

## E-Scooters: What do they mean for the safety of cyclists?

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### Background:

As in many European cities, the popularity of e-microscooters is also rapidly growing in larger cities in Austria. On June 1, 2019 special rules for e-microscooters were introduced, stating that users of e-microscooters are obligated to follow the rules for cyclists and to use bicycle infrastructure (if available). With an increasing number of e-microscooters on the roads and the introduction of new legal regulations, many new questions with respect to road safety arise, e.g. “What are the causes of e-microscooter accidents and conflicts with other road users, especially cyclists and pedestrians?”, “What measures can be taken to increase the road safety of e-microscooter users themselves and other road users?” There are currently only a few international studies on accidents and behaviour of e-microscooter users with respect to road safety. In order to extend the knowledge on this topic as well as to collect basic road safety data on e-microscooters in Austria, the KFV (Austrian Road Safety Board) decided to carry out an extensive e-microscooter study in 2019.

### Aim:

The aim of the project was to analyse existing legal regulations and accidents statistics as well as to collect new data concerning behaviour and knowledge of e-microscooter users in Austria. Based on the new data and findings, measures to increase road safety for both, e-microscooters and other road users (especially cyclists and pedestrians) should be developed.

### Method:

The methods used are:

- 1) analysis of existing data on e-microscooters (e.g. accidents, legal regulations)
- 2) online and face-to-face-surveys among 501 e-microscooter users and 598 non-users regarding personal experiences, user attitudes and behaviour, legal knowledge
- 3) on-site observations among 1.500 e-microscooter users (e.g. speed behaviour, used infrastructure, helmet wearing rate, conflicts with cyclists and pedestrians)
- 4) field tests concerning e-microscooter brakes

### Results:

Analyses of e-microscooter accidents in the KFV Injury Database (IDB) and of media reports covering this topic showed a clear increase in the number of e-microscooter accidents in Austria since 2015 (going hand in hand with an increasing number of e-microscooters on Austrian roads). In 2020, around 1,300 e-scooter riders in Austria suffered severe injuries in e-scooter accidents that required hospital treatment.

The survey of 501 e-microscooter users and 598 non-users showed that both groups are not sufficiently informed about the applicable legal regulations on e-microscooters. The respondents perceive conflicts and accidents especially between e-microscooter users and cyclists and pedestrians. The perceived conflicts include carelessness / distraction, disregard of traffic rules, excessive speeds and insufficient safety distances.

Speed measurements of more than 900 e-microscooter users show, that they drive at an average speed of 15 km/h and therefore somewhat slower than cyclists (average: 17 km/h). Both, e-microscooter users and cyclists, significantly exceed the legally permitted speed limit of 10 km/h when approaching a cyclist crossing.

If a cycle path is available, 73% of the observed e-microscooter users use the cycle path; the others drive on the sidewalk (23%) or the road (4%).

The helmet wearing rate among the 1,507 e-scooter users observed in Vienna was 3% and is therefore significantly lower than for cyclists (approx. 25%).

Field tests for e-microscooters and a bicycle showed clear differences in the braking deceleration of e-microscooters and a bicycle.

### Conclusions:

The increasing number of accidents and the results of the present study show that there is a need for action to increase road safety of e-microscooter riders and other road users, especially cyclists and pedestrians. Thus, it is necessary to discuss measures in the areas of legislation, awareness raising and training, infrastructure, controls and sanctions.