

Driver training and driving tests

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Summary

In the Netherlands, licence acquisition courses for category B (passenger cars) are concluded by a theoretical and a practical test. Driving lessons are not obligatory, but without them passing the practical test is virtually impossible. For practical reasons, the effectiveness of drivings tests and driver training is hard to assess in a scientific way. A few studies of the effectiveness of theory tests and practical driving tests are indeed available. These do, however, not show a marked relation between crash risk and driving test performance or driver training. Neither do supplementary courses present convincing evidence of effectiveness, unless they involve comprehensive training to enhance traffic insight and self-awareness. Graduated licencing – which allows prospective drivers to gain maximum driving experience in safe conditions – appears to have a positive impact on crash risk, but this seems to be mostly caused by less exposure to hazardous conditions rather than (much) improved driving competence. The effectiveness of schemes such as accompanied driving and the provisional licence has not been unambiguously ascertained.

This fact sheet primarily focuses on a category B driving licence. Information about the tractor licence and the different motorcycle/moped/light-moped licences can be found in the respective fact sheets at [www.swov.nl/facts and figures](https://www.swov.nl/facts-and-figures).

1 How does the Dutch licencing system work?

Every motorized road user needs to have a driving licence. There are different licences for microcars, mopeds, light mopeds, motorcycles, cars, lorries, buses and tractors. For riding an e-bike with pedal support up to 25 km/h no licence is needed, whereas it is for riding an e-bike with pedal support up to 45 km/h ('speed pedelecs'). To qualify for licence acquisition, candidates need to be of a certain age, be healthy, and have the knowledge and skills needed to be safe, smooth and eco-friendly road users.

In the Netherlands, driving skills are assessed during a two-tiered theory and practical test (also see the question *What is assessed in driving test B?*). There are age limits for starting driver training in certain vehicles and for taking the two exams. See table 1 for the most common categories; on the website of the Dutch Driving Test Organisation (CBR in Dutch, www.CBR.nl), information about all licence categories may be found.

Table 1. Minimum age driving lessons and driving test for different vehicle categories.

Licence category	Vehicle	Experience	Minimum age driving lessons	Minimum age theory test	Minimum age practical driving test
AM	Microcar, moped, light moped, speed pedelec		16	15,5	16
A1	Light motorcycle (125 cc and maximum power output of 11 kW)		17	17	18
A2	Medium power motorcycle (maximum power output of 35 kW)	Novice	20	17	20
		A1-licenced	19	No theory test necessary	20
A	Unlimited-power motorcycle	Novice	21	17	24
		A2-licenced	21	No theory test necessary	22
B	Car and delivery van		16,5	16	17 (unaccompanied from age 18)
C1	Lorry (3500-7500 kg)	B-licenced	17	17	18
		For professional transport: B + licenced and skilled	17	17	18
C	Lorry (> 3500 kg)	B-licenced	17	17	21
		For professional transport: B + licenced and skilled	17	17	18
D/D1	Bus (> 8 seats, D1 bus ≤ 8 m)	Professional qualification needed for professional passenger transport	17	17	18 (up to 21 only licenced for public transport bus < 50 km/h)
T	Tractor		16	15,5	16

More information about the requirements for driving motorized vehicles is to be found in SWOV fact sheets [Moped and light-moped riders](#), [Motorcyclists](#), [Agricultural traffic](#) (including [What is the road safety effect of the T-licence?](#)) and in fact sheet [Trucks and delivery vans](#).

This fact sheet does not pay attention to what is needed for someone to retain their licence nor to the assessment of fitness to drive for the elderly (age-related assessment) (see fact sheet [The elderly in traffic](#)).

2 How has formal driver training been set up in the Netherlands?

Driving lessons can only be given by a qualified driving instructor. This is laid down in the Motor Vehicle Driver Instruction Act (WRM in Dutch). A driving instructor needs a diploma from the Dutch Institute of Certification and Examination for the Mobility Sector (IBKI in Dutch) and needs to do a refresher course for a minimum number of hours every five years. This refresher course consists of refreshing one's theoretical knowledge and an assessment of the driving lessons given to candidates. The driver's ed car also has to comply with a number of requirements (including dual control).

In the Netherlands, driving lessons are not required by law. But without driving lessons it is virtually impossible to pass the driving test. Candidates that pass the test have usually spent an average of 42 hours behind the wheel, sitting next to a driving instructor [1]. Driving test examiners have completed a training designed by the Dutch Driving Test Organisation (CBR in Dutch), have had a B licence for at least 10 years and have at least an mbo+ or havo certificate (Dutch secondary school levels).

Unlike most other European countries, the Netherlands do not have a national curriculum and no minimum number of lessons is required - neither theory lessons nor driving lessons – for taking a driving test. The Dutch freedom of education laid down by law is the reason for this. The subjects taught during the driver training are largely determined by what is assessed during the driving test. This implies that a number of subjects that are hard to test or that cannot be tested at all but are, however, important for road safety, are often not or hardly addressed. Examples are risk acceptance, self-awareness and resistance to peer pressure. Yet, these subjects are often (partly) why young novice drivers are involved in crashes [2] [3] [4] [5].

3 What is assessed in driving test B?

What should be assessed in driving test B is laid down in two legal provisions: the [rules for requirements for the theory test of driving licence category B \(in Dutch\)](#) and the [rules for requirements for the practical driving test of driving licences categories B and BE \(in Dutch\)](#). These two sets of rules are based on [the third driving licence directive](#) of the European Union. In the Netherlands, the Dutch Driving Test Organisation ([CBR](#) in Dutch) is responsible for driving tests .

Theory test

The theory test assesses knowledge of:

- traffic rules
- matters that have a negative impact on driving skill (for instance alcohol and fatigue)
- safe vehicle spacing, braking distance and speed
- the behaviour of other road users, particularly that of vulnerable road users (pedestrians and cyclists)
- the driving licence itself (for instance the period of validity) and other documents (for instance insurance)
- the use of means of protection (for instance seat belts and child restraint seats)
- a few technical aspects, such as inflation pressure of tires
- eco-friendly driving (see for instance the principles of [Ecodriving](#))
- hazard perception

Hazard perception questions have been part of the theory test since 2009 (also see the question [How useful is hazard perception as part of driver training and driving tests?](#)). When confronted with photographs taken from a driver's perspective, the candidate has to indicate whether he or she would brake, would release the accelerator, or maintain speed. The present speed is presented at the bottom of the picture. For a few years now, CBR has been working on a hazard perception test with moving images that should replace this photo test. The theory test now also has more questions concerning judgement. These questions, about the risk of driving during certain weather conditions for instance, have replaced questions like 'The car in this picture wants to turn left. Is that allowed?'

Practical driving test

During the driving test, the candidate drives for about 35 minutes in the presence of an examiner. Before departure, the candidate has to check the vehicle and adjust the driving position (and for example adjust the mirrors). During traffic participation, the following skills are assessed: vehicle control, following traffic rules in specific traffic conditions, and how special manoeuvres are carried out, such as parallel parking or reversing around corners. About 10 minutes of the driving test are reserved for following navigation system instructions. The [Driving procedure \(in Dutch\)](#) states how the candidate is required to act when departing, driving and exiting the vehicle.

It is possible to practice the driving test in an intermediate test. This intermediate test takes just as long as the real driving test and contains the same elements. Thus, candidates may get used to test conditions and receive tips from the examiner. If the special manoeuvres are carried out correctly during the intermediate test, candidates obtain exemptions for these manoeuvres during the official driving test.

4 What is the road safety effect of (the quality of) driver training?

In the Netherlands, no studies of the crash risk effects of (the quality of) driver training have been done (the number of crashes across covered distances). But in 2013, the Dutch driver training system was compared to that in our neighbouring countries (Germany, Belgium and the United Kingdom). This showed that the type of driver training system did not have a marked effect on road safety (measured in number of casualties). The four countries do, however, show large differences in driver training. Germany has a strict set of rules (obligatory number of theory lessons and driving lessons with a qualified driving instructor), whereas the United Kingdom only has few rules (with a provisional licence, learners may drive on public roads before any theory test or practical driving test has been taken, provided they are accompanied by adults). Yet, marked differences in 'safety outcomes' are not apparent, measured in the share of young drivers involved in crashes. None of the countries compared pays a great deal of attention to higher-order skills, such as hazard or risk perception, risk acceptance and self-reflection [6].

In some countries, prospective drivers may choose to take driving lessons at registered driving schools or to be mentored by laypersons (usually a parent). This makes comparison of both groups possible. Research in these countries has shown no difference in crash risk between both groups in the first few years after licence acquisition [7] [8] [9] [10]. A cautionary note that should be made here is that people in these countries make their own choices for driver training schools or accompaniment by laypersons. This precludes straight comparison. People choosing mentoring by laypersons could have more talent or be more motivated to learn to drive than their peers choosing driver training schools. Thus it seems that Finnish candidates from families higher up the social-economic scale more often choose mentoring by laypersons (Hatakka, 1998 as mentioned in [11]). This may lead to bias. However, a few randomized controlled trials (RCTs) have been carried out which randomly allocated test subjects to either of the abovementioned groups. These RCTs did not show a difference in crash risk between both groups either [12]. In their meta-analysis of the effectiveness of basic driver training in preparation for a driving test, Elvik et al. [8] note that the methodologically superior studies show no difference at all. In Denmark, an effect *has* been found after a thorough change in the national curriculum [13] and in Nebraska in the US, after the introduction of a basic training course [14], but these studies were done without any control groups and should therefore be characterized as methodologically less sound.

That basic driver training has little to no effect on crash risk may be explained by the fact that this training is primarily about vehicle control and safe traffic participation in ordinary traffic conditions. It is to be expected that learners will perform these tasks better when trained by a qualified driving instructor than when they are trained by laypersons. Yet, technically competent drivers are not necessarily safe drivers. Foreign in-depth research has shown that for most crashes in which young novice drivers are involved, a lack of hazard perception, distraction and driving at high speeds that are not appropriate to the circumstances play an important role [3] [4]. Inadequate vehicle control seldom causes crashes.

5 What is the road safety effect of the driving test?

It is hard to carefully study whether passing the theory test and/or practical driving test has an effect on crash risk. After all, the candidate failing the licence acquisition test for a particular vehicle is not allowed to enter traffic driving that vehicle independently. Thus, it is impossible to compare crash risk of candidates that passed to candidates that failed the test. The few studies of the effectiveness of both theory and practical driving tests that do exist, do not show a marked relation between driving test performance and crash risk. Moreover the test effect cannot be dissociated from the driver training effect, since candidates will prepare for the test through training.

Theory test

A theory test assessing knowledge of traffic rules appears to have no effect on crash risk, whereas a hazard perception test does appear to have a positive effect.

In their meta-analysis of ten (mostly older) studies Elvik et al. [8] did not find any crash risk effect of incorporating a theory test into the licence acquisition test. Simpson et al. [15] verified whether the introduction of the theory test in the United Kingdom in 1997 resulted in crash decrease for novice drivers. They showed that attitude and behaviour had somewhat improved but that crash risk had not decreased. After introducing a hazard perception test with moving images, crash risk of novice drivers in the United Kingdom did slightly decrease [16]. Australian research showed a 25% decrease in crash involvement for candidates passing a hazard perception test, compared to those not passing this test [17].

Practical driving test

Although the effect of the practical driving test is hard to study carefully (see above), researchers in the United Kingdom did try to remark on the responsiveness of the practical driving test to safe driving. No marked relation between driving test performance and crash risk emerged.

Unlike the Dutch examiners, British examiners meticulously assess candidates' behaviour. Every small or significant imperfection in the execution of traffic actions is scored on a scoresheet. Successful candidates who have made minor mistakes and successful candidates who have not made any mistakes at all may be compared for crash risk. Differences in crash risk for these two groups would indicate how responsive to safe driving the practical driving test is. Baughan en Sexton [18] did, however, not find any difference in crash involvement between the two groups in the first six months after licence acquisition. Baughan et al. [19] did report that successful candidates who made a lot of minor mistakes during the practical driving test were slightly more often involved in crashes than those who made few minor mistakes, but explain this larger involvement by the observation that the first group drives more and is therefore more exposed to traffic risks.

6 How useful is hazard perception as part of driver training and driving test?

When drivers are better able to perceive and predict potential hazards, this will lead to fewer crashes [3]. Thus, performance during a hazard perception test is a good predictor of crash risk for novice drivers. In the state of Queensland (Australia), candidates for graduated driving licence acquisition need to take a separate hazard perception test. Passing the test means the candidate is allowed to drive without any restrictions. Failing the test means one more year of driving with restrictions (no peers present in the car, no driving in the dark). In spite of these restrictions, crash risk during that extra year is 25% higher for candidates having failed the hazard perception test than for those having passed this test [17].

Hazard perception may be described as the timely detection and recognition of traffic conditions that may be dangerous. Hazard perception also means that drivers are able to predict how a traffic situation may evolve, are able to assess whether this may lead to danger, and will take action to ensure that this danger will not result in a crash [20]. Hazard perception can be trained [21], often by means of interactive training sessions on a laptop or tablet. Recently, hazard perception training courses have been developed which use virtual reality glasses [22]. A driving simulator may also be used for hazard perception training [23].

It has been shown that hazard perception training permanently improves observation behaviour [21]. Examples of this kind of training courses are the Queensland Transport Hazard Perception Test (QT-HPT), different variants of Risk Awareness and Perception Training (RAPT) and Act and Anticipate Hazard Perception Training (AAHPT). RAPT has been tested most extensively. A recent large-scale randomized controlled trial (RCT) in the United States has shown that, after RAPT, in the first year of independent driving, the crash risk for young men significantly decreased, unlike the crash risk for young women [24]. The lack of a significant effect for young women may be caused by their already lower crash risk figures after licence acquisition compared to those for young men. Thus, RAPT may have contributed to their crash risk to a lesser extent.

7 What can driving simulators contribute to driver training?

A driving simulator may offer the following training benefits:

- **Expedited exposure to a broad range of traffic situations**
Scenarios may be designed to harbour a large number of learning occasions in a short period of time. This will make training more intense. During actual road use, the learning occasions are fewer in number.
- **Improved feedback options from different perspectives**
Without feedback, learning is impossible. Driving simulators offer the opportunity to give feedback during driving, for example by showing the candidate's actions during a specific

traffic assignment 'from above' or by displaying them from the perspective of the other road user.

➤ **Unlimited repetition of learning occasions**

If a driving instructor wants to practise merging on a busy motorway in a driver's ed car, he depends on the contingency of this difficult merging task occurring during the driving lesson. In a driving simulator the required situation may be staged and often repeated.

➤ **Automated and objective assessment**

In a driving simulator, a candidate's performance may be measured very accurately and objectively. During driving lessons, candidates have to rely on the driving instructor's 'clinical view'.

➤ **Demonstration of actions**

During driving lessons, the driving instructor tells the candidate how to act. Hardly ever does the instructor take place behind the wheel to show the candidate how things are done. In a driving simulator, screens may show how actions are supposed to be carried out.

➤ **Safe practice environment**

Only very few candidates will have had driving lessons in dense fog. In a simulator, driving in hazardous conditions can be practised safely.

Driving simulators also have disadvantages. A simulator mimics a reality that, even in the case of the most advanced high-end simulators, is far from perfect. If the simulator conditions strongly deviate from reality, the simulator lessons learned will not necessarily be applicable in actual traffic. A candidate may also become nauseous in the driving simulator (simulator sickness).

Research into training simulators used in the Netherlands has shown that having started lessons on a driving simulator slightly increases the chances of passing the driving test [25]. Whether simulator training will also result in a lower crash risk after licence acquisition is not known.



Figure 1 Example of the type of driving simulator often used for training purposes.

8 How useful is additional training after driving licence acquisition?

For young drivers

The usefulness of additional training for young drivers, also called advanced driver training, lacks convincing evidence [26]. What is definitely ineffective is training that focuses on short-term teaching of skills, such as skid courses. Obligatory skid courses in Norway, Sweden and Finland proved not to have any or to have an adverse effect on crash risk [27]. The courses are too short to result in automatism of complex, sometimes counterintuitive actions needed to avoid or correct skidding. Candidates having taken a skidding course do, however, think they have mastered the necessary skills. This makes them overconfident resulting in higher risk-taking than drivers who have not taken the course.

Advanced training courses focusing on improving traffic insight and enhancing self-awareness are more effective; see for example the ADVANCED-project [28]. But even then, success is not self-evident. After a Dutch training, based on the ADVANCED-ideas, attitude, self-assessment, and risk acceptance proved to have improved at just one of the two training locations, and to have deteriorated at the other training location [29]. There is evidence to suggest personal convictions about the effectiveness of the ADVANCED-project were a factor in the differing impacts of the lessons at the two training locations.

In Finland and Austria, obligatory additional training for novice drivers has been assessed. After introduction of the obligatory advanced training course in Finland, no decrease in crash risk was found in the first year and a half after licence acquisition [30]. Austria has imposed the most extensive further training courses in the first two years after licence acquisition. Novice drivers have to return for a driving improvement course at six different moments. The crash risk in Austria may have decreased after this extensive further training course, albeit that the research proving this was not methodologically strong [31] [32].

Senserrick [33] concludes that, in Australia, a general training for adolescents, focusing on risk behaviour and resilience (such as resistance to peer pressure), may have a positive impact on road user behaviour. She concludes that this is more effective than a training course focusing on hazard perception in traffic.

For experienced drivers

An extensive meta-analysis by the Cochrane institute has shown that follow-up training for experienced drivers (whether obligatory or not) does not result in crash risk decrease [34]. Nevertheless, some training forms may be effective. For large companies employing a great many drivers, follow-up training focusing on insight in one's own limitations, perception and interpretation of traffic conditions may result in a crash risk decrease among the drivers [35] [36].

9 Can mandatory retaking of a (theory) test improve road safety?

There is no recent information available about the effects of mandatory retaking of a (theory) test. Up until the seventies, retaking of a (theory) test was mandatory in Norway; when this principle was abolished, negative effects on crash risk did not occur [8]. Since the initial theory and practical driving tests do not show a marked relation to crash risk (see the question [What is the road safety effect of the driving test?](#)), we do not expect retaking a (theory) test will have much effect.

10 What driver training methods are there and do they effect road safety?

In the Netherlands, driver training courses are not bound by rules and, therefore, a great many variants exist. Traditionally, for several months, a candidate takes one or two driving lessons a week. At first, the focus will be on vehicle control and later on road use. Below, a few variants to the traditional driver training methods are described.

Driver training in steps

Driver training in steps (In Dutch: Rijopleiding In Stappen (RIS)) is a structured approach, developed in co-operation with the Dutch Driving Test Organisation (CBR in Dutch). RIS consists of four modules [37]. The candidate can only start the next module after the previous one has been fully completed. The first module concerns vehicle control, the second simple traffic situations, the third more complex traffic situations and the fourth traffic insight and responsible driving. Candidates are taught by means of so-called scripts: they learn the relevant procedures (first look at this, than that, subsequently do this etc) before actual traffic actions are taken. It is unknown whether candidates having done the RIS have fewer crashes in the first few years after licence acquisition than those who have done a more traditional driver training course.

The intensive driving course

Some driving schools offer intensive driving courses. During this kind of training course a candidate has full-day driving lessons on consecutive days. To pass the driving test, the candidate needs fewer training hours than in the case of traditional training [1]. However, there is evidence to suggest that the crash risk after licence acquisition is higher for candidates having done the intensive driving course than for candidates having done the traditional course [38]. In this case, it may again not be ruled out that self-selection is implicated. Another reason for the lower crash risk after traditional courses may be that slower learning results in a more lasting impact than accelerated learning does [39] [40].

Coaching as teaching method

During traditional training, the candidate receives instructions on how to act and gets feedback. In the European HERMES project [41], however, coaching as a teaching method was investigated. This method does not imply giving instructions but asking questions. The driving instructor will for instance ask candidates: "You want to turn left here, how are you going to do this?" The candidates will say how. The driving instructor will not reply by saying what is right or wrong about their answers, but will only say: "Go ahead." Having completed the manoeuvre, the candidates will be asked what they could have done better. It is debatable whether coaching is suited to all candidates. It requires candidates to be able to reflect on their own performance. Whether the coaching method results in a lower crash risk after the acquisition of the driving licence is unknown.

11 What is a graduated driving licence and how effective is it?

Graduated licencing implies that prospective drivers first gain experience in safe conditions before being allowed to drive independently (and without restrictions). The more driving experience the candidates have, the more they are allowed to drive in less safe conditions. Several countries, including the United States, Canada, Australia and New-Zealand have this so-called 'graduated driver licensing' system.

Graduated licencing usually consist of three phases (for all forms of graduated licencing, candidates have to take a test to proceed to the next phase):

- 1. The learner phase.** In this phase, candidates can only drive while accompanied (also see the question [What is accompanied driving \(2toDrive\) and how effective is it?](#)). Supervisor and learner usually keep a logbook of the manoeuvres accomplished and how they were mastered by the learner. Often, the number of kilometres travelled is also logged. The learner phase lasts six months to a year.
- 2. The intermediate phase.** During the intermediate phase, a candidate is allowed to drive independently, but only in conditions with low crash risks. This phase almost always implies a prohibition on driving under the influence of even the slightest amount of alcohol. Often a prohibition on driving in the dark and driving accompanied by peer passengers also applies.
- 3. The provisional phase.** During this phase, the novice driver is allowed to drive independently without restrictions, but stricter rules (for instance about alcohol use or heightened strictness in demerit points) apply for these novice drivers than for experienced drivers (also see the question [What is the provisional licence and how effective is it?](#)). Having committed a traffic offense, the provisional licence holder may also be demoted to the intermediate phase.

In the Netherlands, phases 1 and 3 of graduated licencing have been implemented. The learner phase is voluntary for adolescents who want to pass their driving tests before their eighteenth birthday. The provisional licence applies to all novice (also older) drivers.

In countries and states that have implemented full graduated licencing, the number of serious crashes with 16-year-old car drivers has strongly decreased. The crash involvement for 17-year-olds has also decreased, but to a lesser extent. The decrease in number of crashes amongst 18- and 19-year-olds was very limited [42]. In a graduated licensing system, 16-year-olds and partly the 17-year-olds drive while accompanied. For 18- and 19-year-olds usually the provisional licence applies, meaning they are allowed to drive without restrictions, but still a stricter demerit points system applies. These results imply that graduated licencing reduces crash risk, but mostly because of less exposure to hazardous conditions rather than (much) improved driving competence.

12 What is accompanied driving (2toDrive) and how effective is it?

Accompanied driving implies that a novice driver is only allowed to drive under the supervision of an experienced driver. In the Netherlands, this measure has been introduced under the name of '2toDrive'. From 2011 to 2018 as an experiment and since the beginning of 2018 as a permanent measure. Adolescents may take driving lessons when they are 16,5 years old, and may take a driving test when they are 17. Until they are 18, however, they are only allowed to drive when accompanied. On account of the driving experience gained under supervision, they will – it is expected – be involved in fewer crashes than if they were allowed to drive independently.

An assessment of the 2toDrive experiment in 2015, on the basis of self-reporting, was inconclusive about its road safety effect [43]. The crash risk (the number of crashes for every kilometre travelled) of the 2toDrive-respondents was, however, significantly lower than that of respondents that did a regular training course. But the distance travelled since licence acquisition varied from person to person to such an extent that the difference in crash risk found might also be co-incidental. The effect of 2toDrive on self-reported violation behaviour was no more unambiguous. Previous assessment of 2toDrive [44] had, however, shown that the accompanied-driving phase was taken seriously and regular practising did actually occur. Most 2toDrivers do indeed practise regularly in different conditions (in rain, fog, and in the dark) and in different situations (on the motorway, in big cities). This means that the accompanied driving objective has been achieved; the goal being for young drivers to gain experience in relatively safe conditions (viz. when accompanied) before they participate in traffic by themselves. In other countries, for example Sweden and Germany, positive effects on the number of crashes have been reported, although there are other countries where no positive effects have been found, for instance in Norway and France (for an overview, see the archived SWOV fact sheet [Accompanied driving](#)). The number of kilometres driven while accompanied and the variation in circumstances (sufficient learning occasions) are aspects that are important to the effectiveness of accompanied driving.

13 What is the provisional licence and how effective is it?

In the first five years after acquisition of a first driving licence, in whatever category, a simple demerit point system applies. This is called provisional licencing. After two serious traffic violations, for which the provisional licence holder has been stopped, an investigation into his driving skills will follow. Effectiveness of provisional licencing seems limited and research has shown no deterring effect on novice drivers (general preventive effect) [45] [46].

The Netherlands have had provisional licencing since 2002. After its introduction, the number of serious crashes in the young driver group (a lot of whom have a provisional licence) has not decreased to a greater extent than the number in the slightly older group (of whom only a small percentage have a provisional licence). Nor was an effect demonstrated on the behaviour of novice drivers with a first demerit point (specific preventive effect) [45]. A supposedly important reason for the lack of effectivity might be that, in the Netherlands, only serious violations ascertained after stopping are registered. The probability of detection of this kind of violation is very low [47]. In addition quite a few novice drivers appear to be unaware of the (conditions of) provisional licencing, which lowers the preventive effect. Neither do all police stops result in a licence demerit point because of input 'leakage' in the procedures of police, public prosecution (CVOM in Dutch) and the Dutch Driving Test Organisation (CBR in Dutch) [46].

Since 2006, a reduced alcohol limit of 0,2 g/l has applied to novice drivers. Data on the 4-year periods before and after introduction of the reduced limit (between 2002 and 2010) show that alcohol consumption of young drivers did not decrease to a higher extent than that of older drivers [48]. Therefore, this measure did again not result in a positive effect on road safety; possibly once more because of the low detection probability.

14 Can driver training in the Netherlands be further improved?

Measures often mentioned to improve driver training in the Netherlands are the introduction of full graduated licencing, training hazard perception and comprehensive advanced training courses for novice drivers, focusing on traffic insight and self-awareness. Below these measures and their prospective effectiveness are described.

Graduated licencing

The Netherlands have already introduced two phases of the graduated driving licence (also see the question [What is a graduated driving licence and how effective is it?](#)):

- a learner phase (accompanied driving: 2toDrive) during which, after licence acquisition, a novice driver can learn to drive while being accompanied;
- a provisional licence, which implies a novice driver is allowed to drive independently while adhering to stricter rules.

The introduction of an intermediate phase, which would imply that adolescents are only allowed to drive in relatively safe conditions (for instance no alcohol, no peer passengers) might result in risk reduction for novice drivers [49]. This phase would allow the novice driver more time to practise and to gain experience in traffic conditions that are not inherently risk-increasing. Road safety effects of graduated licencing are mainly to be expected as a consequence of postponed exposure to hazardous road conditions and of accompanied driving; there is less strong evidence to suggest that adolescents improve their driving skills on account of graduated licencing [42].

Training hazard perception

Training hazard perception may improve observation behaviour of novice drivers and, thus, reduce crash risk (also see the question [How useful is hazard perception as part of driver training and driving test?](#)). Interactive training programs for laptops or tablets are available for training hazard perception. Taking a training course could be stimulated more often. This training course should ideally also have a feedback component, which would result in more awareness about one's own hazard perception in relation to other road users [50].

Additional novice training courses

In a European context, quite some attention has been paid to additional training courses after licence acquisition (also see the question [How useful is additional training after licence acquisition?](#)). Many of these courses were not shown to have any effect on crash risk for novice drivers. One of the reasons for this lack of effect is that training may result in overconfidence. A comprehensive advanced training course focusing on traffic insight and self-awareness could have a positive impact. The advanced training course in Austria is an example of such a course. It is, however, a rather intense course which requires novice drivers to return for a training day six times in two years. The course offers driving skill analysis, group discussion and road safety training [31]. In addition, a general training for adolescents in order to reduce risk behaviour and increase resilience (also paying attention to road safety behaviour) may also have a positive impact on crash risk for novice drivers in the Netherlands [33].

Publications and sources

Below you will find the list of references that are used in this fact sheet; all sources can be consulted or retrieved. Via [Publications](#) you can find more literature on the subject of road safety.

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