Elderly driver safety in Switzerland – current reality and future perspectives

FERSI-Congress, 27th & 28th of November, Bergisch-Gladbach

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Number of elderly drivers will increase

- Number of elderly will increase by more than 50% until 2035
- Percentage in the total population will increase from 18 to 26%
Number of elderly drivers will increase

- Licence possession rates will increase
Number of elderly drivers will increase

- Kilometers driven are and will be increasing

Kilometers driven per day by those who do drive (Census by FOS)
Percent killed by age of car driver

- Percent fatalities in crashes of car drivers aged 25 to 64
- Percent fatalities in crashes of car drivers under age 25
- Percent fatalities in crashes of car drivers aged 65 and older

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27/28th of November 2014
# Fatalities in older car drivers crashes

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Elderly car drivers cause about 12% of all fatalities.
7 percentage points are the elderly at-fault drivers themselves
5 percentage points are other victims
Current reality in Switzerland

- Mandatory medical examination system beginning at age 70
- Repeated every two years
- Conducted by family practitioner
- Check whether medical minimum criteria are fulfilled
- Criteria only roughly defined (except for vision)
- Physician makes a recommendation (fit to drive, fit to drive with constraints, unfit to drive)
- Form is returned to road office
- Road office decides
Medical screening in Europe

Procedures to renew driving licenses in 27 EU countries:
- unlimited validity
- admin. procedure
- medical check (age based)
- medical check (all age groups)

Fatality rate of car occupants per mio inhabitants (indexed for age 25 to 64)
Fatality rate of pedestrians per mio inhabitants (indexed to age 25 to 64)

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Future perspectives: medical examination

- Medical examination should be focussed better on medical conditions with increased crash risk and substantial prevalence
- Better education of physicians for the use of screening tests like the Mini Mental State Examination (MMSE)
- Focus of the medical examination should be on treatment, rehabilitation and auxiliary measures (like transport equipment modifications)
- More frequent issuing of limited licences (travel time, region) instead of licence withdrawal
Future perspectives: self assessment

- Medical examination serves the identification of medical problems
- What about normal age-related physical and cognitive changes?

- Self-assessment instruments
  - raise awareness of own abilities and possible problems
  - provide feedback and advice
  - support self-regulation (up to voluntary driving cessation)
  - facilitate discussion with family members
Future perspectives: self-assessment

- Open questions:
  - Development and validation of self-assessment instruments (Lang, Parkes & Fernández Medina, 2013)
  - Predictive validity of self-assessment to self-regulation and road safety?
  - Dissemination? Beginning age? Periodicity?
Future perspectives: medication

- Psychoactive medications should get a closer look
- Dischinger et al. (2011) showed an exponential growth in crash risk
Future perspectives: frailty

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Future perspectives: frailty

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Future perspectives: frailty

The graph illustrates the number of slightly injured, severely injured, and fatally injured elderly drivers in Switzerland, according to their age groups over time. The data is from Ewert & Uhr, 2014.
Future perspectives: frailty

Counteract frailty with cars with good crash test ratings and appropriate test dummies
Future perspectives: ADAS

- Advanced Driver Assistance System (ADAS) may be helpful for the elderly, especially in urban areas.
- Brake Assistance, Forward Collision Warning, Parking Assistance, Lane Departure Warning ...
- Acceptance among the elderly is higher than among the younger.
Conclusions

- The number and proportion of elderly drivers will increase
- ~10% of fatally injured and 6% of seriously injured persons were involved in crashes caused by older drivers
- Medical screening has to be carefully designed and conducted to increase road safety
- Self-assessments can complement the medical examination
- Psychoactive medication should be supervised better
- Active and passive safety systems will help the elderly driver

Active driving should be sustained as long as possible