
Summary:

Increased licensing age for light motorcycles?

Potential traffic safety effects

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Increasing the age limit for obtaining a light motorcycle driver's licence from 16 to 18 years is expected to result in a considerable reduction in crash involvement among 16- and 17-year-old riders of powered two-wheelers and three- or four-wheeled mopeds. For crashes resulting in death or severe injury the reduction is estimated at about 34 %. If the age limit were increased, only about half of those who prefer a light motorcycle, would consider choosing a moped instead. The results are based on an internet survey among around 3500 16- and 17-year-old holders of a moped or light motorcycle licence.

The Norwegian Public Roads Administration are consider increasing the age limit for light motorcycles (category A1) from 16 to 18 years, due to the high crash risk among 16- and 17-year-old riders of such vehicles. In addition, it has been proposed to lower the age limit for 3- and 4-wheeled mopeds (included moped cars and ATVs) between 150 and 350 kg (category AM147) to 16 years. The age limit for this category is now 18 years, whereas 3- and 4-wheeled mopeds below 150 kg (category AM146) already have a 16-year limit.

The main purpose of the project presented in this report is to estimate potential traffic safety effects of these changes. Basic requirements for the estimation are knowledge about the accident numbers for both mopeds and light motorcycles and assumptions regarding effects of the changes on total riding distance for mopeds.

The project comprises the following parts:

1. Review of research on crashes involving 3- or 4-wheeled mopeds/motorcycles.
2. A survey about preferences for alternative vehicle choices in the event of changed age limits.
3. Estimation of crash risk among 16- and 17-year old licence holders for moped and light motorcycle.
4. Estimation of possible effects of changed age limits, based on accident statistics and results from the survey.

There are no available Norwegian risk estimates for 3- and 4-wheeled mopeds. Several international studies indicate a particularly high crash risk for 3-wheeled as compared to 4-wheeled mopeds. However, these studies do not differentiate between vehicles registered as mopeds vs. motorcycles. Furthermore, they do not present risk estimates for the different types of such vehicles. Consequently, since we do not have access to risk estimates for different types of mopeds, our estimates are

based on an assumption of equal risk for 2-, 3-, and 4-wheeled mopeds, as well as for moped cars.

The survey showed that about half of light motorcycle licence holders would consider choosing a moped if the age limit were increased. The preferences are about equally distributed among moped car, 2-wheeled moped, and ATV.

Among moped licence holders only one in four would consider changing from 2-wheeled moped to moped car or ATV if the licensing age for these vehicles were reduced. The most popular alternative is moped car, which would possibly be chosen by 14 % of moped licence holders. Only 3.5 % replied “certainly” to the question about probability of choosing a moped car.

Regarding current crash involvement, the survey showed that the average number of crashes (with property damage or personal injury) per rider year was 0.31 for moped and 0.34 for light motorcycle. Average annual riding distances were 3242 km and 7774 km, respectively. These crash and exposure figures correspond to a crash risk of 101.2 crashes per million km for moped and 43.4 for light motorcycle.

The percentage of licence holders involved in personal injury crashes was 7.3 % for moped and 11.2 % for light motorcycle. This corresponds to a risk of 23.9 crash-involved drivers per million km for moped and 14.3 for light motorcycle.

There are no previous estimates comparable to these risk estimates for 16- and 17-year old moped riders. For light motorcycle riders, however, there are previous estimates that correspond fairly well to the figures found in our study.

A possible explanation of the higher crash risk for mopeds as compared to light motorcycles could be that mopeds are used relatively more in urban areas, with larger traffic volumes. It should also be noted that even if the risk estimates are lower for light motorcycles, the relative crash severity is higher, i.e., a higher proportion of the reported crashes result in injury to persons. This is to be expected, since light motorcycles have a considerably higher maximum speed than mopeds.

For estimating effects of changed age limits on number of crashes, we assume that all crashes involving 16- and 17-year-old riders of light motorcycles are eliminated. Further, based on survey results, it is assumed that 51 % of those who prefer a light motorcycle with current age limits would change to moped if licensing age was reduced. The increase in moped crashes is assumed to be directly proportional to the increase in the moped rider population caused by the shift from light motorcycles. Finally, we assume that the reduced age limit for 3- and 4-wheeled mopeds does not result in any change in the total number of mopeds, but just a change in the distribution between different types of mopeds.

The expected annual number of personal injury crashes among 16- and 17-year old riders of powered two-wheelers with current licensing age limits is estimated to be 173 moped crashes and 69 light motorcycle crashes, i.e., a total of 242 personal injury crashes. Based on the assumptions above, increasing the licensing age for light motorcycles to 18 years is expected to result in 15 additional moped crashes per year. Combined with the elimination of 69 crashes with light motorcycles, this means a net decrease of 54 personal injury crashes per year. This estimate does not consider the risk entailed by alternative transport for the group of light motorcycle riders who will not change to moped. We assume, however, that this risk is very low compared to that of riding a light motorcycle, and consequently this effect will not have any notable effect on our estimate. A possible bias in the opposite direction is that our

estimate of change from light motorcycle to moped includes riders who said they would “possibly”, “probably” or “certainly” have shifted to moped. If we had included only those who answered “certainly”, the estimated decrease in crashes would have been considerably larger.

A corresponding estimation for crashes with killed or severely injured persons yielded a total decrease by 11 crashes per year.

These estimates imply that the percentage change in crashes among 16- and 17-year old riders of powered two-wheelers is 22 % for all personal injury crashes and 34 % for crashes involving killed or severely injured persons.

For future risk estimations there is a need for separate crash and exposure statistics for different types of mopeds.