



Medical Screening of Older Drivers

Counter-productive and ageist, and obscuring the real needs for assessment and rehabilitation services

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“En vieillissant on devient plus fou et plus sage”: with this phrase la Rochefoucauld summarizes the duality of ageing, which brings growth and loss at all ages. In later life, popular prejudices means that we often over-emphasize the ‘plus fou’ at the expense of the ‘plus sage’. Ageing brings many positive attributes, including better strategic thinking, experience, wisdom and social responsibility, and as we will discuss today, this results in older people having the safest driving record of all age groups.

The ETSC and CIECA are to be commended for bringing together a multi-disciplinary audience to discuss this important topic, at the heart of which lies the promotion of mobility, a personal, societal and economic good, with the highest achievable degree of safety. Many disciplines are central to this discussion, including experts in transportation, road safety, human factors, engineering and traffic medicine. Each has a language and culture of its own, and responds to different stimuli and pressures. Joint working, and teasing out of both common and potentially antagonistic agendas and research will be critical to developing a common vision of a Europe where both personal mobility and safety are furthered to the greatest extent possible. Both ETSC and CIECA have promoted these goals, and I would refer those interested to their literature, as well as the reports of the OECD¹, the ECMT² and US Transportation Research Board³.

Traffic medicine has evolved significantly over the past two decades, with a more overt emphasis on viewing mobility and safety in an integrated manner. My own expertise lies in traffic medicine with older people, and this is a good vantage point for the overall discussion of whether screening programmes for medical fitness to drive have merit or not, as later life is the time when illness and disability occur at the most significant levels, and yet where.

With an ageing population, increasing numbers of whom drive, one of the greatest challenges is ensuring that older people are not unnecessarily constrained by an unfair attribution of risk⁴. However, there is striking evidence that the perception of older

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drivers in the media is very negative ⁵, and it is of interest that a significant number of European countries have introduced population screening for older drivers without a clear evidence base in their support ⁶. This may stem from misconceptions regarding the impact of age-related disease on driving: these misunderstandings also apply to medical journals, who commonly reproduce statements on the apparent increase in crashes per mile driven for older people ⁷. They may also stem from a simplistic view that the accumulated deficits of age-related disease are additive, and not mediated by the wisdom and sense of older people.

There are three important tenets of population screening in public health: these are that:

- the condition being screened for causes harm
- a suitably sensitive and specific instrument exists to screen for the condition
- the screening process can be shown to provide an overall benefit in terms of both health and costs

A convincing case can be made that none of these conditions can be fulfilled for medical screening of all older drivers.

When your risk or my risk is assessed it is by our crash rate per year. Virtually by any yard stick or study, older drivers perform well on this metric ⁸, with low annual crash rates reported from around the world ¹. Some propose that the baby-boomers might be less cautious and judicious, but in fact, alarmist prophesies of major problems arising out of increasing numbers of older drivers ⁹ have been demonstrated to be unlikely, with further improvement in driving safety occurring with successive cohorts of older drivers ¹⁰.

A major challenge to this reality is the often-quoted increased crash risk per kilometre driven. Several studies have now established that this is in fact related to low mileage rather than age ^{11 12}. When distance is controlled, not only do older drivers perform better than younger drivers of similar mileage, but also there is a trend for them to do better! Surveys of drivers over the age of 80 consistency show prudent driving behaviours ¹³. Even the presence of medical conditions is associated with a relatively modest increase in adverse driving events ¹⁴. It is also troubling that some publications dwell on increasing death rates among older drivers – these arise not from their behaviour, but from their fragility (and cars whose safety features are not adapted to the needs of an ageing population) – drivers over 70 have three times the risk of dying compared to younger people in a car crash of similar impact ¹⁵.

The second problem arises with the presence of a screening measure which is both sensitive and specific to detecting medical conditions which are relevant to safety. Medical screening is hampered by the relatively undeveloped status of traffic medicine among doctors in general, many of whom feel unprepared for the task of screening drivers ¹⁶. A wide number of cognitive and other tests have been proposed for screening, but all suffer from two main problems. The first is that they rely on an overly simplistic cognitive model of driving behaviour, and do not follow modern developments in traffic psychology, which lay much more emphasis on behaviour and strategic thinking rather

than cognition¹⁷. The second is based on a principle of public health called Baye's theorem, whereby the reliability of a test depends on how prevalent a condition is in the population being tested: for example, a memory test might work well in a general hospital where 30% of older people have memory problems, but not as efficiently in the community where 7% of older people have memory problems. While a driving test might be seen as the most useful test of function, two factors might militate against this screen: the first is concerns about reliability, and the second is uncertainty about cost benefit. Almost the only consistent relicensing feature associated with reduced crashes in the USA is that of requiring drivers to renew their licences in person¹⁸.

It is in the cost-benefit analysis, however, that medical screening programmes score most poorly. In Scandinavia, Finland has medical screening, and Sweden doesn't, yet the age-related variation in private car accident and private car fatality trends was similar in both countries. Fatalities among unprotected road users (i.e., pedestrians, cyclists, and mopedists) increased more sharply with age among the older Finnish population than among the Swedish population¹⁹. Victoria is the only state in Australia that does not require medical screening of older drivers, yet older drivers in jurisdictions with age-based mandatory assessment programs could not be shown to be safer than drivers in Victoria. Further, there is some indicative evidence that older drivers in Victoria may have a significantly safer record regarding overall involvement in serious casualty crashes²⁰.

These findings may seem counter-intuitive, they are probably based in part on a negative effect on continued driving among older people and their adoption of more risky travel modes, such as pedestrians or cyclists – but this is not the case for Australia. However, as current evidence from Scandinavia, Australia and the USA suggests that mass medical screening or cognitive screening of older drivers has negative public health consequences¹⁹⁻²¹, the main thrust of future measures should focus on opportunistic screening of high risk populations, such as those attending memory clinics, and the refinement of effective pathways for clinicians and the DVLA to manage mobility and safety²².

A useful redirection of intellectual and social energy might arise out of this discussion today. Rather than focussing on population screening, European driver licencing authorities, traffic medicine specialists and human factors specialists need to work on a clear and effective system for improving assessment of those who have medical conditions which affect driving ease and safety for those drivers who present to health services, traffic police or driver licencing agencies with medical problems. This is what is called opportunistic screening. Among the mechanisms required are:

- 1) an up to date, evidence-based guidance system throughout the European Union for advising on the many medical conditions that may affect driving ease and safety. The UK has an excellent system, with a series of expert medical panels regularly reviewing their 'At A Glance' booklet www.dvla.gov.uk/media/pdf/medical/aagv1.pdf, and a panel of expert doctors that concerned doctors can consult by telephone or writing.
- 2) a relatively standardized assessment and rehabilitation process, such as that provided by CARA in Belgium, or the Forum of Mobility Centre in the UK. Helpful progress has

been made by the PORTARE project, funded by the European Union, in progressing this ideal.

3) further development of supported transport for those who can no longer drive, incentivizing and facilitating the transition from driving.

The key challenges to rethinking medical screening are to educate government agencies on the relatively modest contribution to road safety made by medical conditions, and on the need for evidence-based and joint working between the many academic and professional constituencies – a first helpful joint publication on this appeared this year²³.

Indeed, all too often an ageing Europe is presented as a problem or a threat, rather than the major social advance which it is. Given that the greatest threat to road safety arises from younger, mostly male, drivers, we should instead learn what factors are involved to provide such an enviable safety record in a group with so much disability: if we could distil it, and inoculate it into younger drivers, Europe would truly become a safer place for all traffic users!

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