

Cycling accidents in the Netherlands

An overview of risks, injuries, causes and consequences for policy makers



Karin Klein Wolt, Consumer Safety Institute, the Netherlands
Susanne Nijman, Consumer Safety Institute, the Netherlands
Huib Valkenberg, Consumer Safety Institute, the Netherlands

k.kleinwolt@veiligheid.nl
 s.nijman@veiligheid.nl
 h.valkenberg@veiligheid.nl

www.veiligheid.nl/en



Background and aim

- In the Netherlands the total annual distance travelled by bike is 14,5 billion kilometers.
- There is an increasing use of electric bicycles up to 25 km/h.
- Common belief is that the electric bicycle is more dangerous and that smartphone use causes cycling accidents.
- Most people treated at an ED due to a traffic injury in 2017 are cyclists (**see figure 1**).
- The Dutch Injury Surveillance System (DISS) monitors accidents and injuries at 14 ED's. DISS is representative and provides the possibility to perform follow up studies with patients.
- Aim: new insights in accidents and injuries, especially with electric bicycles and smartphone use.

Method

- DISS follow up study: case control study.
- Retrospective questionnaire (paper and online).
- Case: patients who visited one of the DISS ED's after a cycling accident in 2016 (N=3.146; response rate: 37%).
- Control: with cyclists who did not have a bicycle accident in 2016 (N=1.811; response rate: 54%).

Key results

- Most accidents happen with 4-17 year and 55-74 year olds.
- The number of accidents per kilometer travelled increases with age (**see figure 2**).
- Cyclists on an electric bicycle seem more likely to be treated at an ED, but this difference disappears after controlling for distance travelled.
- Injury severity does not differ between cyclists using an electric and a classic bicycle, after controlling for age.
- Smartphone use at the moment of the accident was seldom mentioned (**see table 1**).
- Behaviour plays an important role as well as conditions of the road (**see figure 3**).

Conclusions

- The electric bicycle does not lead to more accidents than a classic bicycle.
- The risk of a cycling accident increases with age.
- The use of the smartphone does not often lead to cycling accidents that have to be treated at an ED.
- Prevention should be focusing on behaviour (awareness) and conditions of the road.



Figure 1: ED visits with serious injuries after traffic accidents (2008-2017)

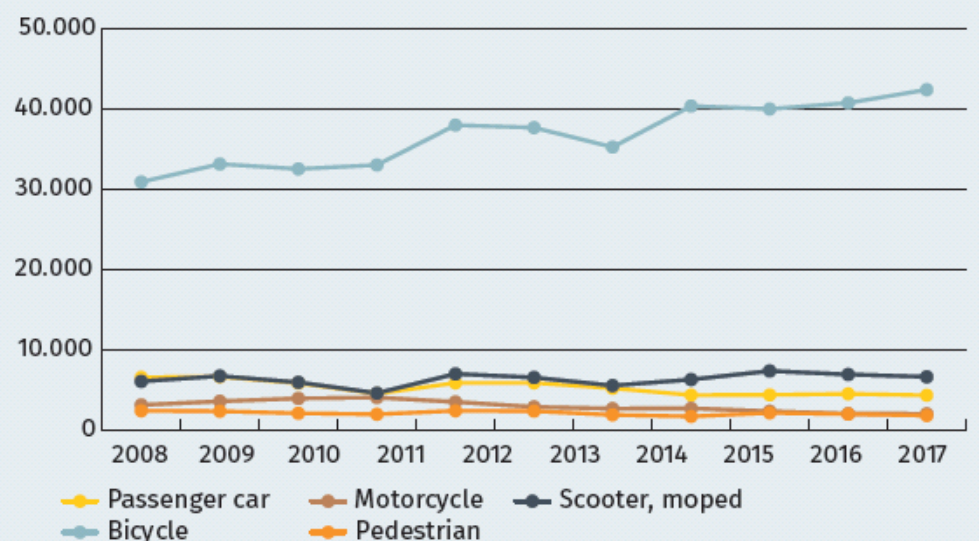


Figure 2: Cycling injuries by age, sex and total distance travelled

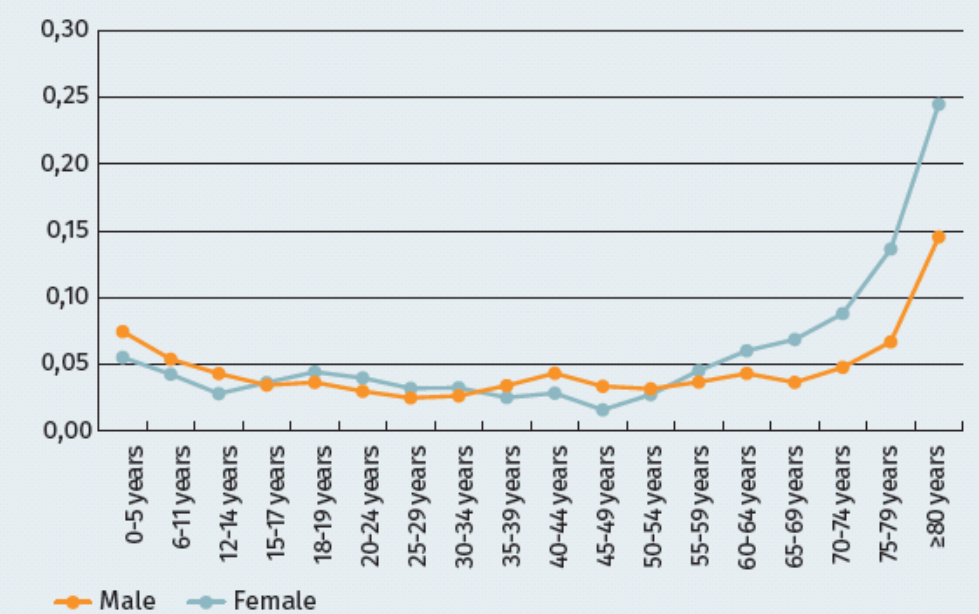


Figure 3: Causes of accidents

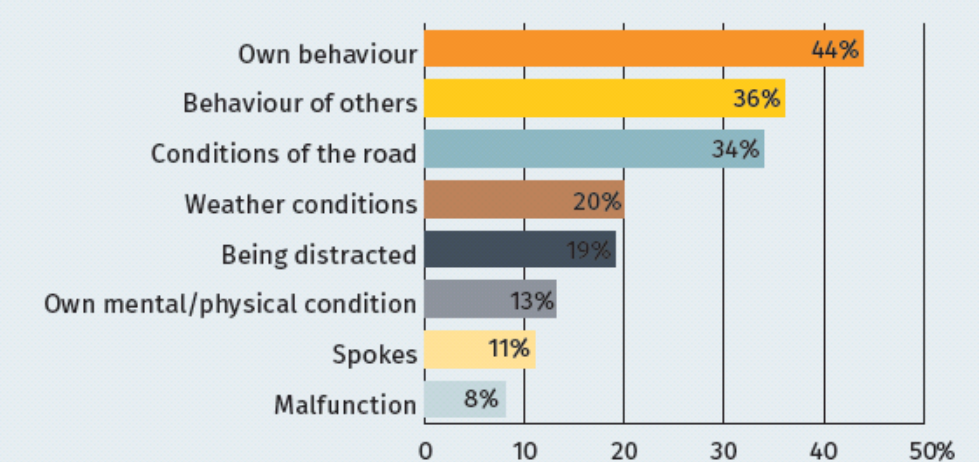


Table 1: Pursuits at the time of the accident

	< 25 years		≥ 25 years		Total	
	n	%	n	%	n	%
On the phone handheld (holding phone to ear)	4	0,3%	5	0,3%	9	0,3%
On the phone handsfree	0	0,0%	2	0,1%	2	0,1%
Busy texting/chatting/etc.	8	0,8%	1	0,0%	9	0,3%
Busy doing other things on the phone (mail, google, surfing,...)	9	0,9%	8	0,4%	17	0,6%
Total phone	21	1,9%	16	0,8%	37	1,2%
Listening to music/wearing headphones	70	6%	32	2%	102	3%
Talking to someone I was cycling with	232	21%	122	6%	354	11%
A distracted mind (thinking about something)	45	4%	74	4%	119	4%