

# Ontario's Senior Driver Programs: Promoting Safety and Mobility

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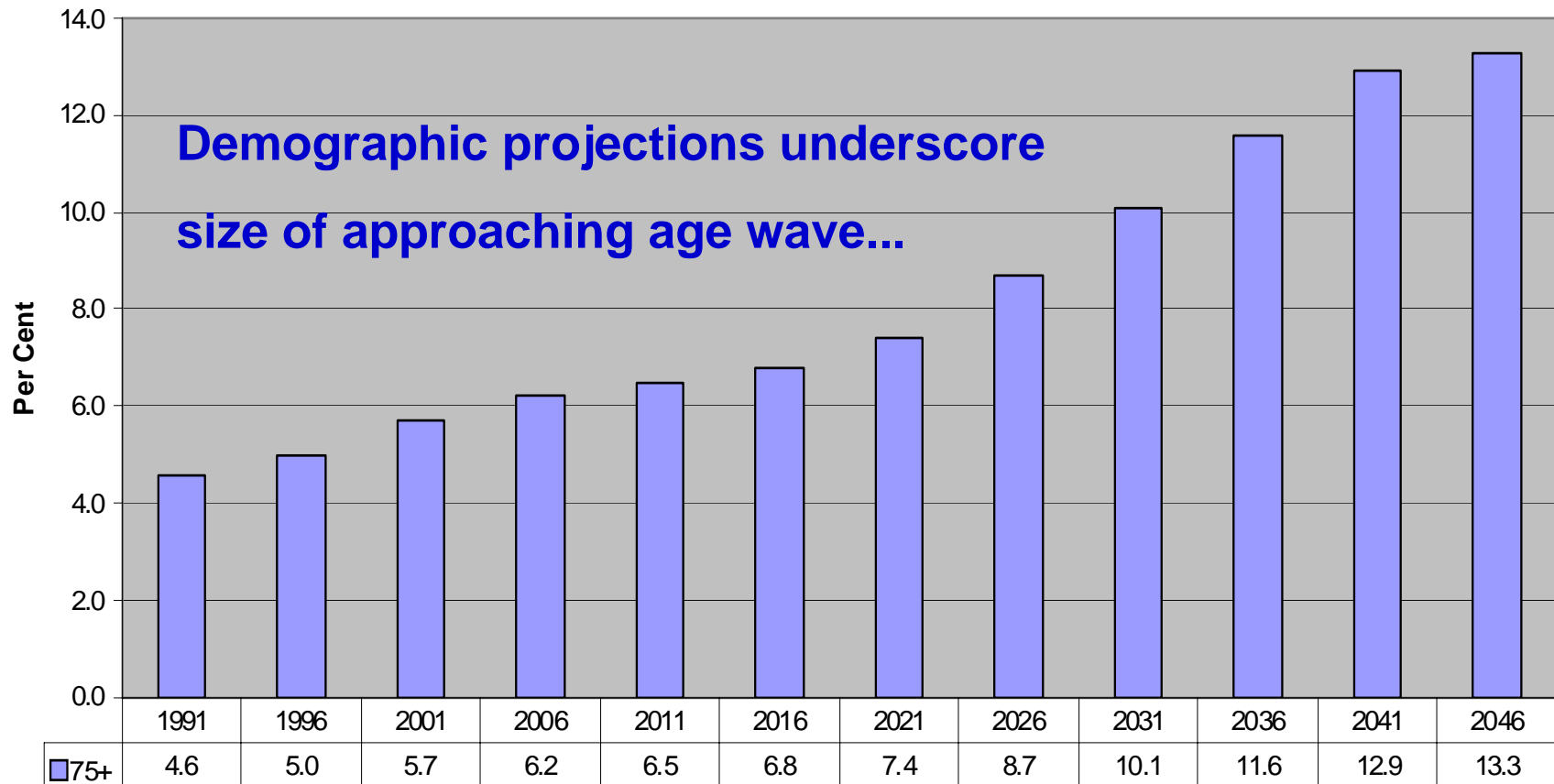
## Prevention of Injury and Substance Misuse Workshop



Road User Safety Division  
Ministry of Transportation  
November 20, 2008

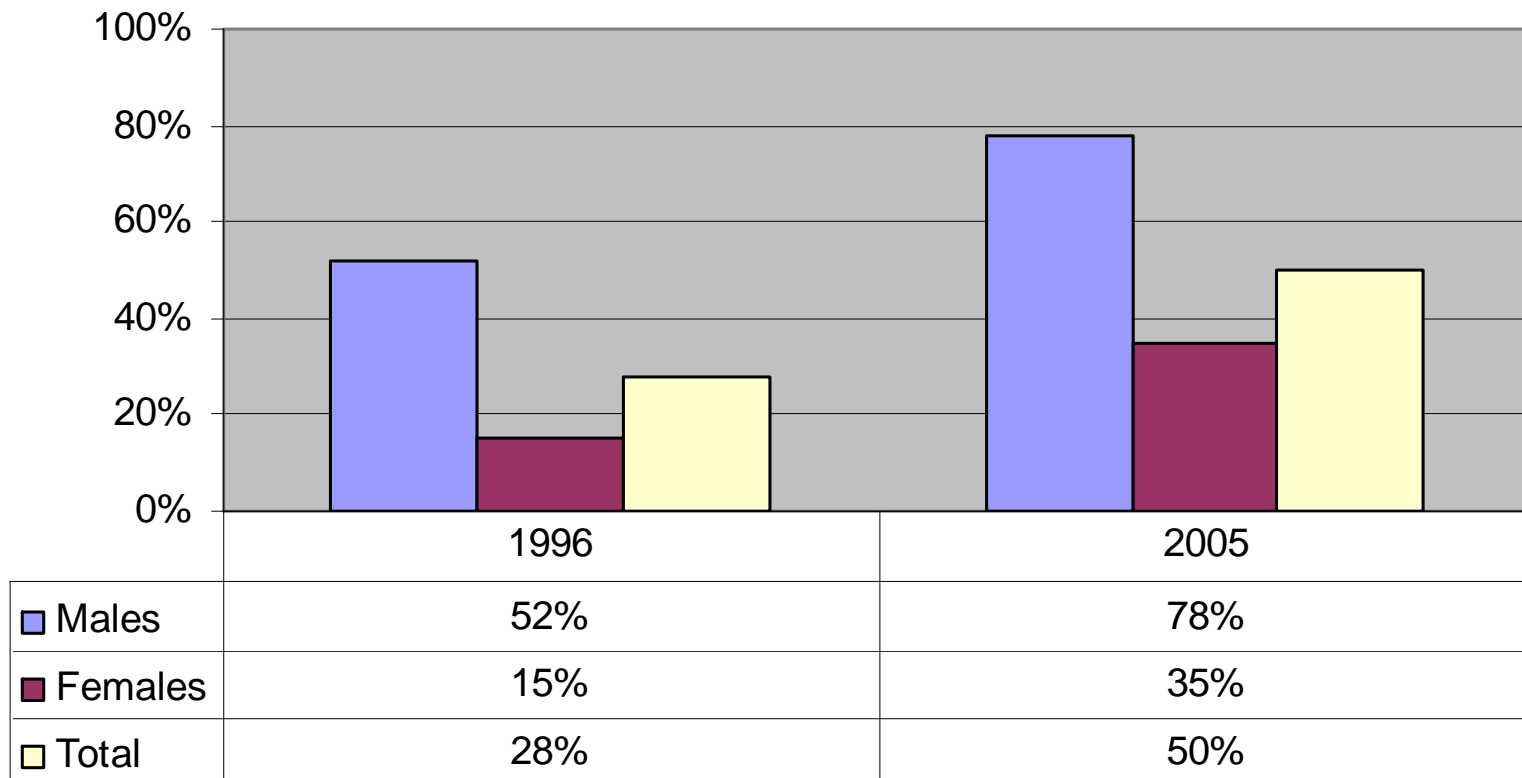
# Percentage of Ontario Population Aged 75+

Source: Research Institute for Quantitative Studies in Economics and Population,  
McMaster University

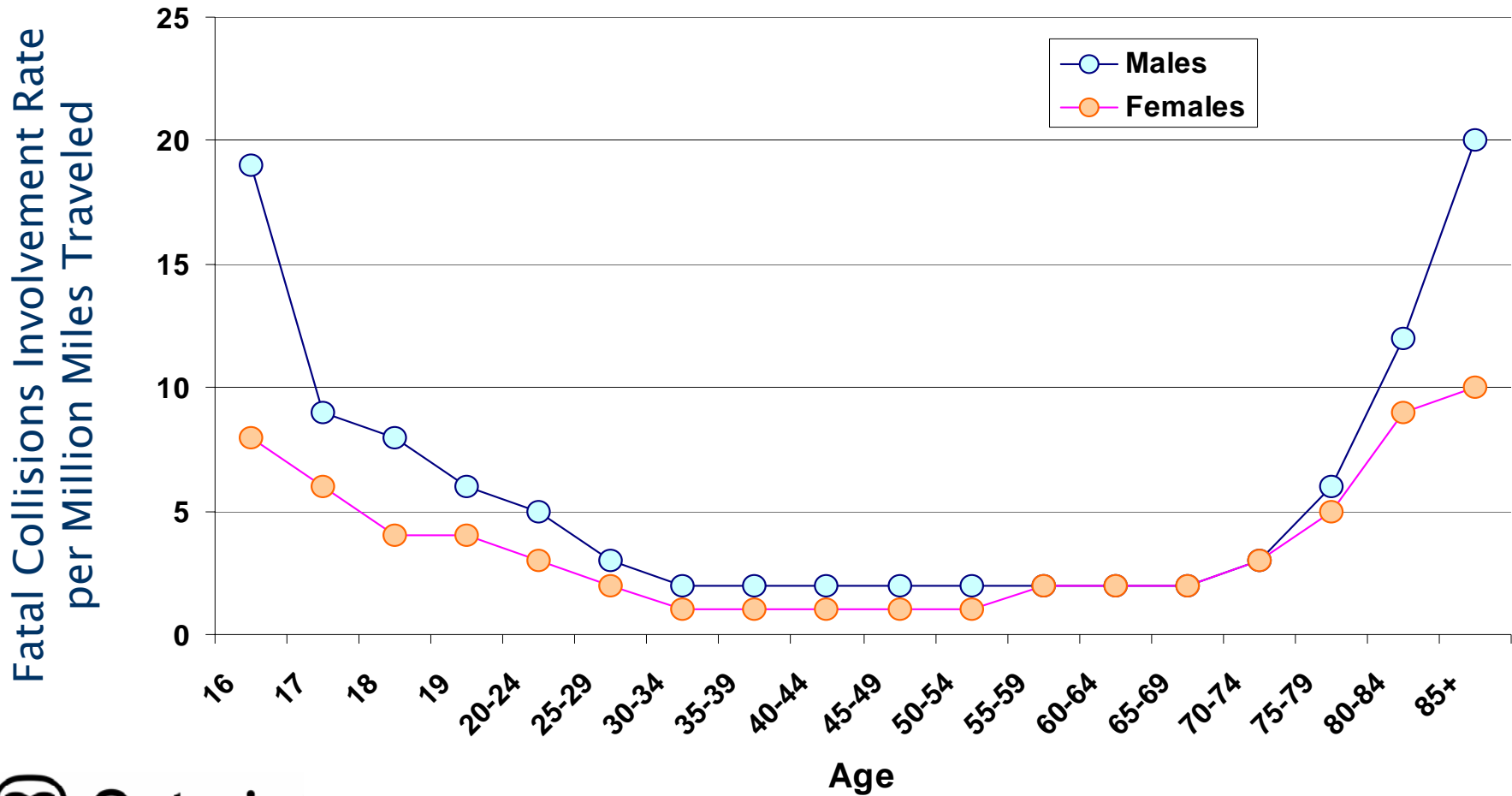


# Percentage of 80+ Ontarians Licensed

1996 vs. 2005



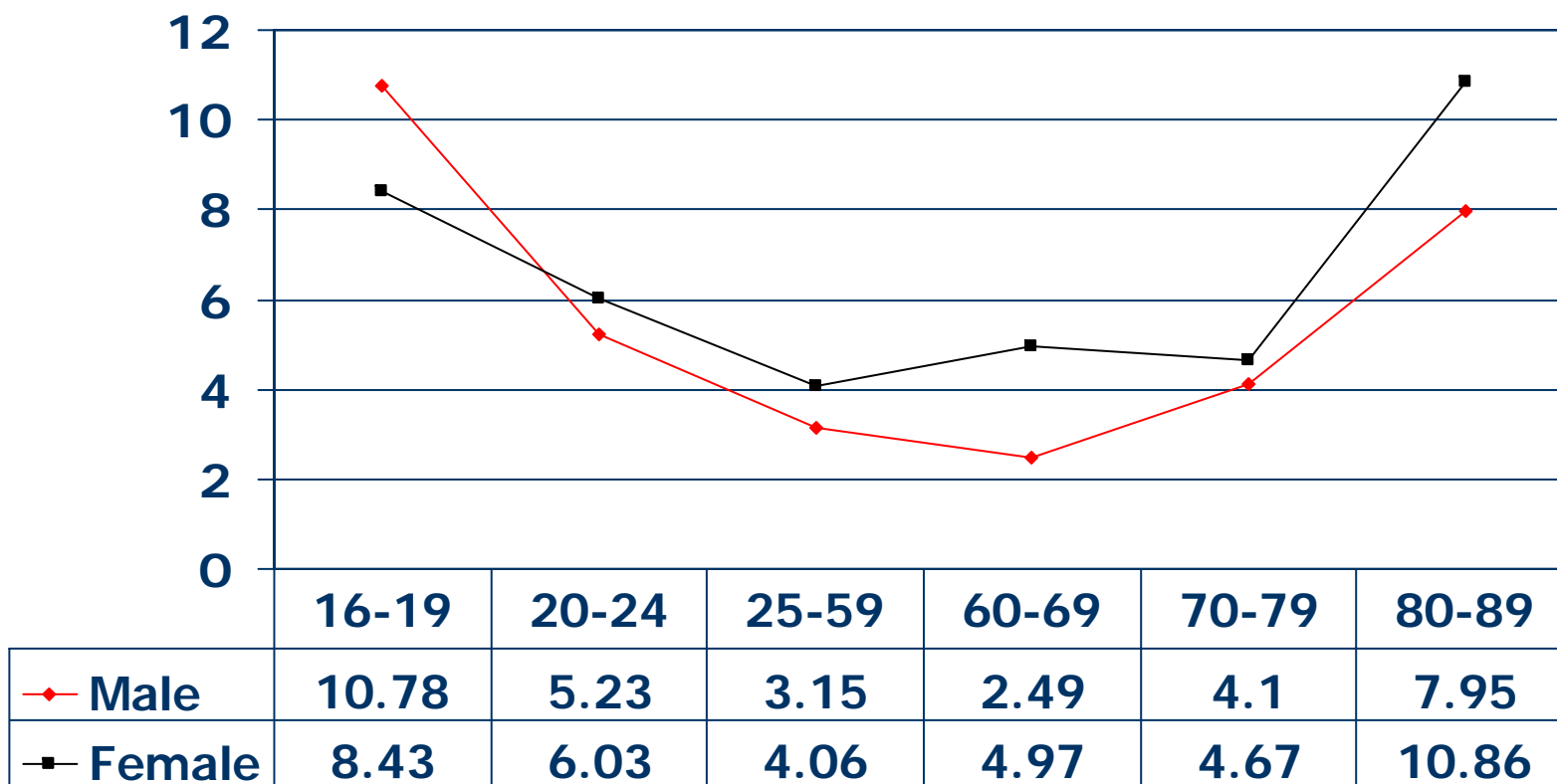
# Age-Related Collision Risk: US Experience



Source: A.F. Williams / Journal of Safety Research 34 (2003) 5-15

# Ontario Experience

**Collision Rate Per Million Kilometres Driven**



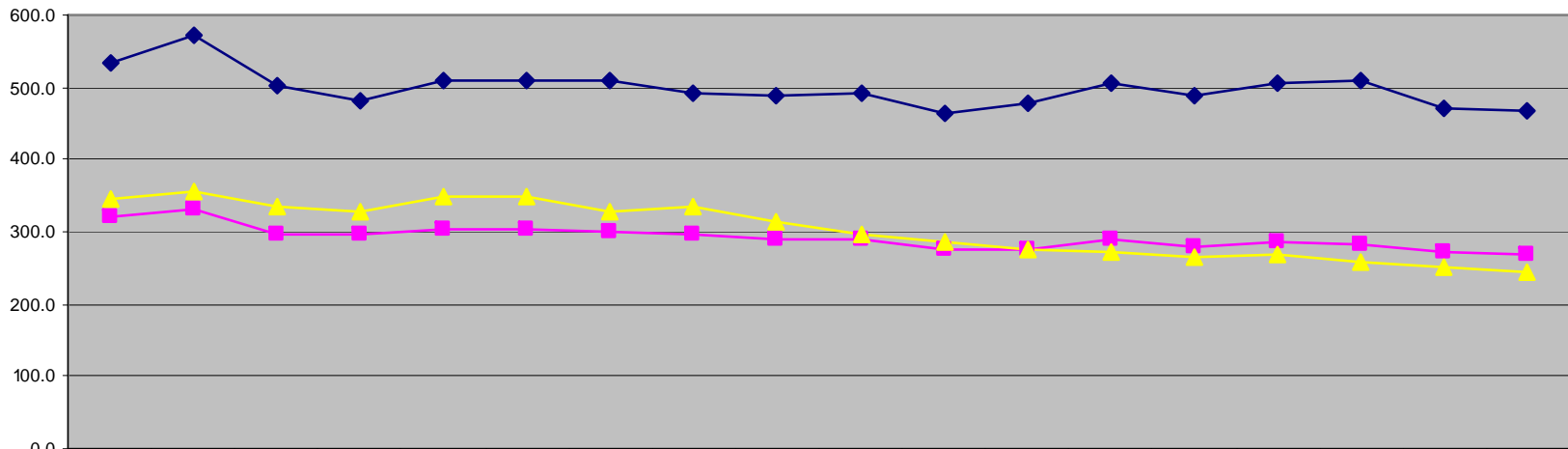
Ministry of Transportation of Ontario 1994



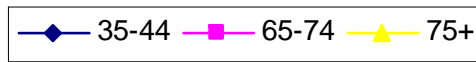
# Drivers Involved in Collisions

## Selected Age Groups

Drivers In Collisions Per 10,000 Licensed Drivers



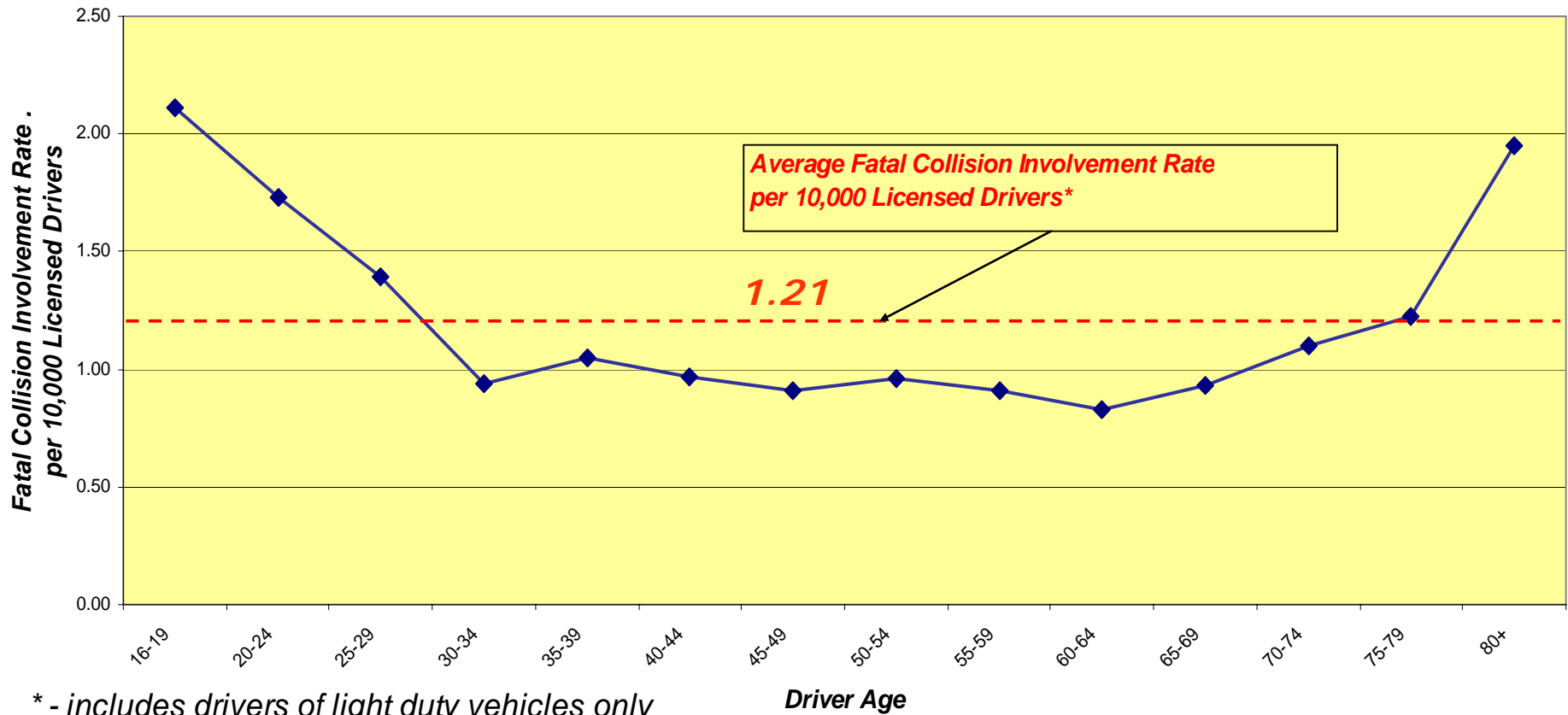
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
◆ 35-44	534.6	570.8	501.4	481.8	509.1	509.9	509.4	492.6	488.0	491.3	465.2	479.1	504.9	488.0	504.1	509.0	472.3	469.1
■ 65-74	321.6	332.7	297.5	298.2	303.8	304.7	300.6	295.6	290.2	291.0	276.6	275.2	288.9	277.9	285.6	282.6	271.6	267.3
▲ 75+	346.2	357.2	334.9	327.1	347.7	348.2	328.9	334.4	315.6	296.2	285.9	274.5	272.9	265.3	268.4	259.5	251.8	244.9



# Fatal Collision Involvement

Drivers aged under 30 and drivers aged 80 and over have higher than average rates.

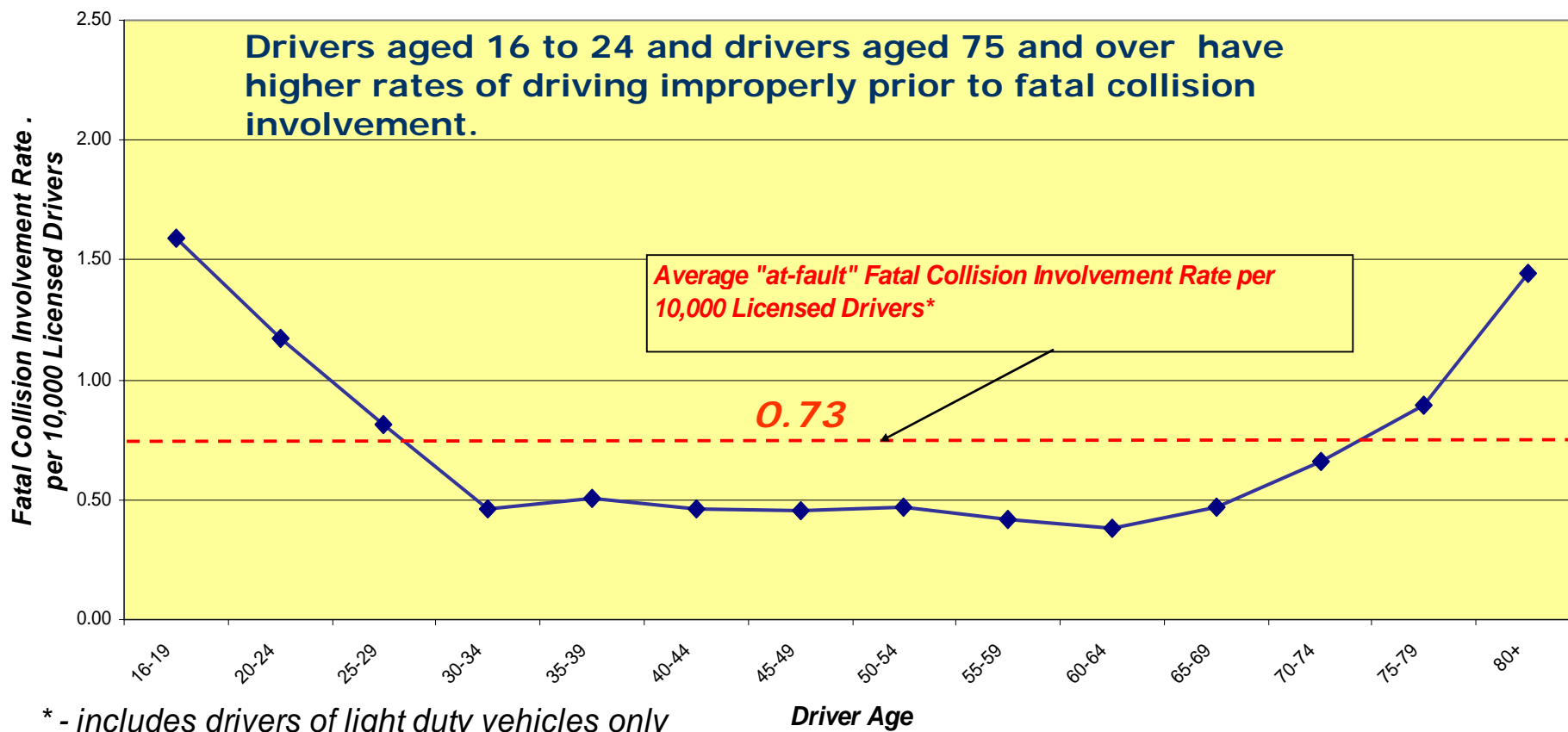
Five Year Average: 2001-2005



# Fatal Collision Involvement Rate

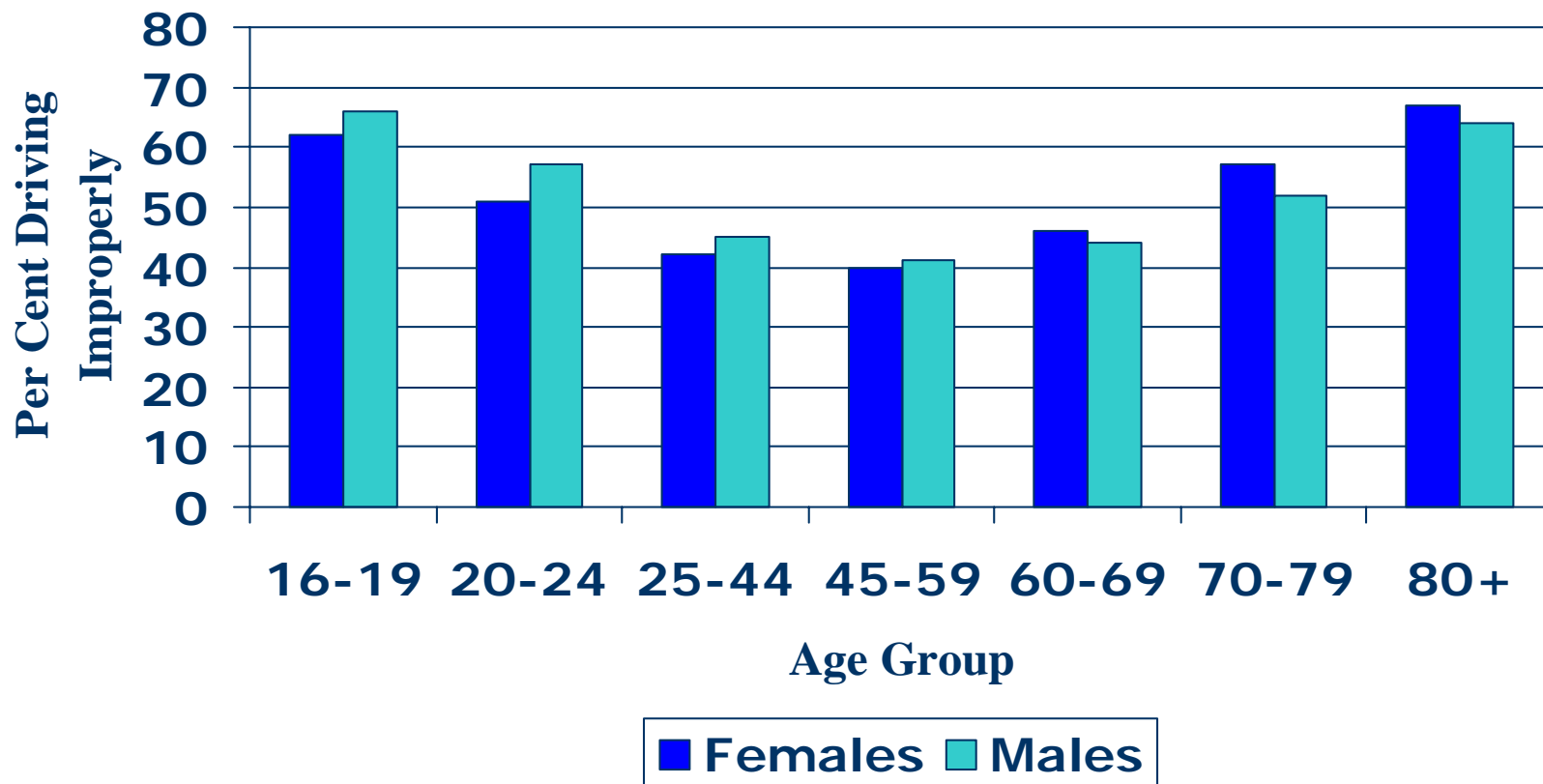
Collisions where driver action coded as "improper."

Five Year Average: 2001-2005



# Pre-Crash Driver Actions

Per Cent Driving Improperly

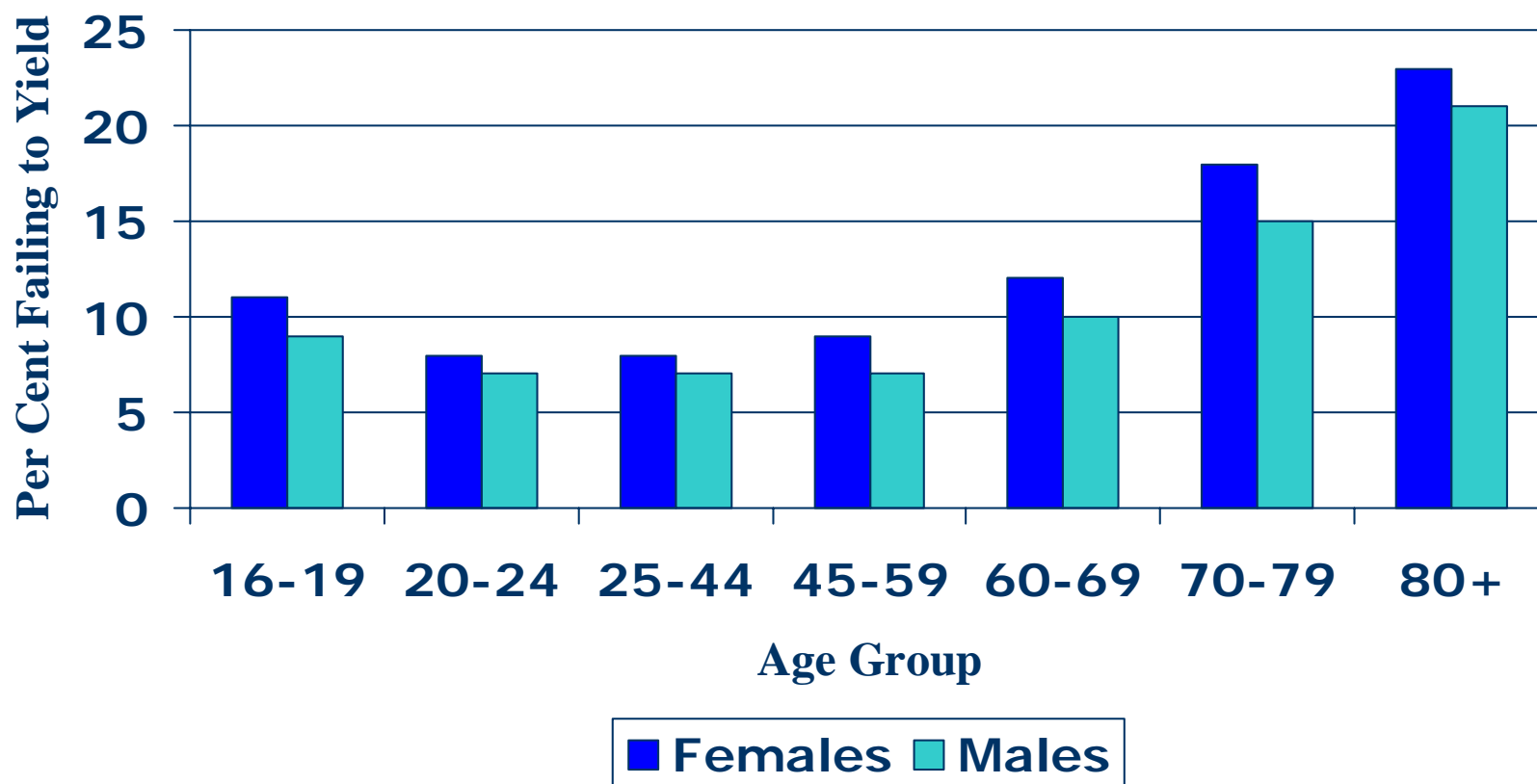


Ontario Accident Data System 2001-2005 inclusive



# Improper Driver Actions

## Percentage Failing To Yield

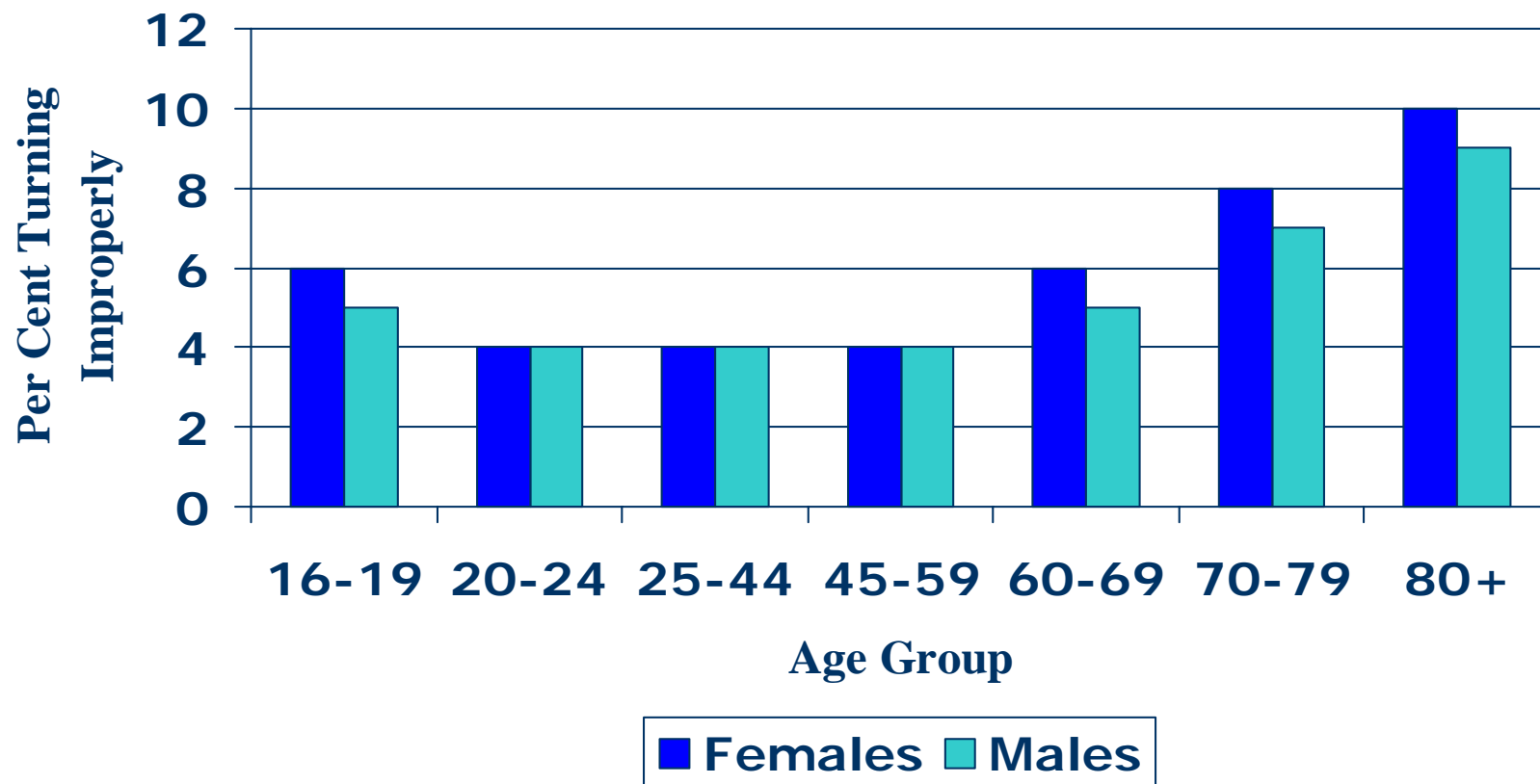


Ontario Accident Data System 2001-2005 inclusive



# Improper Driver Actions

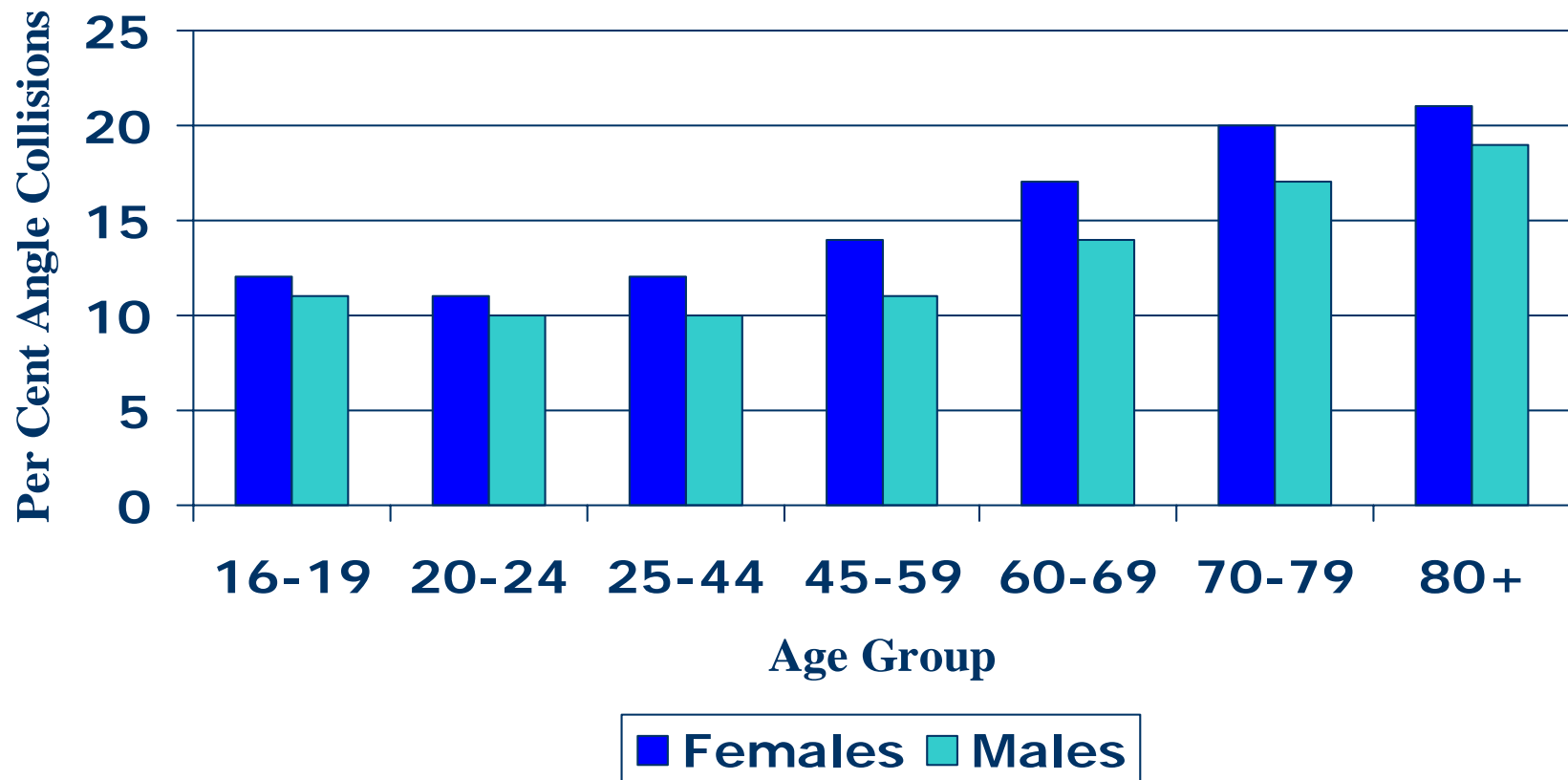
## Percentage Turning Improperly



# Initial Impact Types

## Per Cent Angle Collisions

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Ontario Accident Data System 2001-2005 inclusive

# Recent Studies

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## Risk of Fatal Injury – The Frailty Factor

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- Zhang et al. (2000) studied factors affecting injury severity of collision-involved Ontario older drivers
- Effects of age on injury outcomes for collision-involved older drivers are apparent; the risk of collision-involved older driver incurring a fatal injury as compared to a minimal injury is:
  - 1.42 times higher for drivers aged 75-79 than their counterparts aged 65-69
  - 2.26 times higher for drivers aged 80 and over than their counterparts aged 65-69

Zhang J, Lindsay J, Clarke J, Robbins G and Mao Y, Factors affecting the severity of motor vehicle traffic crashes involving elderly drivers in Ontario, *Accident Analysis and Prevention*, 2000, Jan.; 32 (1): 117-25

# Statistics Canada Survey: Seniors' Access to Transportation

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- The vast majority of seniors aged 65 and over have access to some form of transportation
- Seniors with more immediate access to transportation are much more likely to maintain an active lifestyle
- Among those aged 75 to 84, 83% of men had a licence and a car, as opposed to only 45% for female seniors
- Among those aged **85 and over**, **66% of men** were able to drive a car, and **33% of women** for the same age demographic

Turcotte, Martin. 2005. "Seniors' Access to Transportation," *Canadian Social Trends*. 43-50.

# Crash Risk of Older Female Drivers

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- 2005 Australian study predicted a three-fold increase to crash rates for older female drivers
- Contributing factors:
  - Older female drivers who become principal drivers following illness/death of partner may lack up-to-date driving experience and associated confidence to drive safely
  - Growing female segment of driving population
- Education and practice is key!

Oxley, J. et al. Crash Risk of Older Female Drivers (Report 245). Melbourne, Australia: Monash University Accident Research Centre, 2005.

# Drug Usage and Driving Functions among Older Drivers, 2006

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- Among older persons in the US, more than 90% age 65 or older use at least 1 medication/week
  - 40% use 5 or more medications/week
  - 12% use 10 or more medications/week
- The consumption of 3 or more drugs per day increases the risk of functional decline in elderly people by 60 percent
- Decreased functional ability caused by medication is linked with increased crash risk

Lococo, Kathy H. & Staplin, Loren. 2006. Final Report of Polypharmacy and Older Drivers: Identifying Strategies to Study Drug Usage and Driving Functioning Among Older Drivers. (Report 810681) Washington, DC: National Highway Traffic Safety Administration, US Department of Transportation.

# California Pilot Three-Tier Driver Assessment

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Tier 3:

Road Test

Outcome?

Tier 2:

- Written Knowledge Test
- Computer-based Perceptual Response Time Test

Tier 1:

- Vision Test of Acuity and Contrast Sensitivity
- Simple Cognitive Test, recalling Social Security Number
- Obvious Physical Limitations observed by Staff

# California Pilot Observations

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- Poor performance in the first tiers predicted a worse performance in the road test
  - Not an indicator of crash risk!
- ‘Extremely Limited’ drivers half as likely to be involved in a crash as the ‘Somewhat Limited’
  - Fewer crashes for ‘Extremely Limited’ despite higher road test failure rate!
- ‘Extremely Limited’ more aware of limitations and appropriately compensate for them
- Important to target ‘Somewhat Limited’ drivers through education

# Ontario Programs Affecting Seniors

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- Physicians' Mandatory Reporting Program
- Demerit Point Program
- 80 and Over Licence Renewal Program \*
- 70 and Over Collision Program \*
- 65 and Over Commercial Drivers Program \*

\* Age-Based Programs

# Physicians' Mandatory Reporting Program

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- Duty to report any patient aged 16 and over with a medical condition that may affect safe driving
  - The Highway Traffic Act requires reporting by both physicians and optometrists
  - Must report any “condition that may make it dangerous for the person to operate a motor vehicle”
- Reports assessed for degree of risk; could result in:
  - Immediate licence suspension
  - Referral to Medical Advisory Committee
  - Further evaluation (eg. Individualized assessment of driving ability)
- New police reporting form implemented in July 2006
  - New form allows police to report potentially unfit drivers to MTO

# Individualized Driver Assessments

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- Drivers with medical conditions may be referred to, or voluntarily attend, one of 39 approved driver assessment centres in Ontario to determine future licence status
- Evaluations performed by occupational therapist
  - Medical assessment (brief medical history)
  - Clinical evaluation (physical, vision & cognitive assessments)
  - On-road evaluation
- Evaluation costs prohibitive ranging from \$500 to \$1,000
- Licensing decision (based on full evaluation):
  - Suspension
  - Maintain licence
  - Conditional licence – currently available for drivers requiring adaptive devices only
  - Retraining

# 80 and Over Licence Renewal Program

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- Introduced in October, 1996, the program requires licence renewal every two years by completing:
  - Vision test
  - Knowledge test
  - Driver record review
  - Group Education Session (GES)
  - Road test, if deemed necessary
- Previously, senior driver required to complete an annual vision, knowledge and road test to renew licence
- About 85,000 senior drivers renew their licence each year.

# Group Education Sessions (GES)

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- Sessions are interactive seminars on senior driver topics:
  - Driving situations that are high-risk for seniors
  - Physical changes related to aging and how changes affect driving
  - Ways to reduce collision risk
- Sessions delivered across province at no charge
- 90 minutes long; available in English and French
  - Sessions have also been held in Chinese and Italian on a pilot basis in response to demand from community organizations
- Maximum of 15 participants scheduled
- Driver's participating in session observed for signs of cognitive impairment
  - Drivers displaying obvious signs of impairment are sent for a road test
- On average, five per cent of senior drivers are referred for a road test due to driver record review, failure of knowledge test and impairments

# Enhanced GES Curriculum Rolled Out – July 2005

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- Ministry counsellors received training on new senior driver curriculum and adult education techniques
- Facilities improved with better seating, new vision testing equipment and presentation projectors
- Seniors provided with illustrated take-home booklet for future reference
- The improvements were based on research and recommendations by consultants with expertise in gerontology and adult education

# GES Program is Working!

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- Average fatal collision rate per 10,000 drivers age 80 and over in 1997-2005 was 38 per cent lower than in 1988-1995, under previous program
- Rate of fatal collisions involving seniors continues to be higher than that of the general population, due in part to senior physical frailty
  - In 2005, fatal collision involvement rate for drivers aged 80 and over was 1.62 per 10,000 drivers, compared to 1.03 for drivers of all ages

# 70 and Over Collision Program

- Senior drivers age 70 and over are required to complete a vision, knowledge and road test, if convicted of a collision-related offence
- Once notified of conviction, ministry will request further driver testing
  - If driver refuses to be tested, licence is cancelled
  - If driver fails tests, licence is cancelled
  - If driver fails road test only, G1 licence granted to impose driving restrictions to protect other road users

**Notifications Under the 70 and Over Collision Program**

	2000	2001	2002	2003	2004	2005	2006
<b>Driver 70+ population</b>	675,905	695,572	718,185	737,717	754,521	775,129	788,034
<b>Drivers notified</b>	4,932	5,413	7,198	7,440	4,817	3,805	6,166
<b>Percentage</b>	0.73%	0.78%	1.00%	1.01%	0.64%	0.49%	0.78%

# 65 and Over Commercial Driver Program

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- Drivers age 65 and over with a commercial vehicle licence class A, B, C, E or F renew licence annually
  - Industry concern that requirements are too onerous
- Annual renewal requirements include:
  - Vision test
  - Knowledge test
  - Road test
  - Satisfactory medical report
- Failure to pass requirements results in licence downgrade to Class G (passenger vehicle) or Class D

# On the Horizon...

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- Conditional (Ability-Based) Licensing
- New Vehicle Technology

# Aging Driver Mobility Forum

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- MTO, working in partnership with the Insurance Bureau of Canada, Ontario Seniors' Secretariat and the Ontario Safety League, hosted an Aging Driver Mobility Forum on May 8 and 9, 2008 in Toronto.
- This event addressed issues related to senior driving licensing, medical reporting and the mobility needs of seniors. It also served as a province-wide consultation on the new CCMTA Aging Driver Strategy approved by the CCMTA Board of Directors in December, 2007.
  - Key stakeholders invited include:
    - Ontario Medical Association,
    - Academic community,
    - Ontario Association of Chiefs of Police,
    - Canadian Association for the Fifty Plus.

# Conditional (Ability Based) Licensing

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- Conditional licence would allow drivers with functional impairments, who are still able to drive safely but under limited circumstances to retain their driver's licence
- Most common restrictions are:
  - Time of day
  - Distance from home
  - Maximum speed and/or road type
  - Licence class
- Conditional licensing takes into consideration individual abilities of drivers and provides alternative to outright ban
- Ministry at initial stage of exploring methods used by other jurisdictions
- All jurisdictions report some form of conditional licensing
- However, there is a lack of evaluation studies showing a demonstrable safety benefit associated with this practice

# New Vehicle Technology

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- The National Highway Traffic Safety Association (NHTSA) is conducting research into new and emerging technologies to make vehicles safer for the older driver
  - Night vision enhancement (to increase visibility with higher contrast display)
  - Advanced headlighting (to improve illumination with less glare)
  - Adaptive cruise control (to maintain set distance with car ahead)
  - Lane departure warning systems (to improve lane discipline)
  - Lane change collision avoidance systems (blind spot vehicle detection)
  - Navigation systems (to help navigate unfamiliar roads)
  - Intersection warning systems (to advise drivers to stop)
  - Improved crash injury protection for the older driver

# Thank you!

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