

PRESS RELEASE

Leidschendam, 4th December 2007

In-car electronics and adjustments to intersection design improve the safety of the older driver

Specific in-car electronic assistance and adjustments to intersection design are good for the road safety of drivers aged 75 and above. These measures can keep them mobile longer, which in turn improves the quality of their social lives. This is what Ragnhild Davidse of SWOV Institute for Road Safety Research writes in her PhD thesis which she will defend on the 13th of December at Groningen University.

Older drivers have specific problems

Drivers aged 75 years or older have a higher fatality rate. The main cause is their physical vulnerability; if they are involved in a crash they have a relatively high risk of being killed. In addition, they have a slightly higher risk than younger motorists of being involved in a crash. They are particularly often involved in crashes which happen when they want to turn left at an intersection. Such a manoeuvre, for that matter, is one of the most complex tasks when driving a car; drivers need to process a lot of information and carry out multiple tasks simultaneously. Davidse's study showed that this is especially difficult for older drivers. This is due to the fact that they, among other things:

- need more time to process information and take decisions,
- have more trouble dividing their attention, and
- perform poorer under pressure of time.

Davidse studied two types of measures that can assist the older driver: adjustments to the intersection design and in-car electronic assistance.

Adjustments to intersection design

How difficult it is to cross an intersection depends on its type (3-way, 4-way, or roundabout), the priority regulation, and the manoeuvre which the driver has to carry out. Turning left on a four-way intersection with dual carriageway is the most difficult.

Examples of intersection measures that could be taken to assist older drivers are:

- road markings that are clearly visible (maintenance),
- measures ensuring a good view of the intersection (no obstacles impeding the line of sight),
- timely information about important matters such as priority regulation, and road signs above the carriageway indicating which lanes are meant for traffic turning left.

In-car electronics are helpful

Personal in-car assistance is also useful. When approaching a difficult intersection, the driver assistance system which Davidse studied gave the driver information about one of the following four aspects:

- the priority regulation,
- the obstructed view of the intersection,
- when it is safe to join or cross, and
- any deviating traffic rules or road situations.

Messages were only given if they were relevant, with a maximum of one message per intersection. The first three types of message resulted in safer decisions of both older and younger drivers. None of these messages is being offered at present by in-car driver assistance systems such as navigation systems. However, this functionality can be included in future versions of these systems.

Safety benefits for all ages

The safety benefits that adjustments to intersection design and in-car driver assistance systems can offer are not limited to older drivers; younger drivers also benefit from the simplification of the driving task that is a result of both measures. However, the safety benefit is expected to be greatest for older drivers because their functioning is closer to the limits of their capacities.

Public information and education

According to Davidse, specific public information campaigns and education are also useful. In the first place, a campaign can be used to inform the older driver about the physical and mental changes that accompany ageing, and how to deal with them in traffic. Furthermore, education and information can also be used to inform other road users of the problems that the older drivers can experience in traffic. This makes it possible for them to anticipate older drivers' behaviour.

Some data on the elderly in traffic

During the coming decades, the age group of 75 years and older will increase considerably: from 1.1 million in 2006 to 2.2 million in 2040 (Statistics Netherlands). There will be an even larger increase in the number of older drivers, as the percentage of older people having a driving licence increases as well. The increased number of older drivers is expected to result in an increased number of traffic fatalities among them. However, we expect this increase to be moderated by a lower fatality rate among the future elderly: they will be more vigorous and will have more driving experience than the elderly nowadays, and they will more often choose to drive a car rather than to cycle or walk.

	Walking	Cycling	Driving	All transport modes
30-49 years old	14	5	2	3
65-74 years old	27	33	4	8
≥ 75 years old	154	147	17	33
All ages	24	12	3	5

Fatality rate per age group and transport mode: traffic fatalities per billion kilometres travelled 2002-2006 (Source: SWOV/Transport and Navigation Department, Statistics Netherlands).

+++++

PhD ceremony

Ragnild Davidse (1971) will be awarded her PhD in Behavioural and Social Sciences on the 13th of December at Groningen University. Prof. W.H. Brouwer is her tutor, and her study has partly been financed by SWOV Institute for Road Safety Research.

Davidse graduated at Leiden University in Methods and Statistics of Psychological Research. Her first year after graduation, she worked as a researcher at the Centre for Science and Technology Studies (CWTS) at Leiden University. In 1996 she started work at SWOV. Her PhD thesis is entitled 'Assisting the older driver; Intersection design and in-car devices to improve the safety of the older driver' and can be found in its entirety [at the SWOV website](#).

+++++

More info:

Further information can be obtained from SWOV's Information & Communication department, E: persvoorlichting@swov.nl, T: +31-70-317 33 18.

About SWOV

The Institute for Road Safety Research SWOV has been conducting fundamental and anticipatory road safety research for more than 45 years, and is the main Dutch road safety knowledge and information centre. SWOV aims at improving road safety by using research results. More information about SWOV is to be found on our website www.swov.nl.