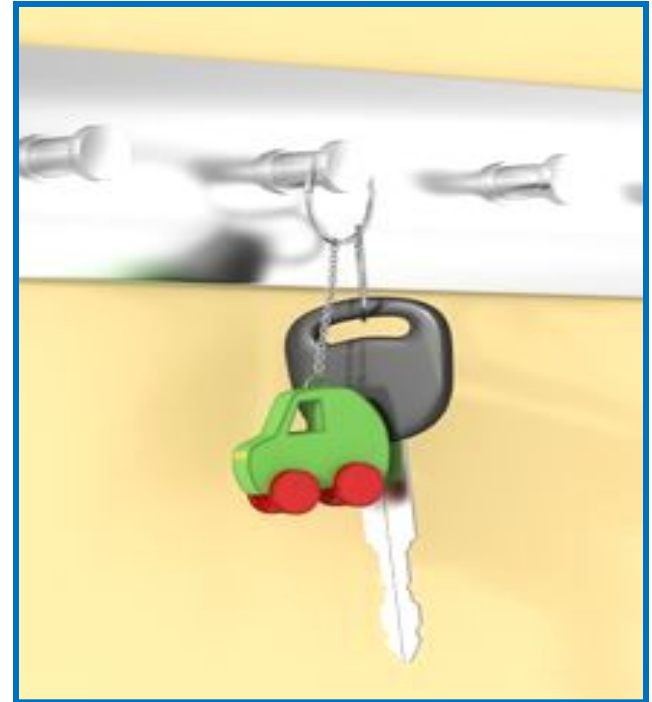
Crash deaths by age and sex in 2019\*



\*Per 100,000

Many drivers decide to retire from driving about age 75 due to self-recognized:

- vision
- strength & mobility
- cognition
- medical conditions
- medications that affect driving



However - we all age & accept aging differently, some better than others!  
And what if they don't, won't can't?

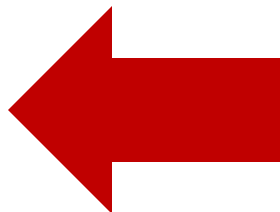
What can we do  
to keep our  
senior's safe?

# MN Older Driver Safety Project

Educating about:

- Changes with aging
- Signs of impaired skill
- Ways to improve skills
- Referral to a specialist
- Steps if very concerned

No  
driving



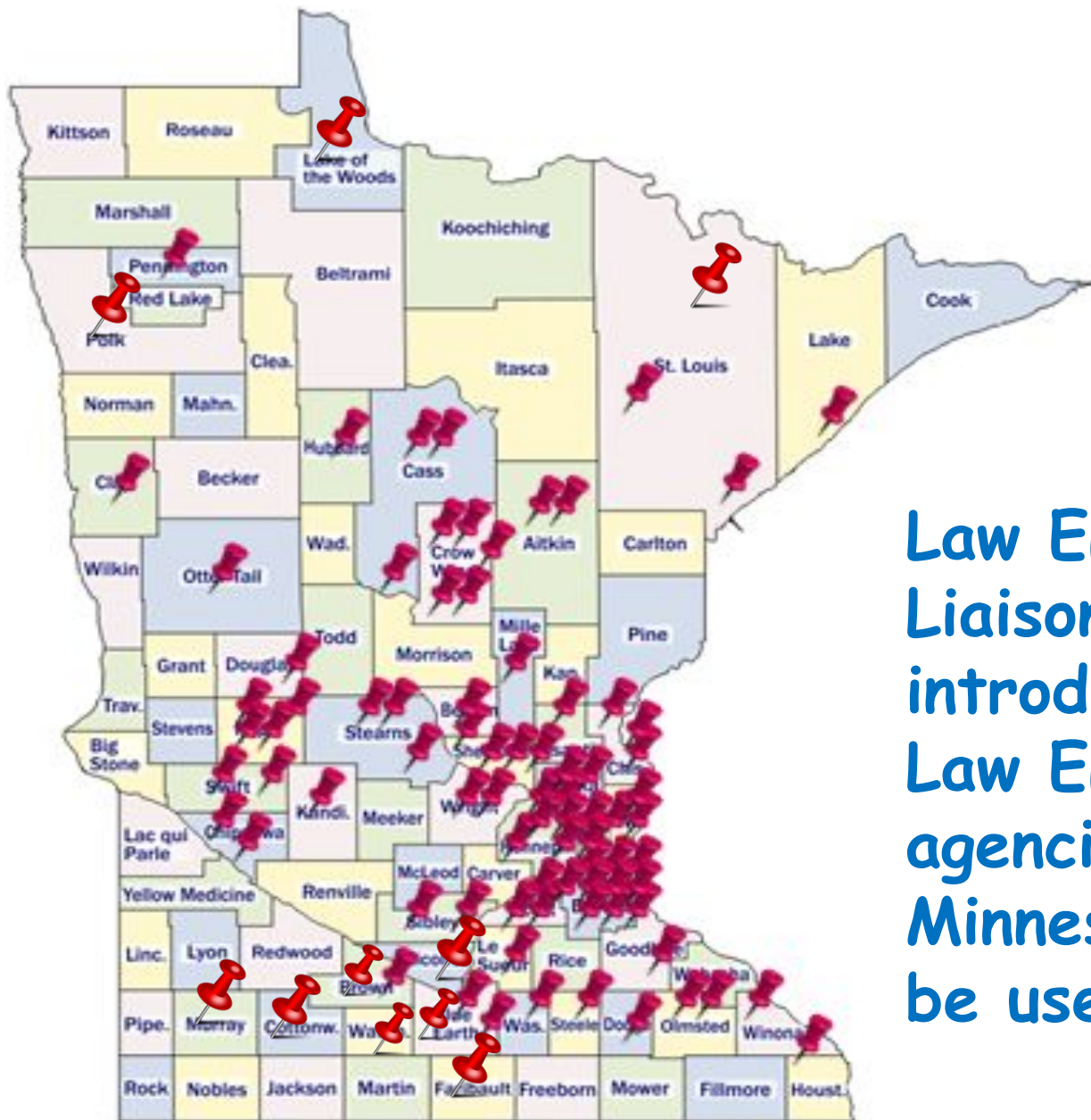
Safe  
driving



Last resort - Request for Examination of Driver form

Objectively  
"measuring"  
the driver's  
cognitive  
ability





Law Enforcement Liaisons helped me introduce DOSCI to Law Enforcement agencies across Minnesota, but it can be used by anyone!



Pins = Locations/agencies requesting DOSCI training

# DOSCI adjusted for Minnesota\*

- DOSCI maybe be used for any age pedestrian, bicyclist, or motorist.
- Questions do not need to be asked in order & may be worked into the conversation.
- **All 9 questions must be asked to create a score.**
- Each answer is 1 point.
- The 3 “bonus” questions provide additional helpful information about the driver's cognition.

**DOSCI**  
**DRIVER ORIENTATION SCREEN FOR  
COGNITIVE IMPAIRMENT**

RULE OUT INTOXICATION AND URGENT MEDICAL CONDITIONS

ASK ALL 9 QUESTIONS –  
GIVE ONE POINT FOR EACH INCORRECT RESPONSE

1. What is your date of birth
2. What is your full home address
3. What state are we in now?
4. What city/town are we in now?
5. Without looking at your watch, can you estimate what time it is now? (Answer provided must be plus or minus one hour of correct time)
6. What day of the week is it?
- 7 – 9. What is today's date?
  - Month
  - Day
  - YearPrompt for month, day, & year if needed

5 OR MORE INCORRECT: Unsafe to drive today ; refer to department procedures for alternative transportation and vehicle removal  
Submit Request for Examination of Driver

3-4 INCORRECT: Potentially unsafe to drive today; consider totality of circumstances/need for re-exam

0-2 INCORRECT: Based on totality of circumstances. Does not need referral for examination based on cognition

Additional questions to determine orientation

1. Where are you coming from and where are you going?
2. Will you please spell your name?
3. Do you have an emergency contact? What is their name and phone number?

Used, and adjusted with permission TREGS and University of California, San Diego

\*From the Driver Orientation Screen for Cognitive Impairment – DOSCI developed by Univ. of CA – San Diego used and adjusted with permission because Minnesota does not have a “priority” re-exam and to incorporate Minnesota related resources

# The Questions

**Rule out: INTOXICATION AND URGENT MEDICAL CONDITIONS**

**ASK ALL 9 QUESTIONS -**

**GIVE ONE POINT FOR EACH INCORRECT RESPONSE**

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  - Month • Day • YearPrompt for month, day, & year if needed

**Bonus points - spell name, where going to/coming from, phone number of family**



# What do the DOSCI scores mean?

Answers all but one or two questions correctly = cognitively intact.

Driver should be able to absorb road information, follow the rules of road, make good decisions, & drive in safe manner.



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May be having trouble interpreting or processing what is being said, asked, or traffic information.

May be situational, driving now is probably unsafe!



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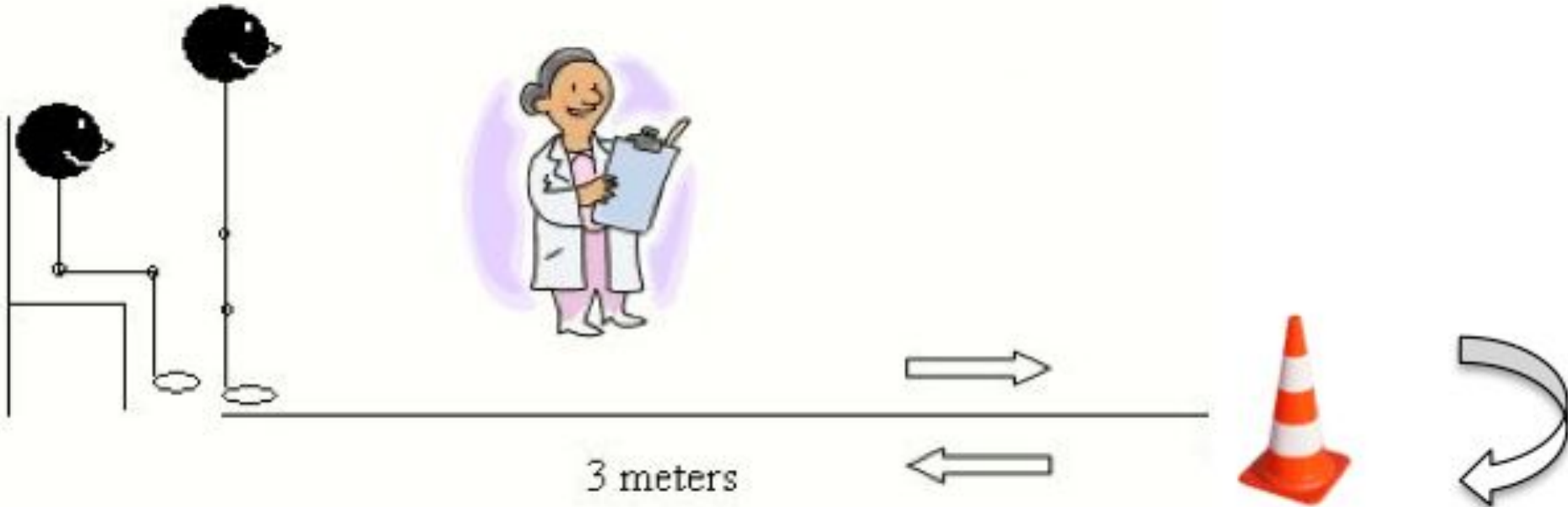
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5 or more answers wrong = highly confused and this is most likely not new. Driver will likely have difficulty controlling the vehicle, following roadway information, responding to traffic threats, may end up lost/dead.

It is best for all if they don't drive at this time & recommend completion of Request for Examination of Driver Form.



# Consider the driver's mobility - (Timed) Get up & Go (TUG) Test



- *Seconds*
- <10
- <20
- 20-29
- >30

## *Rating*

Freely mobile

Mostly independent

Variable mobility

Assisted mobility

Time > 30 sec =  
concern re: driving

- Only valid for patients not using an assistive device.

# "Request for Examination of Driver"

MINNESOTA DEPARTMENT OF PUBLIC SAFETY  
DRIVER AND VEHICLE SERVICES  
DRIVER EVALUATION UNIT  
445 MINNESOTA ST., SUITE 170  
ST. PAUL, MN 55101-5170

Print Form

### REQUEST FOR EXAMINATION OF DRIVER

**DRIVER INFORMATION**

First Name of Driver \_\_\_\_\_ Middle Name \_\_\_\_\_ Last Name \_\_\_\_\_  
Street Address \_\_\_\_\_ City \_\_\_\_\_  
Driver's License Number \_\_\_\_\_ Date of Birth \_\_\_\_\_

**INCIDENT INFORMATION**

Date and time of incident \_\_\_\_\_ Location of incident \_\_\_\_\_  
Was an accident involved?  YES  NO Was the driver given a citation?  YES  NO

Check one or more of the following that apply and describe in the summary section below:

General physical/health problem  Mental or emotional problem (including road rage, memory loss, etc.)  
 Diabetic loss of consciousness or voluntary control  Loss of consciousness or voluntary control (seizures)  
 Vision problem  Lack of knowledge of traffic laws  
 Lack of physical driving skills  Other \_\_\_\_\_  
 Violation of "ANY USE OF ALCOHOL/DRUG INVALIDATES LICENSE" restriction  
(Please attach report verifying alcohol/drug use)

**SUMMARY** - Describe in detail the driving actions or conditions that brought this driver to your attention. Why do you feel this driver should be re-examined? Please attach any pertinent reports that would be helpful to the driver evaluator. Age alone cannot be considered good cause for re-examination.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Reports from family members concerning an individual's ability to drive are confidential (M.S. 13.65). Driver and Vehicle Services is required to disclose the identity of all other person(s) reporting at the driver's request. Failure to provide the information requested below will result in no action being taken on the report.

I (thereby) submit this information to the Driver Evaluation Unit as good cause for re-examination of this driver under Minnesota Statute 171.13. Date \_\_\_\_\_  
Signature of Officer or Person Reporting \_\_\_\_\_ Title or Relationship to Driver \_\_\_\_\_ Badge Number (if applicable) \_\_\_\_\_ Phone Number \_\_\_\_\_  
Law Enforcement Agency or Printed Name of Person Reporting \_\_\_\_\_ City \_\_\_\_\_

P291924-09 (2/11/12)

Not an automatic  
loss of license!

- Cannot be issued based only on age
- Submitter's name may, or may not be "protected"
- Only first step in process

Forms with most impact were:

- Specific
- Descriptive
- Citation issued\*
- Legible\*

Google: "MN Request for Examination of Driver" form

<https://dps.mn.gov/divisions/dvs/forms-documents/Documents/DL-Request-Examination-of-Driver.pdf>

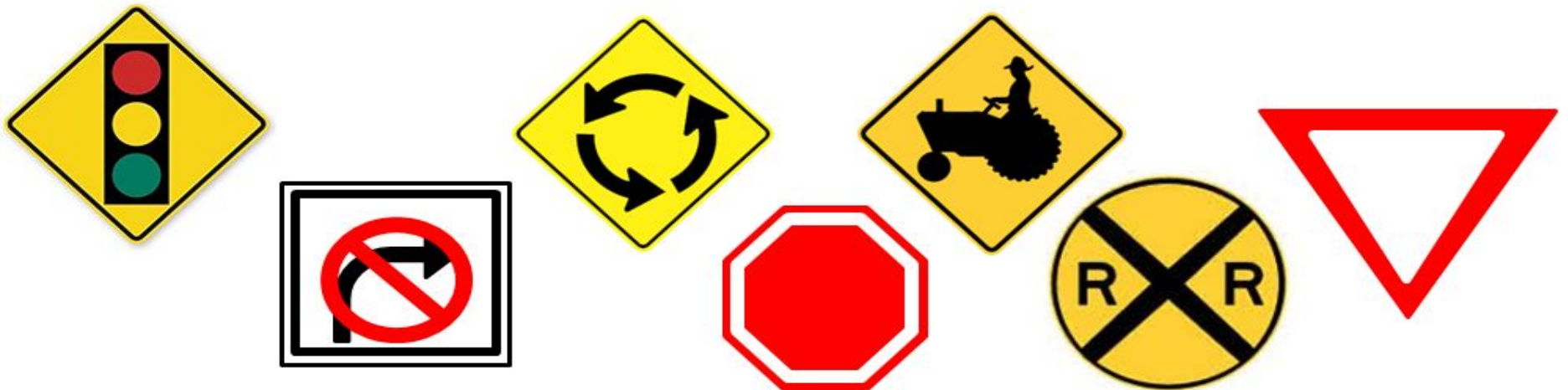
\* Per interview with Driver Evaluation Unit personnel

# Brief screening by Dept. Vehicular Services (DVS) medical unit

Lay-person's perspective of driver's physical & cognitive abilities

- Walk/move
- Respond to questions
- Appear alert
- Recognize road signs

May request a medical evaluation



\*DVS - Dept. of Vehicular Services

# Referral to an Occupational Therapist (OT) or Driver Rehabilitation Specialist (DRS)

- Check physical skills\*
- Check cognitive skills\*
- Check driving skills\*
- Recommend devices that assist safer driving\*
- List limitations that would decrease risks when driving \*
- Make recommendations to MN DVS



Identify safety options that help keep drivers safe & independent. Evals usually require MD "prescription" for insurance purposes.

# Provide safe driving info



Midwest Emo American Gothic Parody  
Designed and sold by [JoWillmot](#)

- Seniors safe driving tips especially the 4/7 info
- Families how to spot an unsafe senior driver
- Actions family can take if they are concerned
- Others how to teach seniors & families
- Where to find resources to do this



# Seven to do's **before** you drive

## 1. Plan ahead



# Seven to do's **before** you drive

## 2. Is it safe for me to drive now?

Don't drive if you say "yes" to any of these 7 D's

- Drinking
- Drugs
- Distracted
- Disoriented
- Distressed
- Drowsy
- Don't feel well



# Seven to do's before you drive

## 3. Exercise driving muscles

### Strengthening our driving muscles

- Driving requires physical strength & coordination
- Exercise can help maintain that strength & coordination
- 20 minutes of exercise per day has been shown to be helpful

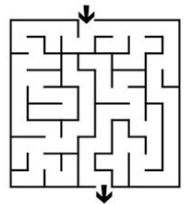
#### NOTE!

- Check with MD prior to exercise
- STOP if pain occurs
- DO NOT overdo - Start gently & slowly increase repetitions

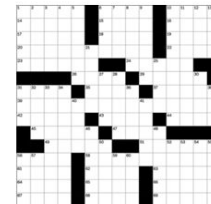


### Strengthening our Brain

- Driving requires cognitive skills - the ability to sort information and respond to it
- Brain exercises can help maintain brain health
- See your doctor to be sure your sight and hearing is good



Summer Word Search



# Seven to do's **before** you drive

## 4. Limit distractions

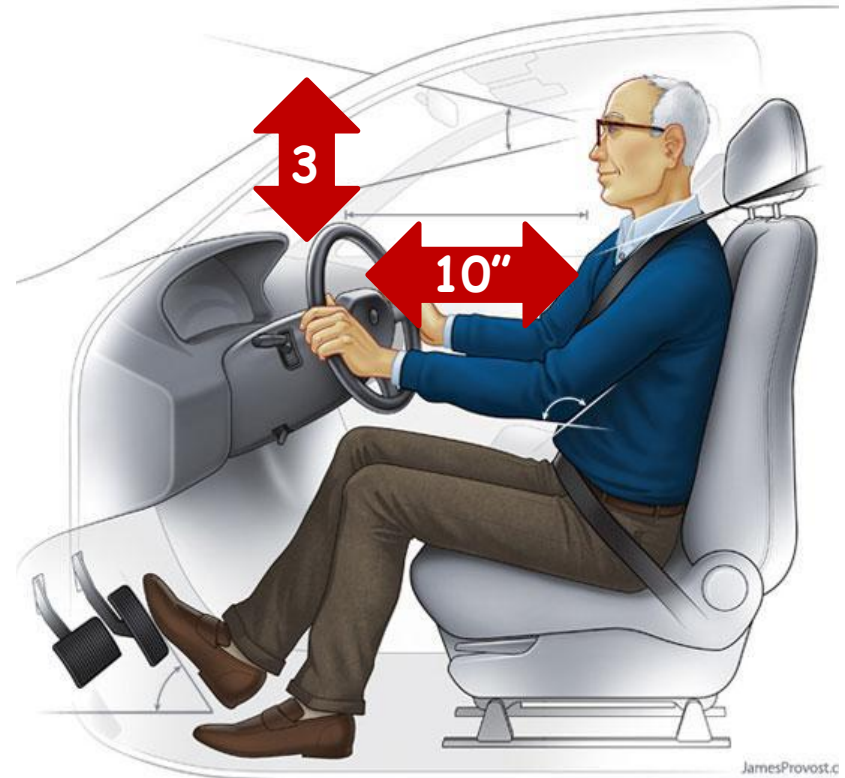
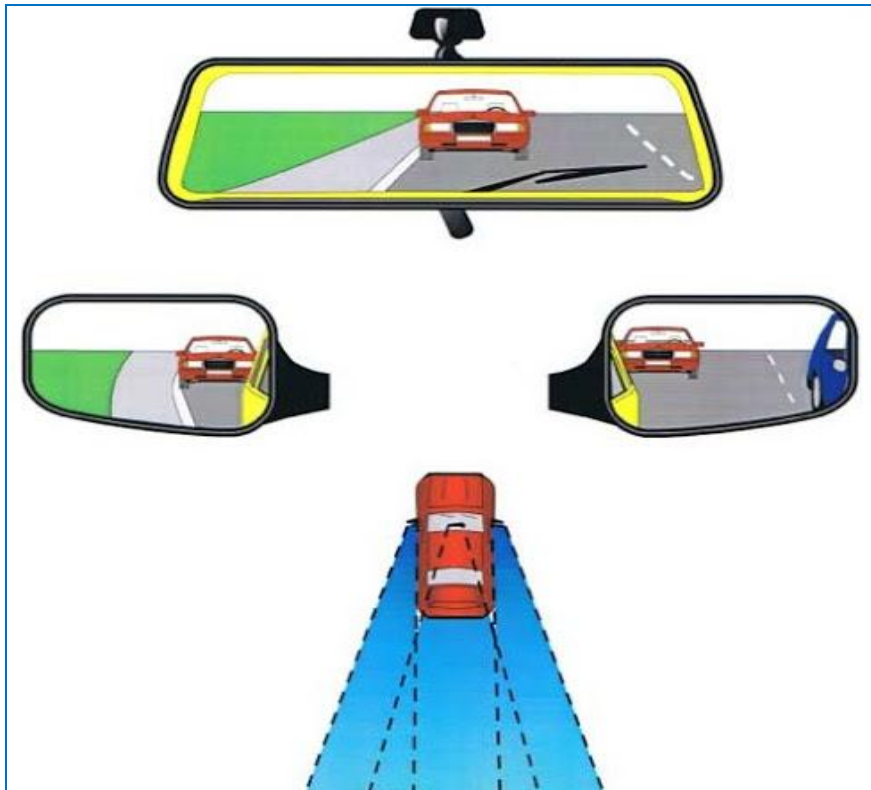
- Phone
- Food/fries
- Fluids
- Friends
- FM/AM radio
- Photograph
- Freshen make-up
- Fiddling with stuff



<https://www.facebook.com/EndDistractedDrving/photos/distractions-are-not-limited-to-cell-phone-use-anything-that-takes-a-drivers-han/1811842072209778/>

# Seven to do's **before** you drive

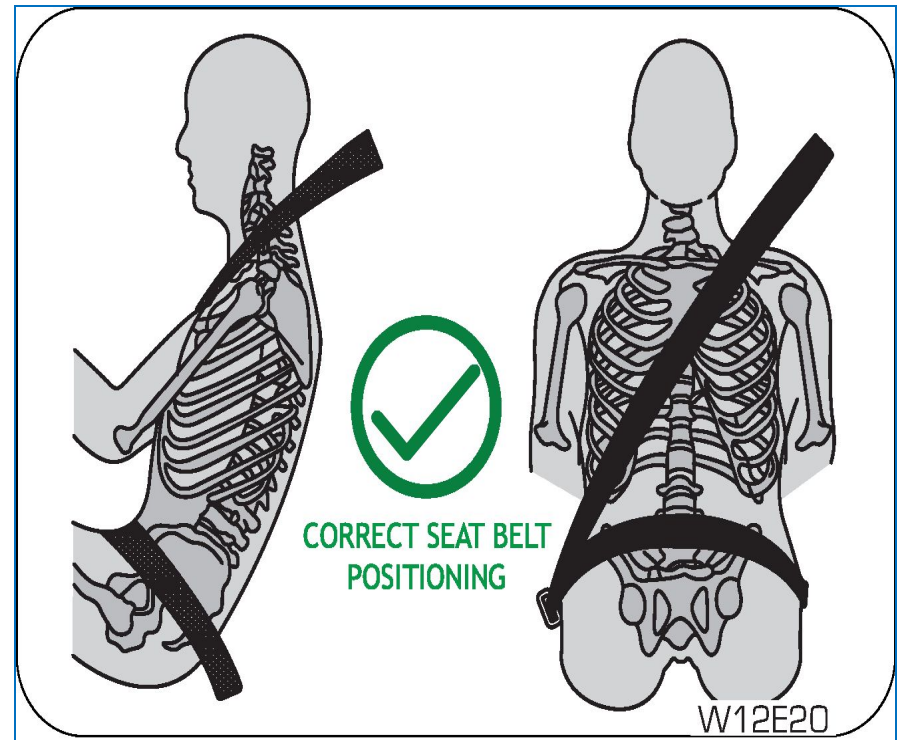
5. Correctly adjust steering wheel, car seat, mirrors, hands at 4 & 8



# Seven to do's **before** you drive

## 6. Properly wear your safety belt

- Over your shoulder - not under your arm
- Across your collarbone - not resting against neck
- Low on your hips (under the belly bulge if you have one)



**This is especially important in the older adult who have more brittle bones and less stretchable innards!**

# Seven to do's before you drive


## 7. Ask: Will my medications affect my driving?



### Cannabis

- Legal in many states
- Oral takes longer to cause effects - up to 45 minutes!
- Causes impairment ↓ ↑
- Impaired is impaired (impairment can last up to 12 hours)





**Medications, over the counter drugs, & herbal supplements can cause drowsiness, weakness, dizziness, or affect your vision.**  
Talk with your pharmacist or provider & find out before you get behind the wheel!

This list is NOT all inclusive Check all Meds with your provider or pharmacist

**EIA**  
Greater Twin Cities Chapter  
Emergency Nurses Association  
drivoriented@gmail.com

**These medications can affect your driving**

**Opioids or narcotic pain medications**

- Oxycodone (OxyContin, Roxicodone, Percocet)
- Hydrocodone (Lortab, Vicodin)
- Fentanyl (Duragesic)

**Anti-depressant or mood medicines**

- Fluoxetine (Prozac)
- Amitriptyline (Elavil)

**Anti-anxiety medications**

- Diazepam (valium)
- Alprazolam (Xanax), Lorazepam (Ativan)

**Prescription & Over the Counter Sleep Aids**

- Zolpidem (Ambien)
- Diphenhydramine (Benadryl)

**High Blood Pressure/heart medication**

- Metoprolol (Toprol, Lopressor)
- Amlodipine (Norvasc) Bisoprolol (Zebeta)
- Furosemide (Lasix) Carvedilol (Coreg)

**Muscle relaxing medications**

- Carisoprodol (Soma), Tizanidine (Zanaflex)
- Cyclobenzaprine (Flexaril)

**Anti-psychotic or mood stabilizing meds**

- Risperidone (Risperdal) Trazodone, Celexa,
- Quetiapine (Seroquel) Lexapro, Paxil, Prozac
- Cymbalta, Effexor, Elavil, Pamelar

**Anti-seizure medications** (Dilantin, Depakote, Valproic Acid, Tegretol)

Topiramate (Qsymia AKA Dopamax)

May 2022

**Over the counter medications that can cause drowsiness**


**Anti-allergy, cold, & sleeping pills**

Diphenhydramine (Benadryl, Tylenol PM)  
Bromfed, Dimetapp  
Hydroxyine (vistaril, atarax)  
Meclizine (Antivert)  
Doxylamine (Unisom)  
Cetirizine (Zyrtec,  
Levocetirizine (Xyzal)  
Fexofenadine (Allegra)  
Loratadine (Claritin)

**Medicines for:**

- diarrhea (Imodium)
- motion sickness (scopolamine)

Diet pills, "stay awake" drugs, and other stimulant medications can affect judgment (e.g., caffeine, ephedrine, pseudoephedrine) - Sudafed



**Herbal remedies that can affect driving**

- Melatonin
- Valerian
- St. John's Wort
- Cannabidiol (CBD)
- Lavender
- Passion Flower
- GABA
- Chamomile

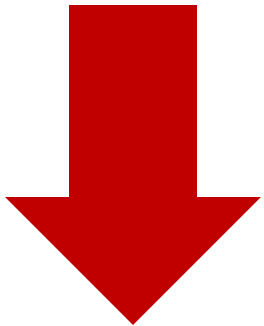
These are only some of the common over the counter & Herbal medications that can affect mental status & driving

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May 2022

# Seven to do's **before** you drive

1. Plan ahead
2. Ask: Is it safe for me to drive now?
3. Exercise driving muscles
4. Limit distractions.
5. Correctly adjust steering wheel, seat, mirrors
6. Properly wear your safety belt
7. Ask: will medications/alcohol affect my driving?



**Recently added**



# 8. Make a plan on how you will retire from driving



How will I get:

- a. Groceries
- b. To the doctor
- c. My meds
- d. To the vet
- e. To church
- f. To.....

Who can I ask?

# Safe Driving Measures for Seniors

Attend road safety/accident prevention classes

- AAA
- AARP
- National Safety Council
- Courses previously called-  
"55 Alive"

There are **MANY** other options



**CARFiT** 

Helping Mature Drivers Find Their Safest Fit

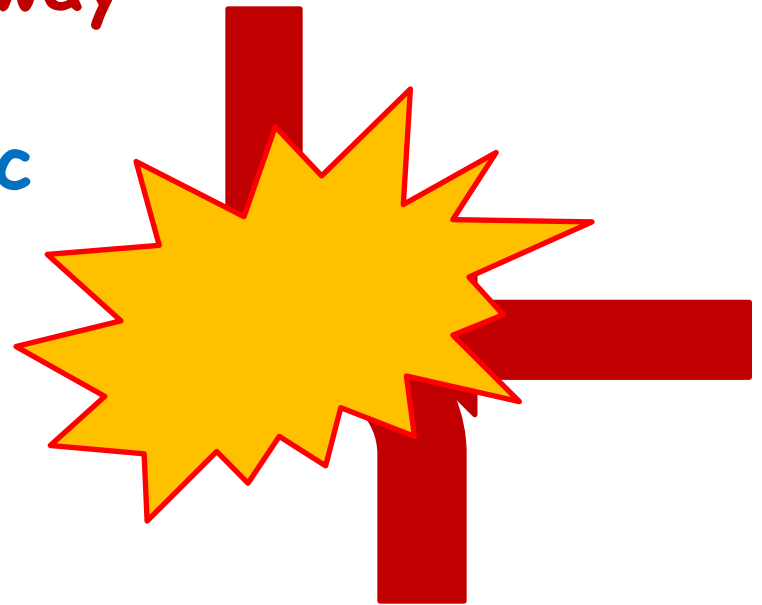
**AOTA** The American Occupational Therapy Association, Inc.  **AARP** Driver Safety

Attend a "CarFit"  
event [Car-Fit.org](http://Car-Fit.org)

# Safe Driving Measures for Seniors

The most common contributing factors to crashes involving those over 65

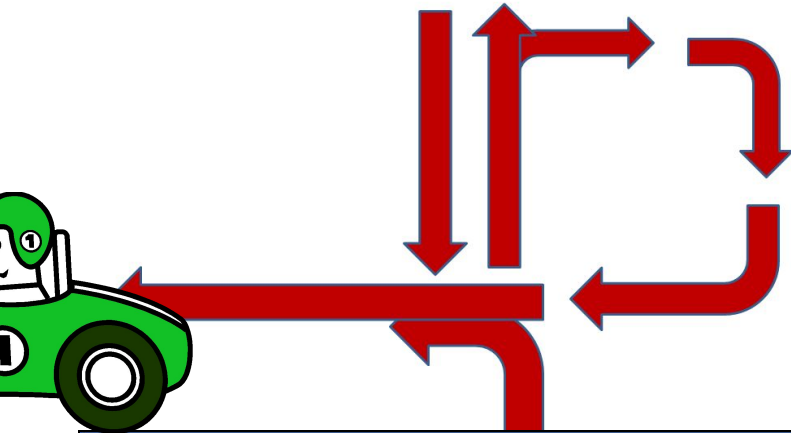
- Failure to yield right of way\*
- Improper turn/merge
- Careless/negligent/erratic
- Following too closely



\*Based on 2019 Minnesota Crash Facts – failure to yield is 3 x the rest, but all are more frequently listed than for younger drivers this is also seen nationally in IIHS data <https://www.iihs.org/topics/older-drivers>

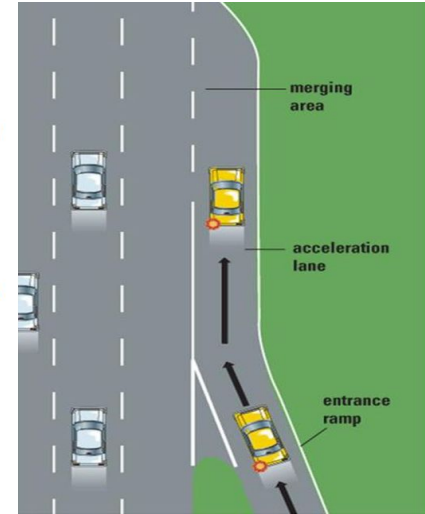
# Safe Driving Measures for Seniors

## 3 Rights instead of 1 Left

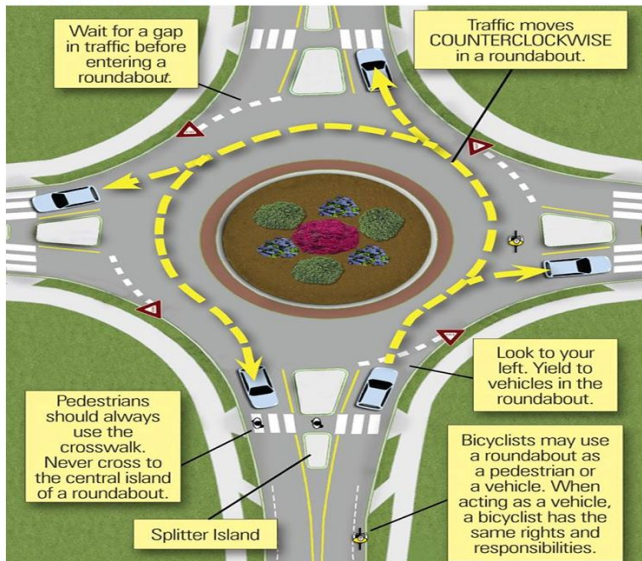


## Merging

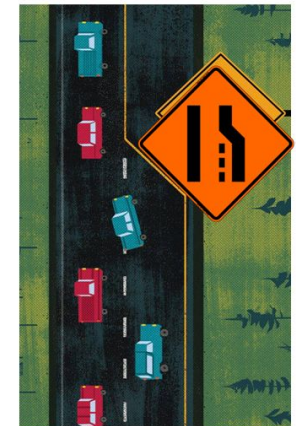
Entrance ramps provide time to look for an opening and accelerate so you are going the same speed as the traffic flow when you merge. Engage blinker! Ensuring your mirrors are adjusted correctly will help eliminate blind spots



## Roundabouts!



## Zipper Merging



Road construction areas have been identified as a high risk due to changes in traffic flow, need to merge, and increased sensory input. Avoid if possible.

# Safe Driving Measures for Seniors



Ask yourself "How long does it take to get my car moving? But, don't be afraid to wait 'til it's clear!"

# Actions to consider if concerned about other's driving?



- Ask about alternatives to driving, arrange for ride now
- Request referral for evaluation by a Certified Driver Rehabilitation Specialist/Occupational Therapist
- Report driver to DVS using "Request for Examination of Driver" form

# Safer Senior Driving Resource File



**Do you know someone who should retire from driving?**

**Questions, Answers, Suggestions, Resources, Increasing Road Safety Across Minnesota**

**EIA**  
Emergency Response Association  
Minnesota State Council  
www.minnesotaeia.com

**DOCBI DRIVER ORIENTATION SCREEN FOR COGNITIVE IMPAIRMENT**

**ASK ALL 8 QUESTIONS:**

1. What is your date of birth?
2. What is your full home address?
3. What people are you in touch?
4. What activities are you in touch?
5. Without looking at your watch, how you estimate what time it is now? (Answer provided should be plus or minus one hour of correct time)
6. What day of the week is it?
7. Is it winter in today's date?
  - Month
  - Day
  - Year

**Score**

**Seven Things to do BEFORE You Drive**

1. Plan ahead.
2. Ask yourself, "Is it safe to drive now?"
3. Exercise your driving muscles.
4. Get a check-up.
5. Connect with your driving coach, car seat or brakes.
6. Properly use your safety belt.
7. Ask yourself, "How will my medication or alcohol affect my driving?"

**Safe Driving for Older Drivers**

**TOWARD ZERO DEATHS**

**Four Factors Impacting Safe Driving**

1. Physical changes
2. Cognitive changes
3. Medical conditions
4. Medications

**Aging & Safe Driving**

**Driving requires: Physical & Cognitive abilities**

**Normal aging changes:**

- Muscle strength & flexibility - including neck, leg, arms
- Hearing ability to hear fast/slowly
- Vision & hearing
- Brain's ability to process sensory information from eyes, ears, mouth
- Ability to sort out distractions
- Reaction time & appropriate response
- Pain with movement

**Medical conditions & Medications can affect driving**

**Signs of cognitive changes & unsafe driving**

- Forgetfulness
- Trouble to find things (car, keys, house, water, etc.)
- Getting lost on familiar streets
- Trouble remembering names, times, places, appointments
- Flipping or other unusual driving
- Confusion, anxiety, anger when asked questions
- Driving at night and/or in bad weather
- Driving at night and/or in bad weather
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**Drivers 65 Plus: Check Your Performance**

A Self-Rating Tool with Facts and Suggestions for Safe Driving

**A ROADMAP FOR DRIVING LATER IN LIFE**

It's never too late to keep driving safely as you age.

• Stay safe on the road  
• Plan ahead  
• Get a check-up  
• Stay alert  
• Stay hydrated

**A ROADMAP FOR DRIVING LATER IN LIFE**

**MyNeighborhood** A plan to stay mobile in my community

**Plan your plan by filling out the table below:**

Think of all the places you go and how you get there.

Then, consider how you could get to those same places if you couldn't use your current way.

Where do I go now?	How do I get there now?	How will I get there in the future?
Most trips for work	Drive myself	Get a ride from a friend

For more information visit: [www.cdc.gov/motorvehiclesafety/older\\_adult\\_drivers/mymobility](http://www.cdc.gov/motorvehiclesafety/older_adult_drivers/mymobility)

**SAFE DRIVING FOR A LIFETIME**

**WE NEED TO TALK ...**

Family Communication with Older Drivers

**These medications can affect your driving**

• Sleepiness or drowsiness  
• Slowed reaction time  
• Impaired judgment  
• Blurred vision  
• Dizziness  
• Dry mouth

**Herbal Remedies that can affect driving**

• St. John's Wort  
• Ginseng  
• Ginkgo biloba  
• Valerian  
• Kava  
• Ephedra  
• Licorice  
• Ashwagandha  
• Echinacea  
• Garlic  
• Green tea  
• Ginseng  
• Ginkgo biloba  
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• Green tea

Available at: [www.minnesotaeia.com](http://www.minnesotaeia.com)

Driving is not an “all or none”  
thing.....

it is a  
balance  
of:

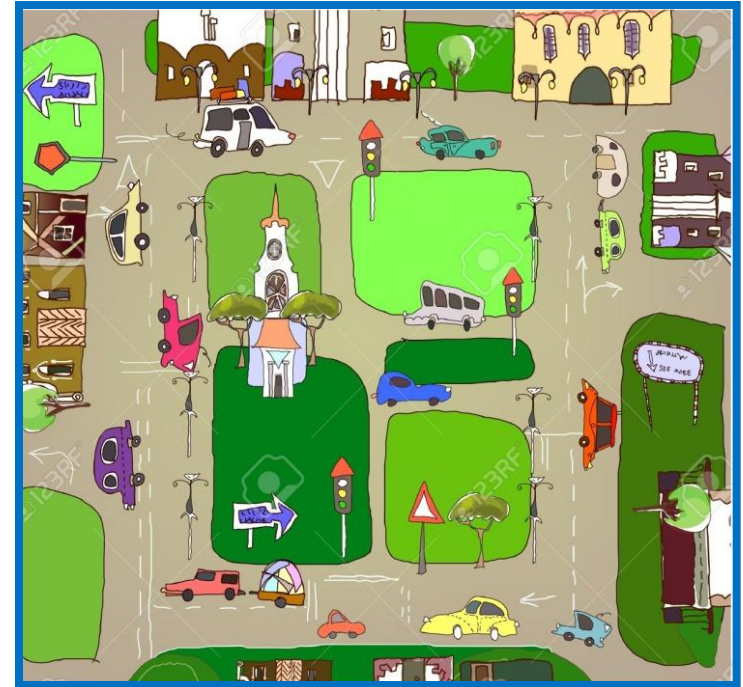


independence versus safety



# Most “older” drivers are very safe

- Travel less miles
- Wear their seat belt
- Drive the speed limit
- “Sober” when driving
- Follow rules of road
- Less crashes at night
  - likely because they don't drive at night



There may be “near misses” not captured in the data

# Contribution of 4 Major Risk Factors to Fatalities from 2016 Through 2022\*

Risk Factor	N	Percent
Alcohol or Drugs	1,136	40.3%
Speed	787	27.9%
Failure to Wear Seat Belts	628	22.3%
Distraction	210	7.4%
None of the 4 Major Risk Factors	1,029	36.5%

\* Percentages do not total to 100% because some fatalities involve multiple risk factors.

# Traffic Fatalities by Age Grouping, 2016-22

Age Grouping	2019 Population Estimates		All Fatalities*	
	N	Percent	N	Percent
14 and Younger	1,084,215	19.2%	62	2.2%
15-19	361,131	6.4%	213	7.6%
20-34	1,118,545	19.8%	690	24.5%
35-54	1,398,938	24.8%	785	27.8%
55-64	756,421	13.4%	447	15.8%
65 and Older	920,382	16.3%	624	22.1%
<b>Total</b>	<b>5,639,632</b>	<b>100%</b>	<b>2,821</b>	<b>100%</b>

# Traffic Fatalities by Age & Major Risk Involvement, 2016-22

Age Grouping	At Least One Major Risk Factor Present		No Major Risk Factors Present	
	N	Percent	N	Percent
12 and Younger	33	1.8%	29	2.8%
13-19	140	7.8%	73	7.1%
20-34	548	30.6%	142	13.8%
35-54	544	30.4%	241	23.4%
55-64	259	14.5%	188	18.3%
65 and Older	268	15.0%	356	34.6%
<b>Total</b>	<b>1,792</b>	<b>100%</b>	<b>1,029</b>	<b>100%</b>

# Selected Contributions to Fatalities, 2016-22

Fatality Risk Type	N	Percent of All Fatalities
Alcohol/Drug Only	503	17.8%
<b>65 and Older, No Major Risk Factors</b>	<b>356</b>	<b>12.6%</b>
Alcohol/Drug & Speeding	270	9.6%
Speeding Only	224	7.9%
No Seat Belts Only	210	7.4%
Alcohol/Drug & No Seat Belts	148	5.2%
Alcohol/Drug, Speeding, No Seat Belts	145	5.1%
Distraction Only	92	3.3%
Speeding & No Seat Belts	82	2.9%
All Other Major Risk Factor Combinations	118	4.2%

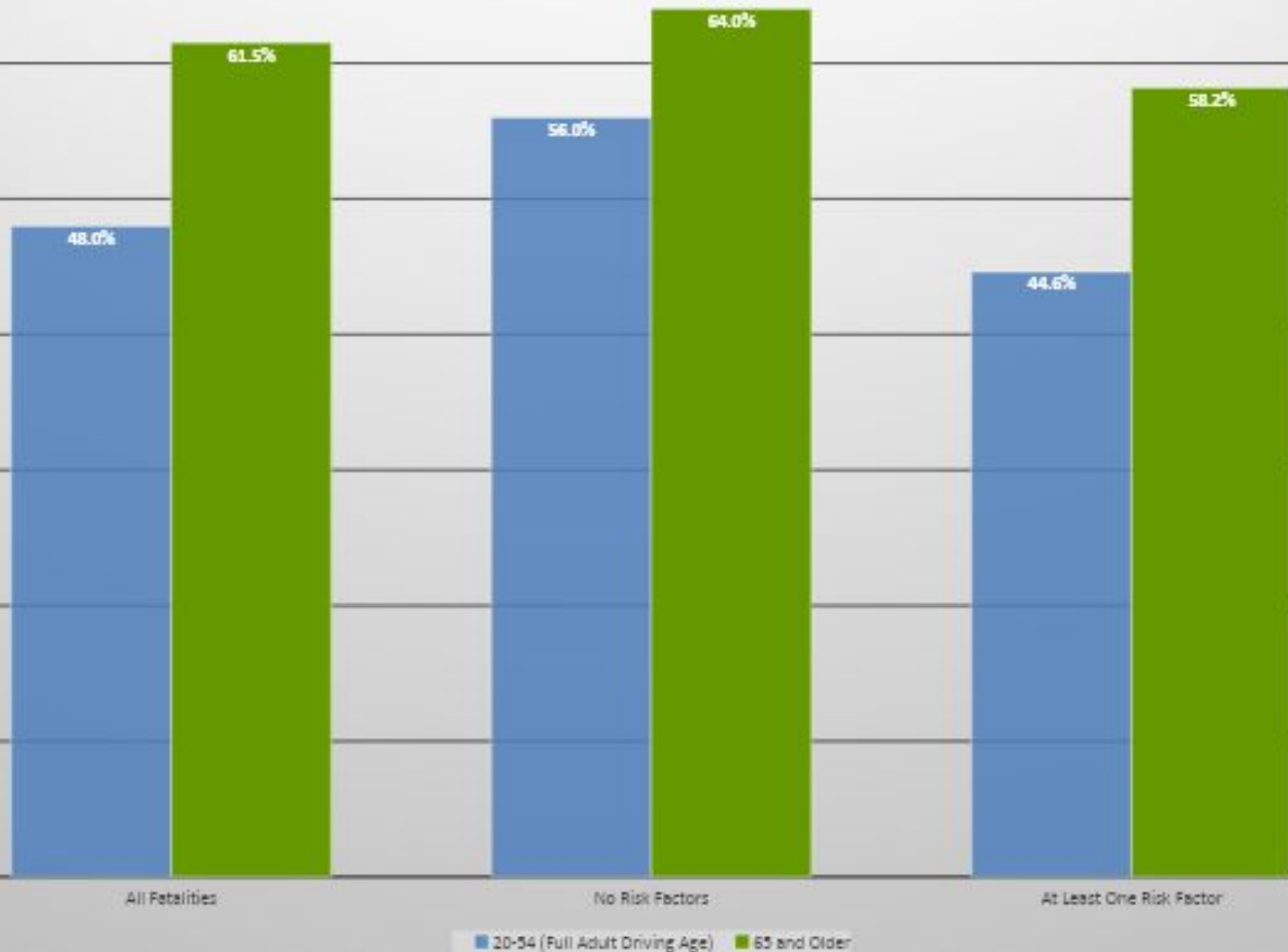
# Percent of Fatalities with No Major Risk Factors Present by Age, 2016-22

Age Grouping	Total Fatalities	Fatalities with No Major Risk Factors	Percent with No Major Risk Factors
12 and Younger	62	29	46.8%
13-19	213	73	34.3%
20-34	690	142	20.6%
35-54	785	241	30.7%
55-64	447	188	42.1%
65 and Older	624	356	57.1%
<b>Total</b>	<b>2,821</b>	<b>1,029</b>	<b>36.5%</b>

# Percent of Fatalities with No Major Risk Factors Present for Those 65 and Older, 2016-22

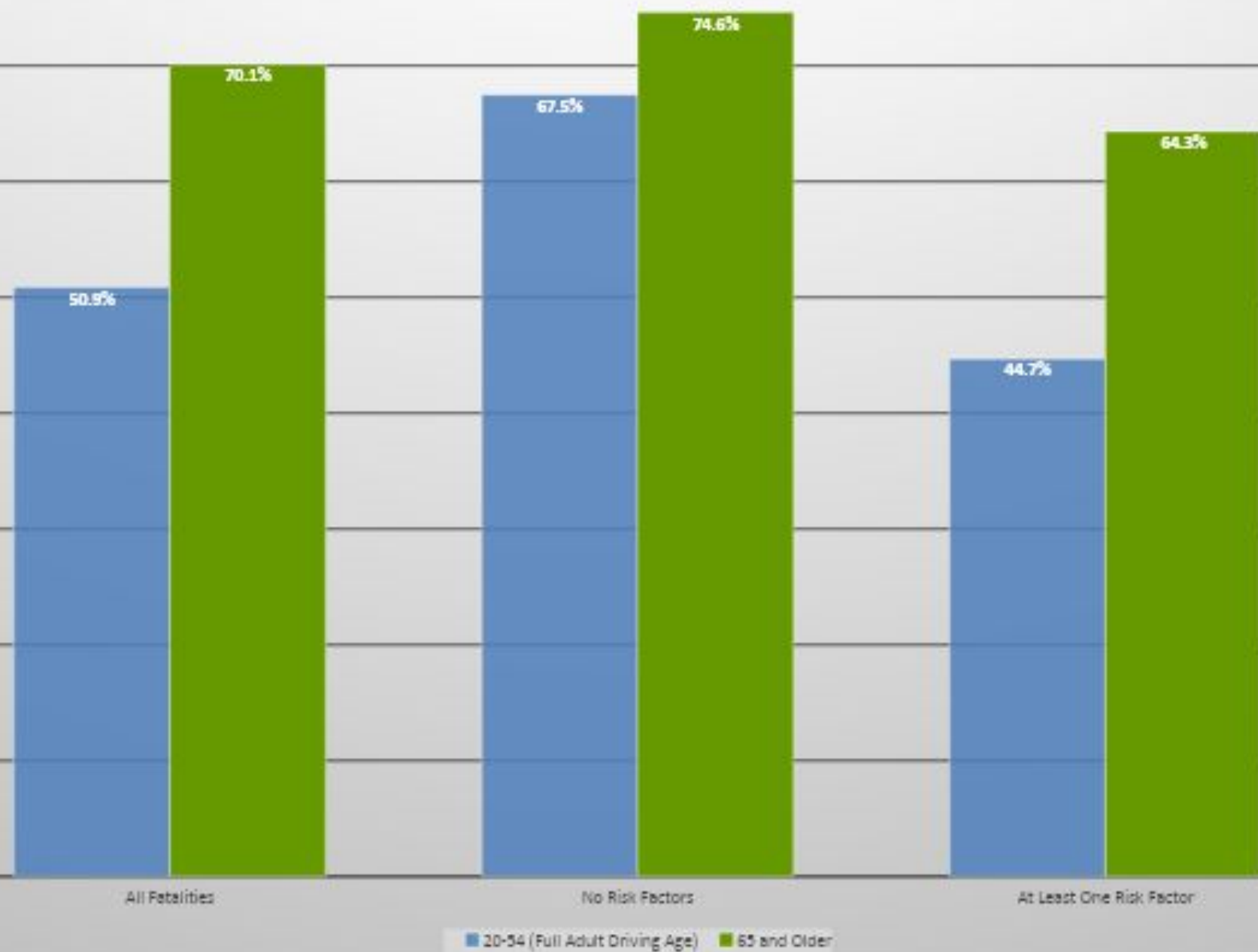
Age Grouping	Total Fatalities	Fatalities with No Major Risk Factors	Percent with No Major Risk Factors
65-70	199	93	46.7%
71-80	237	142	59.9%
81 and Older	188	121	64.4%
<b>65+ Total</b>	<b>624</b>	<b>356</b>	<b>57.1%</b>

## Percent of Fatalities in Multiple Vehicle Crashes 2016-22

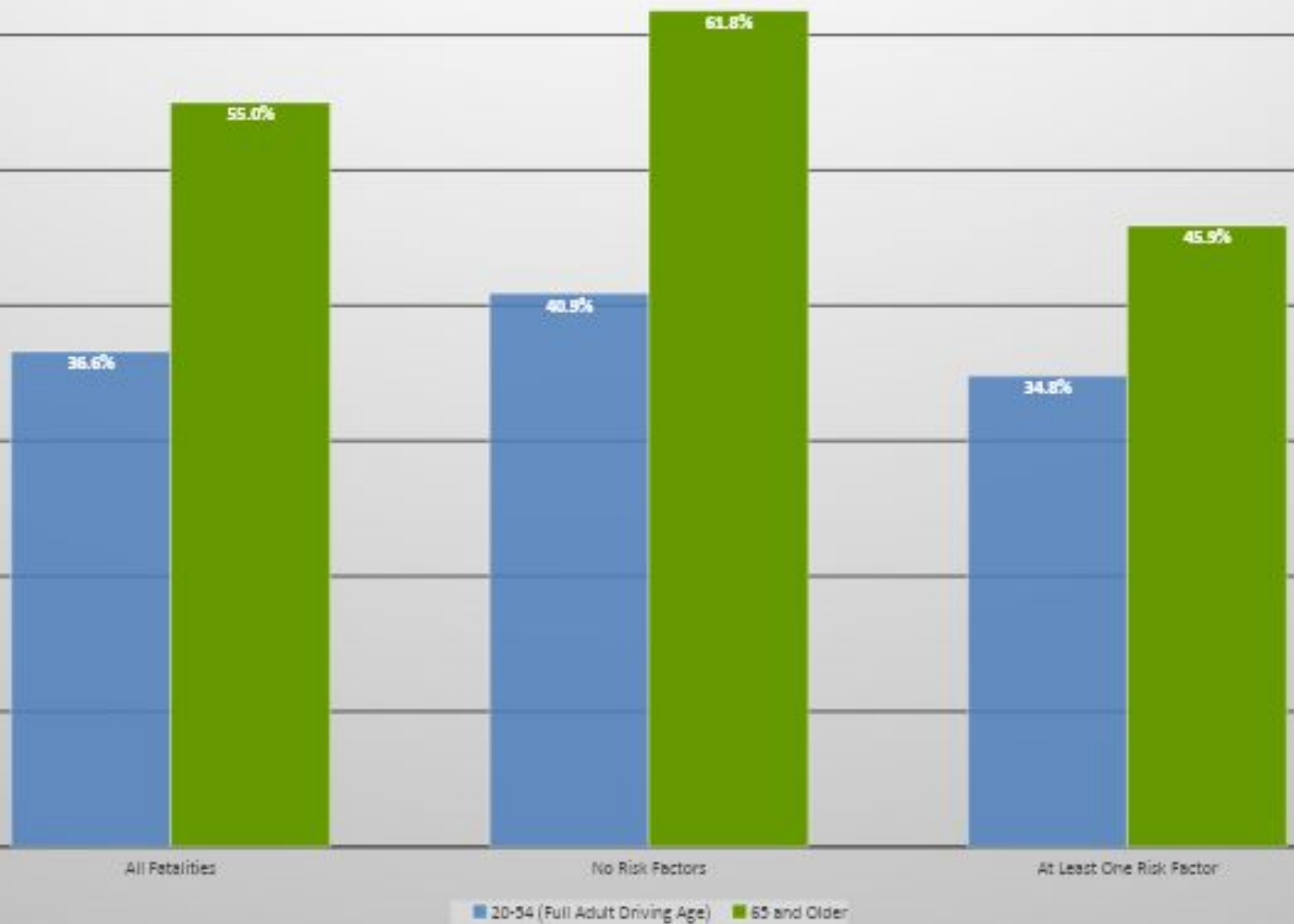




## Percent of Fatalities in Collisions with Non-Fixed Objects 2016-22



## Percent of Fatalities in Intersection-Related Crashes 2016-22



# Common Behavioral Contributing Factors to Fatal Crashes 2016-22

Behavioral Contributing Factor	Total N	No Risk Factors		Risk Factors	
		N	Percent	N	Percent
Speeding	349	0	0.0%	349	100%
Failed to Keep in Proper Lane	324	107	33.0%	217	67.0%
Careless/Negligent/Erratic	264	27	10.2%	237	89.8%
Ran Off Road	251	64	25.5%	187	74.5%
<b>Failure to Yield Right-of-Way</b>	<b>216</b>	<b>143</b>	<b>66.2%</b>	<b>73</b>	<b>33.8%</b>
Over Correcting/Over Steering	127	26	20.5%	101	79.5%
Wrong Side or Wrong Way	100	31	31.0%	69	69.0%
Ran Stop Sign	86	40	46.5%	46	53.5%
<b>Total</b>	<b>2,821</b>	<b>1,029</b>	<b>36.5%</b>	<b>1,792</b>	<b>63.5%</b>

# Senior Involvement in Selected Behavioral Contributing Factors in Non-Risk Factor Crashes

Behavioral Contributing Factors of Note	No Risk Factors		
	Total	65+	Percent 65+
Failure to Yield Right-of-Way	143	86	60.1%
Ran Stop Sign	40	20	50.0%
Wrong Side or Wrong Way	31	16	51.6%

# Minnesota Seniors More Likely to Die or Be Seriously Injured in Routine Traffic Conditions

- Crashes Involving Multiple Vehicles
- Collisions with Non-Fixed Objects (Usually Other Vehicles)
- Crashes In or Around Intersections
- Crashes Involving Failure to Yield Right of Way

Traffic Safety Literature Notes Similar Findings

# Frailty & Physical Limitations

“Higher fatal crash involvement may be related to the prevalence of frailty that increases with age, and an estimated 3% increase in risk of death when involved in a crash for each year of aging.”

- Cox and Cicchino 2021, citing Clegg et al 2013; Kahane 2013

# Minnesota Fatal Crashes 2016-22

- **2,821** people were killed in fatal crashes on Minnesota roadways between 2016 and 2022
- **6,178** people were involved in those fatal crashes
- **45.7%** of the people involved in fatal crashes were killed in them (2,821 out of 6,178)

# Percent of People Involved in Fatal Crashes Who Were Killed by Age, 2016-22

Age Grouping	Total Involved	Total Killed	Percent Killed
12 and Younger	355	62	17.5%
13-19	661	213	32.2%
20-34	1,619	690	42.6%
35-54	1,694	785	46.3%
55-64	855	447	52.3%
65 and Older	963	624	64.8%
<b>Total</b>	<b>6,147*</b>	<b>2,821</b>	<b>45.9%</b>

\*There were 31 people who survived fatal crashes whose ages were unknown or not reported.



# Percent of People 65 and Older Involved in Fatal Crashes Who Were Killed, 2016-22

Age Grouping	Total Involved	Total Killed	Percent Killed
65-70	328	199	60.7%
71-80	385	237	61.6%
81 and Older	250	188	75.2%
<b>65+ Total</b>	<b>963</b>	<b>624</b>	<b>64.8%</b>

# To Summarize...

- Seniors make up a significant portion of low-risk factor fatalities
- They are more likely to encounter difficulties in routine traffic situations
- Frailty and other physiological factors make seniors more likely to die in traffic crashes than younger people

Can a case be made that they represent a form of vulnerable road user?

# Vulnerable Road Users

- Those subject to traffic hazards outside of motor vehicles (pedestrians, bicyclists, scooters, wheelchairs, etc.)
- Motorcycles are a next level of vulnerable user
- While senior drivers enjoy the security of being in a motor vehicle, the challenges identified here suggest that their security may not be as great as those for younger motor vehicle users
- Does this make seniors a vulnerable class of traffic users?



Seniors are taking steps to be safer.

But should it all be on the seniors?

# Final Questions to Ponder:

- Are seniors disproportionately affected by the more aggressive driving techniques of the general population (passing on the right, u-turns anywhere, impatience with congestion, etc.)?
- Do we place too much emphasis on safe driving as a skill-based activity, and not enough on the need to increase cooperation on the roadways?

# "Am I safe when I drive?"

Answer: yes.... or no.....

- a. I get honked at or passed a lot
- b. Stop for green lights or go through red ones
- c. Find myself drifting, weaving, "kissing the curb"
- d. I yell at other drivers (or make gestures)
- e. Cars suddenly appear from "no where"
- f. My friends/family won't ride with me

**Is it the senior's ability & frame of mind?**

Are older drivers being forced into driving beyond their capability by other drivers and taking risks they cannot carry out due to their aging bodies?





Are our seniors the canaries in the coal mine of our roadways?



# Increasing Aging Driver Safety

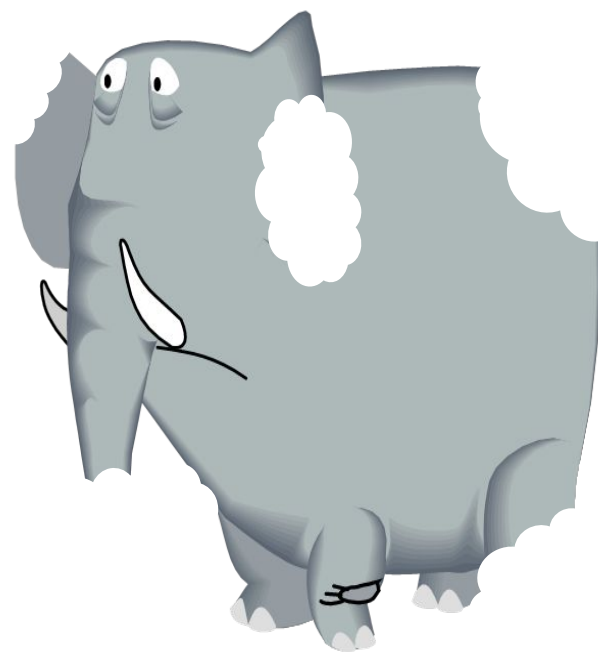
- ☞ Requires increased awareness of factors associated with aging that “impair safe driving”.  
(changes in vision, hearing, reaction time, strength, sensation, cognition & thinking)
- ☞ Most senior drivers know when to retire/limit driving  
- some need help to decide
- ☞ Seniors may be pushed to drive beyond their ability by others

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Brian Harmon

[Brian.Harmon@state.mn.us](mailto:Brian.Harmon@state.mn.us)



# KINDNESS MATTERS

ONE KIND ACT CAN SAVE  
SOMEONE'S ENTIRE LIFE

*Show  
respect*

**PUT YOUR PHONE AWAY  
TRY A FRIENDLY WAVE, NOT  
THE NASTY FINGER!**

*Be polite when driving*

**Let someone go in front of you in traffic**

**Give a  
gentle**

*beep-beep*

VS.

**HONK**

**HONK!**

**ENA**<sup>™</sup>

EMERGENCY NURSES  
ASSOCIATION

Minnesota State Council