Safe mobility for older road users

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– Increasing mobility of an ageing population

– Keeping older people safe on the road

– Provide better alternatives to the car
  • Issues using public buses
  • Issues with being a pedestrian

– Reduce literal mobility.

– Conclusion
The image shows a demographic pyramid comparing the age distribution of males and females between 2012 and 2037. The left side represents males, with a steady increase in the proportion of the population in older age groups from 1980 to 2050. The right side represents females, showing a similar trend but with a different distribution.

A table below the pyramid provides the percentage of the population in each age group from 1980 to 2050. The table includes the following age categories:

- <15
- 15-29
- 30-59
- 60-74
- 75+

The data shows a steady increase in the proportion of the population in older age groups over time for both males and females.
The desire to get out and about does not diminish in older age, nor does the variety of activities people like to do outdoors.
Not just commute but leisure trips fall too – esp seeing family and friends – transport big barrier. Spend time much closer to home and neighbourhood, Really miss these journeys.
Miles per person per year - private modes of transport over 70s

- **Car / van driver**
- **Car / van passenger**
- **Taxi / minicab**
• More older people, who are more mobile and more likely to drive than ever before

• Mobility is important for health but particularly giving up driving is related to:
  • a decrease in wellbeing
  • an increase in depression and related health problems, including feelings of stress, isolation and increased mortality

• A major life event
Solutions:

- Keep older people on the road later on in life
- Provide better alternatives to the car
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A driver of a Ford car has smashed into the front of a house in Silverweed Road, Walderslade, and gone straight into a resident's lounge.

An elderly driver smashed into the front of a house and went straight into a resident's lounge.

The Ford car ploughed through the wall of the home in Silverweed Road, Weedswood, Chat morning.

The male driver, aged around 70, was taken to Medway Maritime Hospital by road.

Pensioner who hasn't had a crash in 76 years writes off two Porsches in seconds with his old Fiesta

By LUKE SALKELD
Last updated at 08:17 15 April 2008

If his 76-year blemish-free driving record had to come to an end, then it could hardly have been more spectacular fashion.

With not even a minor prang to his name in half a million miles of motoring, 93-year-old Jack Higgs and his £600 Ford Fiesta managed to demolish two Porsches causing £60,000 of damage.

The retired church minister lost control as he reversed outside the Porsche showroom next to his home, hitting a red Carrera II, which acted as a ramp and flipped the car over on to a silver 911.

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Public call for testing and training!

- 50% think older drivers should be tested at least every 2 years

- 66.3% think older drivers should pass road safety training frequently

“Youngsters only need to see the white slightly balding head from behind and they come racing up behind. I bet if I wore a wig it’d be different” (driver, male, aged 80) (Musselwhite & Haddad, 2010)
• Changes in cognition
  – Selective and sustained attention, perceptual speed, working memory, task switching, cognitive overload (see Musselwhite, 2017 for review)

• Changes in eyesight
  – Between the ages of 15 and 65 years, susceptibility to glare increases, and recovery from glare increases from two to nine seconds (DfT, 2001).
  – Research suggests that by the age of 75 years old drivers may require 32 times the brightness they did at the age of 25 in order to be able to see effectively.

• Changes in mobility
  – Less mobility in neck, leg, knees, hips.
  – Fatigue

• Not having full awareness to make decision

• Looked, didn’t see.

• Gap acceptance

• Being distracted

• Reaction times:
  – Reaction time shortens from infancy to around 20 years of age, then increases slowly to around 70 years of age and beyond (Der and Deary, 2006; Jevas and Yan, 2001; Welford, 1977).
  – A person over the age of 65 can have reaction times up to 22 times slower than that of someone of 30 years of age (see DfT, 2001; Hultsch, et al., 2002)
Yet, older drivers on the whole are safe drivers

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**Compensatory behaviour – reducing use in:**
- Rush hour
- Bad weather
- Making difficult turns
- Motorway driving
- Driving slower, taking time

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**Looked, didn’t see.**

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Specific issue with turning right across traffic

Specific issue with low mileage drivers


Improving older people’s road safety
• Self-assessment and declaration

In the UK
Once over 70 you’ll have to reapply for your licence every three years. There’s no test or medical, but you do have to make a medical declaration that may lead to DVLA making further investigations.

• Should we be tougher?
Comparisons across EU

- UK and N: Relaxed (self-declaration or no declaration for older drivers)
- Must visit GP (usually 70 yrs, Italy 50 yrs)
- Denmark did have GP visit until March 2017 - now don’t
- Psychology assessment in Portugal (over 70) and Poland (all ages)
• **Testing**

No evidence it works

• Across Europe, Netherlands and UK have lowest fatality rates and the most relaxed procedure (Mitchell 2008)

• Across USA no differences found in states with stringent testing (except states with increased eyesight testing = improved safety). (Grabowki et al 2004, McGwin et al, 2008)

• Denmark introduced cognitive screening – no effect on collision rates (in fact increased for older pedestrians) (Siren and Meng, 2012) – Denmark has stopped screening (March 2017)

• Sydney (practical assessment at 80 (now 85)) more collisions than Melbourne (no age related assessment) (Langford et al., 2004)

• But are we testing the right thing? There are some positive effects found for single measures, such as vision testing, in-person renewal and restricted driving (all in the North American context, and mostly for the oldest age groups).
• Change the infrastructure

Extra attention to:
• Merges onto main roads
  Protected lanes, longer slips
• Edge and lane markings
• Intersections
  Roundabouts not T-junctions
  Stop and give way signs
  Traffic signals
• Signage
  Larger lettering, better reflection

• Evidence? Often in isolation?
  • Effect on other drivers? Effect on pedestrians?
• Change the vehicle

Towards driverless or automated vehicles:
• Informative systems
  Much preferred
  Head-up displays
  Prioritise and manage displays

• Advisory systems
  Warning messages liked if understood
  Somewhat liked

• Take over systems
  Potentially most useful but least liked
  Improved when used!

• Reality?
  • Totally autonomous? Older people take longer to re-take control of vehicle, underload-overload issues greater etc.
• **Enhance compensatory behaviour**

**Dialogue and information**
- Family and friends
- Doctors, GP, health professionals
- DVLA
- Public information

**Nudge** (Can Older Drivers Be Nudged? Berry, 2011)

**“Graduated” licensing or insurance**
- Incentives for avoiding difficult situations
- British Columbia, Canada (1999–2006). Risk of causing a crash was 87% lower for restricted drivers (restricted on speed, geography and time of day – Nasvadi and Wister 2009)

• Feedback? Improving insight into our driving?
• Increased need to drive
• Education & training

Education and training improve

**driver knowledge** (see e.g., Eby et al., 2003; Marottoli, 2007; Owsley et al. 2004),

**self-reported driving behaviours** (McCoy et al., 1993; Owsley et al., 2004)

**on-road driving assessments** (Bédard et al., 2004; Marottoli, 2007),

• Some positive findings, but need more evidence to suggest they reduce crashes esp over time (Berube et al., 1995; Korner-Bitensky, Kua, von Zweck, & van Benthem, 2009; Ker et al., 2005; Kua et al., 2007; Nasvadi & Vavrik, 2007; Owsley et al., 2004).
Solutions:

• Keep older people on the road later on in life
• Provide better alternatives to the car
• Reduce literal mobility.
Age Friendly Transport System

Supportive, safe and inclusive age friendly transport strategy, policy and plans

Accessible and attractive public and community transport

Legible and attractive local neighbourhoods for walking, cycling

Healthy, independent older person

Needs, desires, motivations

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age friendly transport strategy, 
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local neighbourhoods for walking, cycling

Healthy, independent older person
Needs, desires, motivations
Our “ageist” transport environment
Slow, unable, unwell, incapable
Some suggestions for the 'Sign of the Times' campaign
(Alan Dye, George Hardy, Andrew Altman)

'Sign of the Times' campaign (John Bateson, Oliviero Toscani, Purpose)

https://www.springchicken.co.uk/pages/signofthetimes
Our “ageist” transport environment

*Older people are invisible in policy*

**Policy: Importance of older people’s travel isn't recognised**

- Travel time seen negatively
- Geared around economic growth, 9-5, (core (rush) hour provision).
- Provision for car dominates, public transport suffers (esp. outside of core time provision)
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Healthy, independent older person Needs, desires, motivations
Importance of public bus

Using the bus, you are more likely to walk and is a protective factor in obesity and correlated with health and wellbeing (Webb et al., 2011)

“I love the bus. It’s a place I regularly see someone I know to chat to and I often use it to go to places for a cuppa tea and a cake, down to the seaside, nice service that” (female, bus user, aged 79) Musselwhite, 2018

“I use the bus to go to my club, have lunch and then come home. I can half a quick half of beer too then. And some more!” (male, bus user, aged 80) Musselwhite, 2018

“I enjoy being on the buses with other people, it’s a social thing... there’s always somebody I know on the buses...whereas driving is a little more enclosed personal thing.” (Female, Powys, aged in 70s) Shergold et al. (2012).
Issues with public buses

1. Bus driver awareness
2. Having to change buses
3. The bus stop not being near the main residential areas
4. Buses being cancelled altogether or reduced in number
5. The unreliability of the service
6. Poor bus stops (signage, information, seating and shelter)
7. Early finish of buses in afternoon
8. Safety and security issues at bus stop or on the bus itself
9. Poor quality buses (do not lower to kerb / grab rails missing)
10. Need free bus all day long not just after peak time.

“Some drivers can’t wait for you to get in the bus and they’re going...for me it’s intimidating. You’re frightened of falling” (Wigan, female, focus group, Musselwhite, forthcoming)
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Healthy, independent older person

Needs, desires, motivations
IMPORTANCE OF WALKING SPACES

Health benefits

Walking can have a number of positive health outcomes. Walking reduces the risk of all-cause mortality by up to 20% and cardiovascular disease by up to 30% (meaning that regular walkers are likely to live longer than non-walkers). Walking reduces the risk of high blood pressure, stroke, and high cholesterol. Walking expends energy and therefore can help energy balance and body composition (potentially reducing obesity).

“Regular walking”

20% reduction to the risk of all-cause mortality

30% reduction to the risk of cardiovascular disease

“The walking makes me feel better I suppose. I feel less stiff and even though I might feel tired afterwards I feel sort of refreshed. I don’t feel that driving, I always got stressed about parking and the traffic and it became such a worry” (female, walker, aged 80)

Musselwhite, 2018
Barriers for older pedestrians

1. Poor quality pavements
2. Obstructions on pavements
3. Pedestrian crossings
4. Speeding traffic
5. Lack of benches and toilets
6. Poor street lighting
7. Pollution
<table>
<thead>
<tr>
<th>Over 60s in GB</th>
<th>GB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>23.38%</td>
</tr>
<tr>
<td>Pedestrian miles</td>
<td>20.35%</td>
</tr>
<tr>
<td>Killed as a pedestrian</td>
<td>41.5%</td>
</tr>
<tr>
<td>Serious injury as a pedestrian</td>
<td>25.75%</td>
</tr>
<tr>
<td>Slight injury as a pedestrian</td>
<td>14.89%</td>
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For crossing the road participants preferred controlled crossings such as a pelican crossing.

Pedestrians take their cues from the ‘red’ or ‘green man’ on the opposite side of the street.
For crossing the road participants preferred controlled crossings such as a **pelican crossing**

Pedestrians take their cues from the ‘red’ or ‘green man’ on the opposite side of the street.

**Only 11% walk as fast or faster than DfT recommendations for pedestrian crossing time**

Only 6% of females
Faster if higher socio-economic background, healthy and confident
Agrees with previous research (Asher et al., 2012, Newton and Omerod, 2007).

Fear of not being quick enough to cross the road is known to restrict people leaving the home or limit their accessibility when out and about (IDGO 2013; Lord et al., 2010; Zijlstra, 2007).

Hey Mr Boris!
https://www.youtube.com/watch?v=lpwboQxVJtg
• Outdoor environments to support walking

Functional

Accessible and safe space
- Benches & toilets
- Well lit & maintained
- Proper crossings
- Clear safe space from traffic

Attractive spaces
- Distinctive/Pleasing
- Fountains
- Trees/greenery

Desirable spaces
- Aesthetics
- Prospect/refuge
- Mystery/intrigue
- Playful spaces

Aesthetic
Solutions:

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Encourage non-literal mobility

Literal
Actually moving through space
Swap car for active, public or community transport

Potential
Not moving – but have the means to do so if I wish
Keeping car in driveway

Virtual
Not moving but doing the things via technology or Internet
Internet shopping; window on the world; skype; online

Imaginative
Not moving – but (1) watching others move or scenes change; (2) reminiscing about literal mobility
View from window; Photos; Pictures
Conclusion
• Older people are not especially dangerous drivers

• But they do have unique issues that result in unique challenges (e.g. turning right)

• Medical screening and testing doesn’t make much difference, but infrastructure design, regulation and education and training might hold the key, more research needed

• Alternatives are unsafe and also unattractive, especially a risk of falls and crossing places and times need adjusting

• What is so special about literal mobility and especially the car? Can it ever be substituted or replaced?
Further reading

Berry, C (2011) Older drivers and behavioural change. ILC-UK: London

Elder’s Voice and Loud Minority (2013) - Hey Mr Boris! https://www.youtube.com/watch?v=lpwboQxVJtg


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