

Report nr. 2018-R-17-SEN

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Implications of reducing the minimum motorcycle riding age in Belgium -
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Authors: Heike Martensen, Jonas Wahl, Freya Sloomans

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The original report is in Dutch. Al een A1 rijbewijs op je 16de? Consequenties van een verlaging van de beginleeftijd voor motorrijders in België.

Ce résumé est également disponible en français sous le titre: Un permis A1 dès l'âge de 16 ans? Conséquences de l'abaissement de l'âge minimum pour conduire une moto en Belgique.

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Context and research question

The minimum age in the 3rd European Driving Licence Directive 2006/126 (3DLD) for riding A1 motorcycles is 16 years. However, the Directive allows European member countries to raise this minimum age by up to two years. In Belgium it had been decided to set this minimum age at 18 before the 3DLD. This has not changed since then.

There are four types of driving licences for powered two-wheelers:

- AM for mopeds¹ (max. cylinder capacity 50cc, max. speed 45 km/h)
- A1 for light motorcycles (max 125cc, 11kW)
- A2 for motorcycles with max 35 kW (this may be a reduced motorcycle with max 70 kW)
- A for all types of motorcycles

In this report, we will focus on the licences for motorcycling, i.e. A1, A2, and A. In most European countries the A1 licence can be obtained from the age of 16, A2 can be obtained after two years of experience with A1, so (at the earliest) from the age of 18. The unlimited driving licence A can be acquired in two ways: (1) per progressive access: after two years of experience with A2 (i.e. from 20 years); or (2) per direct access without previous experience with lighter vehicles from 24 years. We call this model *early access model* because for each type of driving licence access is at the earliest possible age.

In countries with a *late access model*, obtaining A1, A2 and A licences (for progressive access) is each postponed by two years. However, direct access to the full licence A is maintained at 24 years. This principle is applied in the Netherlands, Belgium, Denmark, Greece and Malta. In the UK and Serbia, a compromise model is applied where all ages are shifted by 1 year and A1 driving licences can be obtained at 17 years of age (A1@17).

Driving schools and citizens in Belgium have repeatedly asked for the minimum age to be lowered to 16 years. In this report we investigate what consequences can be expected for Belgium if the age for A1 would drop to 16 and Belgium would become an Early-Access country.

Findings from international literature regarding the starting age

An exceptionally high risk for 16 year old motorcyclists has been found in several countries, usually an increase compared to the other age-groups by a factor 3. This may be due to young age or lack of experience. Studies in Norway and the United Kingdom that were able to distinguish between these two factors found the following: the younger one starts, the higher your beginner's risk is. As with young car-drivers, age and experience play an important role in the accident risk of young motorcyclists. But while for car-drivers experience is more important than age, this is the other way round for motorcyclists. So, for the risk of young motorcyclists it matters a lot at which age they start.

How popular is the A1 licence in Belgium and other countries?

The popularity of motorcycle riding - defined as the number of licences per 1000 inhabitants - was calculated for 3 age categories (16-17; 18-19; 20-21) in 9 European countries (BE, AT, NL, EL, AT, FI, SE, NO, RS). The *average* popularity of motorcycles in the beginner category (16-17 for Early Access and 18-19 for Late-Access) proved almost identical for the Early- and Late-Access countries studied, however countries within these two groups differ strongly. In tendency, in Early-Access countries the popularity in the later age categories decreases strongly, while in Late-Access countries the driving licences obtained are distributed more or less equally across the age groups 18-19 and 20-21.

In Belgium, the popularity of motorcycles is relatively small. In our country, in the Netherlands, Sweden, and Serbia only between 2-3 out of every 1000 youngsters obtains an A1 licence within the first two years where this is allowed, whereas in Norway and Germany this is around 20 in 1000 and in Finland even more than 70 in 1000. In Belgium, the popularity remains relatively low, even among the 20-22 year olds.

¹ Mopeds also include speed pedelecs or fast electric bikes. Persons in possession of an A or B license may drive a moped without having obtained an AM license.

Victims among young motorcyclists in Europe

The following table shows the share of young motorcyclists among the total number of motorcycle casualties. For example, the 10% in the upper left indicates that in countries with Early Access (i.e. driving licences from 16) an average of 10% of all injured motorcyclists are 16 or 17 years old.

Average share of young motorcyclists among the total of motorcycle casualties in Early- and Late-Access countries

	Injured			Killed (30 days)		
	16-17 year	18-19 year	20-21 year	16-17 year	18-19 year	20-21 year
Early Access	10%	5%	5%	4%	4%	5%
Late Access	1%	2%	5%	1%	3%	5%

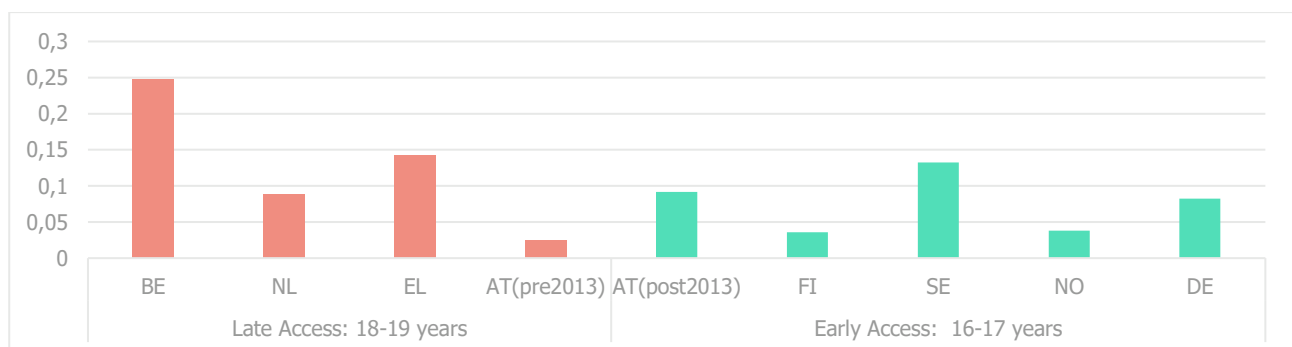
Source: CARE, 2007-2016

The table illustrates that the share of young motorcyclists among the total number of *injured* motorcyclists in the Early-Access countries is higher than in the Late-Access countries. Of course this is the case for the 16- to- 17-year-olds, where the share in the Early-Access countries is 10% and in the Late-Access countries only 1%. This is to be expected, because in the Late-Access countries, this age group is not allowed to ride a motorcycle at all. However, the difference is not compensated in the 18-19 age group, where one is allowed to start riding in the Late-Access countries. Despite the fact that these are the beginners in the Late-Access countries, the share of 18- to- 19-year-olds is still higher in Early-Access countries (5%) than in the Late-Access countries (2%). Only among 20- to 21-year-olds the average percentage is the same for both types of countries (5%). We must therefore conclude that in the Early-Access countries, young motorcyclists between 16 and 21 years of age have a larger share of the total number of casualties (20%) than in the Late-Access countries (8%).

For the share of these age categories in the total number of motorcycle *fatalities*, we see a similar pattern as for the injured, even though the differences between Early- and Late-Access countries are smaller.

The scientific literature and the accident numbers among young motorcyclists in Europe both suggest that an early start is disadvantageous. In the following we have investigated this hypothesis in the example of Austria. Until 2012, motorcycling in Austria was only allowed from 18 years of age; Austria was therefore a Late Access country. After the driving licence reform, the A1 riding licence for 16 year-olds was introduced and Austria became an Early-Access country. This makes it particularly interesting to investigate the effect of this change in Austria.

Injured motorcyclists per 100 issued licences in the first 2 years in which motorcycling is allowed



Source: injured CARE, riding licences issued: national data.

The risk per licence obtained

First, we have placed Austria in the context of other Early- and Late-Access countries. In the following graph we show the number of injured motorcyclists per 100 newly issued riding licences per country. For the sake of comparability, we only compare the age groups of beginners (Early Access: 16-17 years; Late Access: 18-19 years). For Austria, the data are split between the period before 2013 (Late Access) and from 2013 on (Early Access).

The risk per 100 issued licences varies widely between countries so that it is difficult to identify systematic differences between Early-Access and Late-Access countries.

In Austria, the injury-risk for the 16-17 year old beginners (after the driving licence reform) is almost 10 times higher than that for the 18-19 year old beginners (before the driving licence reform). In Belgium, the injury risk among the 18- to 19-year-olds is particularly high, even now.

Austria: from Late- to Early Access

In Austria, the riding licence for A1 motorcycles with 16 years of age was introduced in 2013. The increase in the number of casualties was limited despite the dramatic increase in beginners' risk, because the number of driving licences issued was not very high. The reform has resulted in an additional 150 injuries and 2 deaths per year. Mopeds are much more popular among young people. The number of injured moped riders at that age is even now - after the increase in motorcycle injuries due to the introduction of A1 at the age of 16 - still at least 7 times higher than among motorcyclists. The number of injured moped riders has continuously decreased since 2007. Apart from this general downward trend, there is no evidence of an additional decrease among injured moped riders due to a switch to A1 motorcycles. Also for the other modes of transport, there is no decrease (or increase) in the number of injured 16- to 17-year-olds due to the introduction of the A1 licence. The same applies to injured motorcyclists between 18 and 19.

We have to conclude that the introduction of an A1 licence at 16 years was not good for road safety. 150 casualties and 2 fatalities were added annually and are not compensated by decreases in other modes of transport or older age groups. Due to the relatively low popularity of A1 licences among young people, the consequences are limited in comparison to the number of victims with the much more popular mopeds, but the risk per licence among this new generation of motorcyclists is very high.

Austria: the risk for moped and A1 riders among 16- to 17- year-olds

An argument often invoked for early access to A1 is that interested 16- to 17-year-olds will otherwise ride a moped, which could be even more dangerous because hardly any training is required.

In Austria, the introduction of the A1 from 16 years was carefully prepared. A risk management course for young riders was developed to deal with the presumably risky behaviour of 16 to 17 year-olds. In Austria, all young motorcyclists now receive a module "Risikokompetenz" as part of their training where youngsters are taught to better identify and anticipate risky situations.

The exemplary training in Austria for the 16- to 17- year old A1 riders, could therefore have led to a lower risk for motorcyclists as compared to the moped riders of the same age. However, injury risk of 16- to 17-year-old motorcyclists turned out to be 2 to 3 times as high as that of their moped riding peers. The fatality risk is even 10 times higher.

The effect of training

We do not have a systematic investigation of different training methods and their effect. But the training in Austria seems to have been developed and implemented with great care. Nevertheless, we see a strongly increased risk of the 16-year-old A1 motorcyclists (both compared to the 18-year-old beginners before 2013 as well as to the moped riders). While the Austrian training has a strong focus on risk management, the training in Belgium is mainly focused on practical driving skills. It is therefore uncertain whether we would not observe an even greater increase in risk in Belgium as compared to Austria.

Do young starters eventually become safer motorcyclists?

A potential argument for the A1 driving licence at 16 is the idea that an early start ultimately leads to better riders. The assumption is that the younger we start, the better our skills will eventually develop. To investigate this, we surveyed 80 motorcyclists who had been involved in an accident registered in the German GIDAS accident data-base. We asked them about their driving licence careers and possible other accidents. The motorcyclists who had started early (at 16 or 17) had slightly more accidents than those who started later, but the accidents were on average slightly less severe. None of the differences was significant. There was also no difference in culpability (i.e. who was held responsible for the accident). Among early beginners 54% were held liable, among later beginners 51%. This difference was also not significant. In summary, there was no indication that motorcyclists who started at 16 or 17 years ride more safely than other motorcyclists.

An estimate for Belgium

Based on the observed development in Austria, we have estimated the consequences of bringing forward access to the A1 motorcycle licence (and subsequently also to A2 and A) in Belgium. We expect an increase in the number of road casualties, mainly because of the sharp increase in the risk among 16- to 17-year-old beginners (after 2013) as compared to 18-19-year-old beginners (before 2013) in Austria. If we assume that Belgian beginners would experience the same increase in risk, we expect an increase in the number of casualties and even deaths, especially among 16- to 17-year-old motorcyclists. For the older age groups (18-19) and (20-21) we expect a slightly reduced risk and therefore a slight decrease in the number of casualties, which however cannot compensate for the increase among the 16- to 17-year-olds.

The order of magnitude of the expected increases also depends on the development of motorcycle popularity. We have estimated the number of expected casualties for 2 Scenarios: 1.) Unchanging popularity and 2.) Popularity rises back to the level before the driving licence reform.

The magnitude of the expected increases also depends on the popularity of motorcycling. In the first scenario it is assumed that the total number of licences does not change. However, those in favour of bringing the starting age down hope that a start with 16 will make the progressive access to the motorcycle licence more attractive to young people. In the second scenario, we therefore estimate the number of casualties as popularity of motorcycling increases.

Scenario 1: Unchanged popularity

Annual increase in fatalities: 1 to 2

Annual increase in injuries: approx. 400, of which 20 are seriously injured.

Scenario 2: Popularity rises back to pre-3DLD levels

Annual increase in fatalities: 5 to 10

Annual increase in injuries: about 1000, of which 50 are seriously injured

Conclusion

The introduction of the A1 motorcycle licence at the age of 16 would not be good for road safety. The accident risks for the group of 16-17-year-olds with such a licence would be higher than (1) the risk of 18- to-19- year old motorcyclists and (2) the risk of 16- to 17- year old moped riders. Moreover, in Belgium, the risks in the beginners' group are particularly high already. We expect annually 1-2 extra deaths and about 400 extra injuries (including 20 severe injuries), if the popularity (measured by the number of driving licences) would remain the same as between 2014 and 2017.

However, it is possible that motorcycling becomes more popular among young people with an Early-Access model. This is at least what supporters of an early start hope. If popularity rises back to the level before the 3DLD (2008-2011), we should expect 5 to 10 extra deaths and about 1000 extra injuries (including 50 severe injuries).

There is no evidence for road-safety benefits due to an early start with the motorcycle, such as a reduction of casualties in other transport modes, greater safety of A1 riders compared to moped riders (presumably thanks to the extra training) or greater safety of older motorcyclists who started riding early.