Ageing road users

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Pedestrians

18 Who is a pedestrian

A ***pedestrian*** includes—

(a) a person driving a motorised wheelchair that cannot travel at over 10 kilometres per hour (on level ground); and

(b) a person in a non-motorised wheelchair; and

(c) a person pushing a motorised or non-motorised wheelchair; and

(d) a person in or on a wheeled recreational device or wheeled toy.

Why should we be concerned about pedestrians?

- Pedestrians are the largest group of road users
- Very mobile
- All ages
- Very vulnerable - serious injuries, fatalities
- 15 -50% of fatalities (depending on nation)
- About 15% here in Victoria (more in inner city)
- Over 1,000,000 dead worldwide per annum

Three groups of pedestrians at greatest risk

- **Older** - 19% of road fatalities aged over 65 years of age are pedestrians
- **Young -** 20% of fatalities are aged 4-12 years
- **Intoxicated -** 43% of Victorian adult male pedestrian fatalities ≥ 0.15% BAC

Pedestrians 65+

- Over-involved in pedestrian crashes
- More vulnerable than vehicle occupants
- More likely to be injured / killed
- Deficits in physical, sensory, perceptual and cognitive abilities
- Difficulty: estimating distance and speed; processing and selecting information

Source: Oxley et al. 1995

Pedestrians 65+

Compared to younger adults:

- Twice as long to assess traffic and cross
- More time looking at ground vs traffic
- Confused in complex situations / integrate multiple sources of sensory information
- Slow to react to danger

Source: Oxley et al. 1995

Pedestrians 65+

Compared to younger adults:

- Don’t allow for reduced abilities
- Fail to check and recheck traffic while crossing
- Less safe crossing behaviour in complex situations

Source: Oxley et al. 1995

Older pedestrians cognitive impairment

Pedestrian performance and crash risk:

- Normal age related cognitive decline - moderate association
- Medical conditions that lead to cognitive impairment – substantial evidence
- Parkinson's disease; stroke; MS

Source: Oxley et al, 2005

Pedestrians on motorised mobility scooters (MMDs)

Who may use these devices ?

- Those not capable of walking or who have difficulty in walking
- Not an alternative form of transport
- Not for those who don’t drive or don’t have access to public transport
- Cannot register
- No licence required
- Mobility aid

Pedestrians on motorised mobility scooters (MMDs)

Major issues:

- Vehicles imported that don’t comply with road rules
- No mandatory assessment by occupational therapists
- Cognitively / physically impaired using them
- Poor knowledge / non-compliance with road rules
- Seen as alternative to driving
- Lack of infrastructure

Pedestrians on motorised mobility scooters (MMDs)

Older drivers

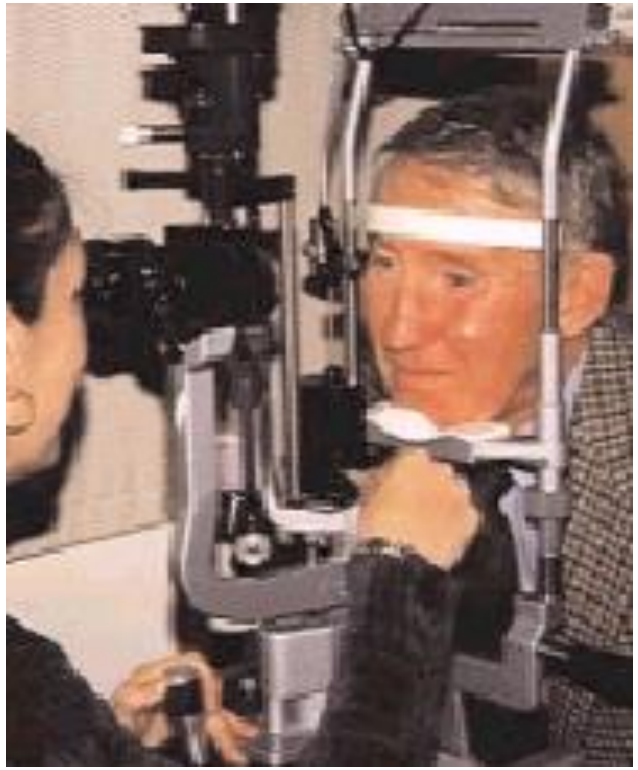
- 75 years and over
- Cautious and responsible
- Increased risk of serious injury and death due to frailty associated with the ageing process
- Medical conditions and medicine
- All chronic /serious medical conditions and disabilities that may affect safe driving to be reported to VicRoads

Older drivers

Functional changes that can impact on driving:

Vision

- Reduced: visual acuity; contrast sensitivity; field of view; visual scanning
- Increased sensitivity to glare – 50 years 10 secs to recover; 80 years 35 secs; 100 years 90 secs
- Cataract; glaucoma; macular degeneration; diabetic retinopathy
- Difficulty seeing: kerbs, edge lines, traffic islands, vehicles, peds, traffic signals, signs
- Difficulty: scanning, recovering from glare



Older drivers

Functional changes that can impact on driving:

Physical declines

- Physical weakening; loss of agility and endurance; cardio-vascular degeneration; musculo-skeletal wasting
- Controlling a vehicle: more time to initiate/complete a movement; slower reaction time; fatigue; poor balance
- Lower limb impairment: accelerator to brake
- Upper limb impairment: maintaining driving position; steering and controlling; head checks

Source: Austroads 2004

Older drivers

Functional changes that can impact on driving:

Perceptual and cognitive declines

- Motion perception: judging distance and speed; scan, detect, track, quickly perceive, respond, react
- Selective attention: most important info vs irrelevant
- Divided attention: divide attention between sources of information
- Information processing and decision time: longer to process and respond

Source: Austroads 2004

Older drivers

Functional changes that can impact on driving:

Perceptual and cognitive declines

- Working memory: difficult to retain info in memory while receiving / responding to incoming info. Hold info re distance of vehicle, scan for hazards, take in info from road signs, recall info re oncoming traffic
- Dementia: Alzheimer's – loss of sight, short term memory, switching attention, recognition and planning
- Medicines: prescribed drugs prevalent; sedation; stability and balance; polypharmacy

Source: Austroads 2004

Old versus older

Older road users are not a homogenous group

- Never use the term “elderly”
- At 65 years much fitter than at 85 years
- Young-old 65 to 74
- Old 75-84
- Old-old 85+
- Engineers, designers and planners to be aware of the needs of older road users