

Rehabilitation courses for road users

Summary

Rehabilitation courses are educational measures directed at deviant driving behaviour of car drivers. The Netherlands has three rehabilitation courses: EMA (Educational Measure Alcohol and traffic), LEMA (Lighter version of EMA) and EMG (Educational Measure Behaviour and traffic). Also outside the Netherlands many rehabilitation courses are organized. Participation may be voluntary or compulsory, if necessary in combination with other punitive measures and sometimes linked to a demerit points system. The effectiveness of the courses cannot be defined unequivocally. Certain evaluations show an effect on attitude, behaviour, crash rate and recidivism, yet other research shows no effect at all. Based on various (international) studies, we can conclude that a rehabilitation course is more effective when combined with a temporary or permanent licence suspension.

Background and contents

Rehabilitation courses for road users are often referred to as Driver Improvement Programmes in English-speaking regions and in the Netherlands they are often defined as Educational Measures. These courses aim at improving hazardous driving behaviour of offenders, for the purpose of reducing the crash rate. The majority of courses aim at drink-driving offences, as, for instance, the Dutch Educational Measure Alcohol and traffic (EMA), but other courses also aim at different– major or recidivist– offences, for instance with respect to speeding and aggressive driving behaviour. This fact sheet will discuss when and how rehabilitation courses are presently employed in the Netherlands and will briefly present examples of courses elsewhere in Europe. Furthermore, this fact sheet discusses the effectiveness of rehabilitation courses and how these courses can be improved in terms of process and content.

When and how are rehabilitation courses used?

As has been indicated above, rehabilitation courses for road users focus on people who have committed a (major) offence. Many countries make use of rehabilitation courses of one type or another. In the Netherlands and in many other European countries the courses are compulsory. If the driver does not or not sufficiently cooperate, the driving licence is suspended. Occasionally, the driving licence is suspended at the start and only returned after successful completion of the course. In other countries, such as Belgium and Switzerland, the driver is given an option. If the driver opts for the course, this may result in the matter not being taken to court, or the consequences being less severe. For instance, drivers may have their driving licence returned more quickly or fines may be lower. Occasionally, the course is combined with a demerit points system and is only made when a set number of points is reached (see also SWOV fact sheet [Demerits Points Systems](#)). This is the case in, for example, Germany.

Rehabilitation courses often take up a number of daily periods, divided over a number of days. They are given by trainers/psychologist trained for this purpose. Trainers of drink-driving courses often work in addiction care. Police or driving instructors are sometimes involved in courses aimed at speeding. The content of the courses varies, but the majority aim at improving self-reflection, hazard perception and correct perception of one's individual driving behaviour. Participants are also frequently presented with theoretical knowledge. In the case of drink-driving courses, the information for instance concerns the effect of alcohol on driving behaviour. Some courses also include a practical part; in Germany, for example, an test drive is made in order to be able to gain feedback from other participants.

Which rehabilitation courses are available in the Netherlands?

In the Netherlands three rehabilitation courses or Educational Measures are available: the Educational Measure Alcohol and traffic (EMA), the Light EMA (LEMA) and the Educational Measure Behaviour and traffic (EMG).

1. *EMA* (Educational Measure Alcohol and traffic) is a three-day course given to people who participated in traffic with a blood alcohol concentration (BAC) between 1.3‰ and 1.8‰. Research carried out in the Dutch city Tilburg (Mathijssen & Houwing, 2005) showed that 19.6% of the drivers who had been taken to hospital as a result of a traffic crash had a BAC of 1.3 or higher, whether or not in combination with drugs. EMA is compulsory: if not taken (or not actively enough), the driving licence is suspended. In addition, the course always has to be paid by the offender. The aim of EMA is to teach drivers to separate alcohol from traffic participation. During the course, information is provided about the effect of alcohol on the body and on driving behaviour. In addition, the serious consequences that alcohol in traffic may have are considered. The exchange of experiences is stimulated. Participants are also given homework assignments. An expert trainer connected to an addiction centre gives the course. A course is given to eight to twelve people between 18 and 80 years old. According to the Dutch Driving Test Organization 8,198 offenders followed EMA courses in 2009 (CBR, 2009).
2. *LEMA* (Light Educational Measure Alcohol and traffic) consists of two half-days of 3.5 hours each. LEMA is intended for novice drivers (people who received their driving licence less than five years ago) with a BAC between 0.5‰ and 0.8‰. In the Netherlands, the legal limit for this group of drivers is 0.2‰. The course is compulsory; if refused (or in the case of insufficient participation), the driving licence is declared invalid. In the case of a higher BAC or repeat drink-driving offences, novice drivers are also referred to EMA. The idea behind LEMA is that this group, with this particular BAC, can still be pointed into the right direction with a relatively mild measure. Novice drivers are actually expected not to have made drink driving into a habit yet. A trainer connected to an addiction centre also gives LEMA and a course is followed by eight to twelve, mainly young, participants. They have to pay for the course themselves. Content wise, LEMA resembles EMA, but LEMA is less confrontational and the approach is slightly more positive. In 2009, 775 novice drivers followed LEMA courses (CBR, 2009).
3. *EMG* (Educational Measure Behaviour and traffic) is meant for drivers who repeatedly showed undesirable driving behaviour in the course of one drive. Also in the case of one single major speeding offence, a driver can be referred to EMG. It is important that prior to participation it has been established that the person concerned has indeed committed the offence. EMG can therefore not be imposed merely on the basis of the number plate. Other requirements involve deliberate hazard-inducing driving behaviour, lack of hazard perception, incorrect interaction with other road users, or behaviour offending against traffic laws and road signs. It is compulsory for participants to take this three-day course and they have to pay for the course themselves. During the course drivers are encouraged to become more aware of the risk their behaviour constitutes for other road users. In 2009, 995 participants followed EMG courses (CBR, 2009).

Occasionally, a driver may meet the legal criteria to take a rehabilitation course and nevertheless not be suitable for this particular educational measure. EMA and LEMA have limited use in case of addiction problems, for example. Neither should people with a personality disorder be referred to EMG. These are the reasons why the Dutch Driving Test Organization CBR has drawn up counter-indications (see www.cbr.nl).

Which rehabilitation courses are found outside the Netherlands?

Various rehabilitation courses for traffic offenders are found in other countries. We will present a brief outline of these courses, distinguishing between those directed at drink driving, speeding and general rehabilitation programmes. For a more complete survey, see the various articles under [Publications and sources](#).

Drink driving

Courses aimed at drink driving are for example found in Belgium, Austria, Switzerland and the United Kingdom. The course in Belgium resembles LEMA and is directed at novice drivers. Other than LEMA, the Belgian course is voluntary (although the case is taken to court if drivers do not participate). In Switzerland the course is also voluntary, but the driving licence is returned to drivers earlier if they participate. The course in Switzerland is intended for drivers who have been convicted for drink driving twice. Prior to the course, a personal interview is conducted to discover as much as possible about each individual participant. The aim of the course is to inform participants more fully about the subject of drink driving. In addition, participants are supported in changing their drinking habits and they are assisted in mapping the reasons for their drinking behaviour.

The course in Austria is compulsory: drivers lose their driving licence, if they do not participate. The idea behind the course is to make people aware of the relationship between hazardous behaviour and personal attitude by providing information about the effect of alcohol. By developing adequate behavioural patterns, recidivism should decrease.

In the United Kingdom, the National Driver Improvement Scheme (NDIS) is employed. During this course, drivers first receive theoretical training, followed by practical training. Besides, participants have to do assignments related to the subject of safe traffic. If the driver participates in all parts of the course, the offence is declared null and void and no further action is undertaken in terms of fines or prosecution. In principle, participation is not compulsory, but if rejected, the driver has to appear in court.

Speeding

Belgium and the United Kingdom offer courses specifically aimed at speeding offences. Participating in the speeding course is voluntary in Belgium, but is taken into consideration by the judge. The aim of the course is to provide participants with skills (by means of practical assignments) and theoretical knowledge about the consequences of speeding. Drivers who participate can get their driving licence returned more quickly or receive lower speeding fines.

In the United Kingdom NSAS is employed: National Speed Awareness Scheme. This is an alternative for the demerit points system: three penalty points are deducted if the course is taken. People can only take part in the course if it is offered to them by the police (instead of points and a fine). They can therefore not opt for this choice to avoid a fine. Once a driver has participated in the course, he or she is not allowed to participate again for three years. The purpose of the course is to make drivers aware that they are fully responsible for everything they do, for their driving behaviour as well as for the consequences.

General rehabilitation programmes

Portugal makes use of a voluntary rehabilitation programme that is aimed at all offenders. The aim is to encourage the intention to adhere to the law, better knowledge of the law and prevention of recidivism. The programme deals with the psychological reasons of hazardous driving behaviour, among other things, and is combined with other punishments.

Germany uses a rehabilitation programme for novice drivers who have committed an offence. The purpose of this course is to prevent recidivism by making participants more aware of the hazards. The intervention consists of the issues of self-reflection, changing behaviour and attitude and building new strategies. Drivers also carry out a practical drive with fellow participants to receive feedback from people of their own age. A special course linked to a demerit points system is used for drivers who have committed an offence more than once. The course is voluntary for people with a score up to 14 points; the course is compulsory for people with more than 14 points.

In Latvia the course is also linked to a demerit points system. Points are given for each offence. People with 4 points or more receive a letter in which they are advised to drive more safely. With 8 points they receive a letter in which it says that they must take an instruction course. The majority of these people committed drunk driving; this group also has to undergo a medical test, in addition to the course. The penalty for novice drivers with 10 points is suspension of the driving licence for 1 year; for experienced drivers this is the case at 16 points. After this year of suspension they have to take the driving test again. Two penalty points may be deducted upon successful completion of the course.

How effective are rehabilitation courses?

In the Netherlands only EMA has been evaluated until now. This evaluation looked at the effects on knowledge, attitude and self-reported behavioural intention, but did not look at recidivism (repeated behaviour), or the crash rate. EMG is presently being evaluated and LEMA is expected to be evaluated.

The evaluation of EMA (Vissers & Van 't Hoff, 1998) involved an experimental and a control group. The experimental group (the EMA group) was presented with a questionnaire at the start of the first day of the course, at the end of the course and during the final interview (some time afterwards). The control group (apprehended for drink driving; no EMA) was presented with questionnaires at the same times as the experimental group. EMA seems to have a positive effect on knowledge and attitude with respect to drink driving. This effect is also noticeable with respect to behavioural intention. It should be mentioned that this concerns self-reported behaviour that may be subject to social desirability. Based on international data, Kuiken & Oostlander (2004) estimate that the recidivism rate will be reduced by 10% in the first year and by 5% in the second and third year after having taken the EMA course.

However, these estimates are based on only a few studies showing a large effect, whereas various foreign studies (see Elvik et al., 2009 for example) show no effect. For this reason, conclusions cannot be drawn about the effect of EMA on recidivism in the Netherlands. On the other hand, recidivism research was carried out into the effect of a drink-driving course in Belgium (Vanlaar et al., 2003). Although the study does not show a statistically significant effect, the authors conclude that there are proper indications that the course reduces the percentage of recidivism.

In addition, a number of international surveys and meta-analyses of the effectiveness of rehabilitation courses have been published. For example, Masten & Peck (2004) included 37 studies in their meta-analysis, involving a total of 106 programmes, looking at the effects of these programmes on offences, crash rate and hazardous behaviour. The measures ranged from sending warning letters to group courses, and from individual interviews to temporary or definite suspension of the driving licence. Measures that focussed on drink-driving offenders only were not included in the meta-analysis. The analysis showed small, but significant effects on the crash rate. If no distinction is made in terms of type of intervention, the 'average' intervention corresponds with a reduction of the crash rate of 6% and a reduction of offences of 8%¹. If the individual types of measure are considered, those measures combined with temporary or definite suspension of the driving licence turn out to be the most effective (reductions of 17% in crash rate and 21% in offences), although group sessions are also effective. These correspond with 5% fewer crashes and 8% fewer offences.

Ker et al. (2005) studied the effectiveness of 18 courses and found no effect on the crash rate. The courses mainly concerned ongoing, voluntary traffic education, offered to car drivers who had committed traffic offences. The courses were not part of a penalty measure.

Also in the context of the European project SUPREME (2007), a large number of courses were studied. They concerned courses intended as a legal penalty measure, as well as voluntary education. Consequently, the results of this review are very heterogeneous. Five meta-analyses were included, among which the above-mentioned studies of Masten & Peck (2004) and Ker et al. (2005). Struckman-Johnson et al. (1989; cited in the SUPREME study) did not find an effect of the measures studied. Wells-Parker et al. (1995, also cited in the SUPREME study) studied courses directed to drink-driving offenders. They concluded that the crash rate and recidivism is 7 to 9% lower for those who took a rehabilitation course, compared to those who had only been given 'ordinary' penalties (a fine or suspension of the driving licence, for instance). Finally, Elvik et al. (2009) conclude that group discussions supervised by a facilitator have no effect on the crash rate; however, courses in defensive driving behaviour do have an effect.

All in all, we have to conclude that the effectiveness of rehabilitation courses cannot be determined unequivocally. Certain evaluations show an effect on attitude, behaviour and crash rate. On the other hand, other research shows no effect at all. Measures that are found to have an effect are often combined with temporary or definite suspension of the driving licence. Besides, the effectiveness is probably also dependent on the know-how and commitment of the instructors. The time passing between the offence and the participation in a course may also be important. However, these kinds of issues have as yet hardly been studied systematically.

How can effectiveness be improved?

Process

In the ideal case, everyone meeting the criteria for a course will indeed end up in the course without anyone 'escaping'; this is defined as *high sensitivity of the selection process*. At the same time, people who do not meet the criteria do not end up in the course undeservedly. The ideal case is therefore also a case of *high specificity of the selection process*.

With EMA and LEMA, sensitivity and specificity are higher than with EMG. After all, EMA and LEMA are based on a breath test. Based on this breath test, a blood test can then be decided on. If the blood test indicates that the BAC meets the criteria of EMA or LEMA, the police can report this to Dutch Driving Test Organization CBR. In many cases this happens automatically due to the computerized police system. Matters are more complex with EMG, because many types and combinations of behaviour are possible that may result in the conclusion of 'hazardous or hazard-inducing behaviour'.

¹ Since it concerns a meta-analysis in this case, seriousness of the crash or type of offence were not itemized. One of the criteria for inclusion in the meta-analysis was: "the study has included crashes, as well as offences as independent variables".

Consequently, no standard procedure is available, as is the case with drink driving. People who meet EMG criteria may not end up in it. In a letter to Dutch Parliament, dated April 2010, the Minister of Transport presented three proposals to improve the process of referral (VenW, 2010).

Content

In the previously mentioned SUPREME study, a number of suggestions are presented to improve the effectiveness of rehabilitation courses. For instance, courses should be combined with temporary suspension of the driving licence and a course should be customized to the specific problems of the target group as much as possible. For example, personality disorders should be treated differently from the way addiction problems are dealt with. Mesken (2006) advises the course to be directed at specific behaviour (assessing hazards or interpreting specific events, for instance), instead of training general safety awareness. SUPREME further argues in favour of an empathic approach, rather than a confrontational approach. This approach is presently already applied by the Dutch LEMA. Finally, the SUPREME study recommends imposing rehabilitation courses as early as possible, in order to prevent deviant behaviour becoming a habit. This means that especially offenders among novice drivers constitute an important target group.

Conclusion

Rehabilitation courses are educational measures aimed at deviant driving behaviour of car drivers. Participation may be voluntary or mandatory, if necessary in combination with other penalty measures. In general, courses are given in groups, supervised by a trainer/ psychologist trained for this purpose. In some countries, the course is combined with a demerit points system. The effectiveness of the courses has not been established unequivocally. A number of evaluations show an effect on attitude, behaviour, crash rate and recidivism, yet other research shows no effect. Considering the various (international) studies, we can conclude that a rehabilitation course is more effective if it is combined with temporary or definite suspension of the driving licence. Practically nothing is known about the influence of the didactic approach and the quality of the trainers on the effectiveness of the rehabilitation courses. Dutch studies into the effects of EMA indicate an effect on knowledge, attitude and behavioural intention, but no Dutch data is known about the effects on crash rate and recidivism.

Publications and sources

CBR (2009). [Jaarverslag 2009](#). www.cbr.nl; Dutch Driving Test Organization CBR, Rijswijk.

Elvik, R., et al. (2009). [The handbook of road safety measures](#). Second Edition. Emerald Group Publishing Ltd, Bingley, UK.

Ker, K., et al. (2005). [Post-licence driver education for the prevention of road traffic crashes: A systematic review of randomised controlled trials](#). In: Accident Analysis and Prevention, vol. 37, nr. 2, p. 305-313.

Kuiken, M.J. & Oostlander, I.L. (2004). [Evaluatie vorderingsprocedure; Eindrapport](#). Directoraat-Generaal Rijkswaterstaat, Adviesdienst Verkeer en Vervoer AVV, Rotterdam.

Masten, S.V. & Peck, R.C. (2004). [Problem driver remediation; A meta-analysis of the driver improvement literature](#). In: Journal of Safety Research, vol. 35, nr. 4, p. 403-425.

Mathijssen, M.P.M. & Houwing, S. (2005). [The prevalence and relative risk of drink and drug driving in the Netherlands: a case-control study in the Tilburg police district : research in the framework of the European research programme IMMORTAL](#). R-2005-9. SWOV Institute for Road Safety Research, Leidschendam.

Mesken, J. (2006). [Determinants and consequences of drivers' emotions](#). Proefschrift Rijksuniversiteit Groningen. SWOV-Dissertatiereeks, Stichting Wetenschappelijk Onderzoek Verkeersveiligheid SWOV, Leidschendam.

SUPREME (2007). [Summary and Publication of Best Practices in Road Safety in the EU-Member States plus Switzerland and Norway. Thematic report: Rehabilitation and diagnostics](#). Directorate-General for Transport and Energy (TREN), European Commission, Brussels.

Vanlaar, W., Kluppels, L., Wiseur, A. & Goossens, F. (2003). [Leiden sensibilisatiecursussen voor bestuurders onder invloed van alcohol tot een lager recidivegehalte dan klassieke straffen? Een empirische evaluatie van de Belgische sensibilisatiecursussen op basis van de survival time tot de eerste recidive](#). Belgisch Instituut voor de Verkeersveiligheid BIVV, Brussel.

VenW (2010). [Toezeggingen doorgifte informatie politie/CBR en termijnen educatieve maatregelen](#). Brief aan de Tweede Kamer, 6-4-2010, VENW/DGMO-2010/843. Ministerie van Verkeer en Waterstaat, 's-Gravenhage.

Vissers, J.A.M.M. & Hoff, J.P. van 't (1998). [Effecten van de EMA: Een evaluatieonderzoek naar de leereffecten van de Educatieve Maatregel Alcohol en verkeer](#). TT98-26. Traffic Test, Veenendaal.