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Photo: Paul Voorham

Short training improves hazard anticipation young novice drivers

A short, approximately one hour training in a driving simulator improves the way young drivers detect hazards in traffic and how they cope with them. This is one of the conclusions in the research carried out by SWOV researcher Willem Vlakveld and on which he was awarded a PhD at the University of Groningen on 30 November.

The research indicates that young novice drivers have poor hazard anticipation: they do not recognize the hazards, do not see the risks and they accept too many risks. This poor hazard anticipation can to a large extent be attributed to lack of driving experience. However, according to Vlakveld poor hazard anticipation can easily be remedied with a fairly brief training course. He therefore advocates adding such a hazard anticipation course to the standard driver training.

Risk of crashes

Young novice drivers have a higher than average risk of being involved in a serious road crash. This is partly due to their lack of experience and partly due to 'age-related' factors. The brains of young drivers are not yet fully developed, and they often display reckless or daredevil behaviour. An average of 60 drivers between the ages of 18 and 24 are killed on the roads every year. Young novice drivers, male and female, are more than four times as likely to be involved in a crash as experienced drivers (30-59 years of age). In the case of young men, the risk is as much as six times greater.

Eye tracker

As part of his research, Vlakveld showed films of traffic situations to three groups of drivers who were divided into three groups: 'experienced drivers', young learner drivers and older learner drivers, both following the standard driver training. The eye movements of the test subjects were monitored using an eye tracker. This showed that the young learner drivers did not know where to look, as their lack of driving experience failed to alert them to possible traffic hazards.
Vlakveld also gave the young drivers a hazard anticipation training course in a traffic simulator. The sessions focused on learning to 'sense risks'. After the course, the group he had trained were significantly more aware of latent hazards than the group that had not taken the course.

Hazard anticipation test

Willem Vlakveld started his research in late 2007. In 2009, preliminary results already resulted in the Dutch Driving Test Organisation (CBR) deciding to include hazard anticipation in the theoretical part of the driving test. To pass this part of the test, candidates are given photos of traffic situations and have to indicate whether they would adjust their driving speed and if so, how.

The research shows that experienced drivers perform better on this test than novice drivers. It also indicates that young novice drivers who have been in a crash do worse on the test than young novice drivers who have not been involved in a crash. Vlakveld concludes from this that crash involvement is not sufficient learning material. He therefore designed his own training module in a way that helps drivers to learn from experience.

Moving images

Vlakveld also concludes that it is better to test hazard anticipation by using moving images. A film test is also harder to pass if only theoretical exercises have been made; candidates will therefore need to acquire actual hazard anticipation skills.

In addition to a CBR test with moving images, Vlakveld would therefore also like to see a hazard anticipation course included in the standard driver training. Vlakveld developed such a training course as part of his research. If the course proves to leave a lasting effect, it can be included in the driver training.

Hazard anticipation of young novice drivers.
Willem Vlakveld (2011).
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