

Improving the safety of e-scooters

PIN Talk | 13 May 2025

PIN Programme

- ✓ Experts from the 32 participating countries, including all EU Member States
- ✓ Steering group
- ✓ Project team in ETSC
- ✓ 48 PIN Flash reports published
- ✓ 4 PIN Talks each year

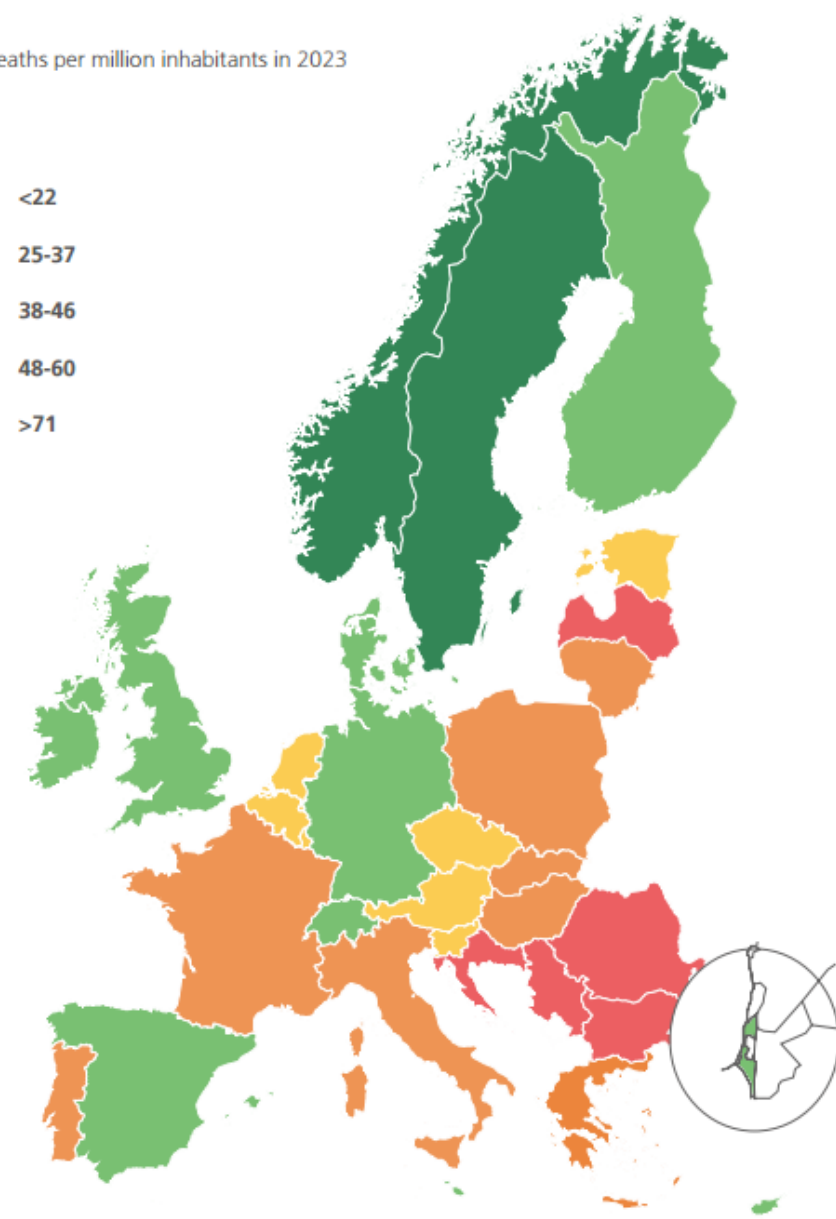
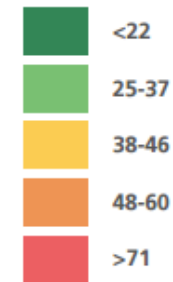


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Road deaths per million inhabitants in 2023





PIN Flash Report 47

Improving the road safety of e-scooters

Published in November 2024

Data

- E-scooters relatively new form of mobility
- They are now permitted in most European countries, with the UK and the Netherlands notable exceptions
- **27** out of the **32** PIN countries collect data on collisions involving e-scooters
- Full picture is difficult to obtain



Data

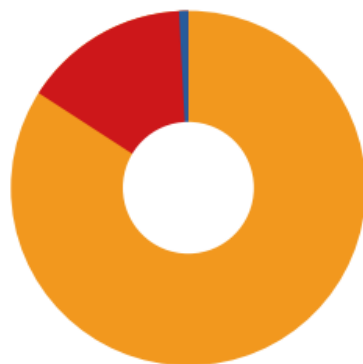
119 KILLED
IN COLLISIONS
INVOLVING AN
E-SCOOTER
IN **2022**



5,867 SERIOUSLY
INJURED IN **E-SCOOTER**
COLLISIONS
IN **2022**



MALE AND FEMALE MOTORISED MICRO-MOBILITY
DEVICE RIDERS KILLED IN 2022



100
Male



18
Female

* 1 Unknown

- Little to no data on the distance travelled nor the fleet size.
- Underreporting
- Micro-mobility road risk assessments outdated

Regulating e-scooters

- Unified safety standards for micro-mobility devices do not yet exist at the EU level.
- Manufacturers currently self-certify before selling them on the EU market.
- Germany and Spain have introduced legislation on technical standards.



Regulating e-scooters

Speed

- Limited within the vehicle
- National speed limit (+ enforcement)
- Shared e-scooter providers can:
 - Limit the maximum speed of the vehicle
 - Deploy geofencing technology
- **31** out of the **32** PIN countries restrict speed.
- In some countries - 6 km/h limit in pedestrian zones or on pavements.



Source: DVR/Tina Merkau (2024)

Regulating e-scooters

Power and acceleration

- A limit on the maximum motor power can control speed and acceleration.
- **19** out of the **32** PIN countries have set a maximum power for e-scooters.
- An alternative could be to limit the acceleration of e-scooters.

Standard **EN17128** proposes
a maximum acceleration of
 2m/s^2

Maximum power allowed				
250W	400W	500W	600W	1000W
Czechia	Ireland	Germany	Austria	Estonia
Israel		Italy	Croatia	Finland
Luxembourg		Switzerland	Serbia	Latvia
Portugal		United Kingdom ⁽¹⁾		Lithuania
Sweden				Spain
Slovakia				

Regulating e-scooters

E-scooter stability

- Performance-based tests of e-scooter stability

Braking and deceleration

- E-scooters have been found to be unstable when decelerating.
- Minimum deceleration capacity of $3,5 \text{ m/s}^2$? (Germany's eKFV Regulation).
- Testing e-scooters braking capabilities through performance-based braking tests.



Road rules for e-scooter riders

Alcohol and/or drugs

- Alcohol is a risk factor in up to 40% of e-scooter deaths.
- **24** PIN countries have a legal alcohol limit for riding an e-scooter.

Table 9.
Legal alcohol
limit for riding
an e-scooter

Alcohol limit for e-scooter riders				
0.0 g/l	0.2 g/l	0.5 g/l	0.8 g/l	No limit
Czechia	Norway	Belgium	Austria	Finland
Lithuania	Serbia	Bulgaria	United Kingdom	Sweden ⁽⁵⁾
	Poland	Croatia		
		Cyprus		
		Germany ⁽¹⁾		
		Denmark		
		France		
		Greece		
		Israel ⁽²⁾		
		Italy		
		Luxembourg		
		Latvia		
		Portugal		
		Slovakia ⁽³⁾		
		Slovenia		
		Spain ⁽⁴⁾		
		Switzerland		

Road rules for e-scooter riders

Helmets

- Up to a third of all injuries sustained by e-scooter riders are head injuries.
- In **20** PIN countries it is mandatory for some, or all, e-scooter riders to wear a helmet.

Passengers

- Between 2% to 5% of all observed trips involve two riders on a single e-scooter.
- 32% of e-scooter riders in 22 countries admitted to tandem riding.



HELMET WEARING RATES AMONG
E-SCOOTER RIDERS VARIES BETWEEN

7% - 69%

Road rules for e-scooter riders

Minimum age

- Young people can display risky behaviours and have a diminished appreciation of the hazards that they face.
- **26** PIN countries have set a minimum age for riding an e-scooter.

Minimum age to ride an e-scooter					
10	12	14	15	16	none
Luxembourg	Austria ⁽¹⁾	Bulgaria ⁽²⁾	Denmark ⁽³⁾	Belgium	Czechia ⁽⁴⁾
Poland ⁽⁵⁾	Norway	Croatia	Greece ⁽⁶⁾	Ireland	Estonia
		Cyprus	Slovakia ⁽⁷⁾	Israel	Finland
		France		Lithuania ⁽⁸⁾	Hungary
		Germany		Netherlands	Portugal
		Italy		United Kingdom ⁽⁹⁾	Sweden
		Latvia			
		Romania			
		Slovenia ⁽¹⁰⁾			
		Serbia			
		Spain ⁽¹¹⁾			
		Switzerland ⁽¹²⁾			



Regulating e-scooters

Lighting - 23 PIN countries report regulating e-scooter lighting requirements.

Tampering - extent of tampering not known

Audible warning - 13 PIN countries regulate on the need for audible warning.

EU vehicle safety legislation - can they identify e-scooter riders correctly?



Infrastructure for vulnerable road users

- ✓ 30 km/h vehicle speeds
- ✓ Safe infrastructure
- ✗ Riding on pavements

**DON'T JUST
LEAVE
ME STANDING
THERE.**



Source: DVR/BMDV/DGUV (2024)

Recommendations

ETSC'S RECOMMENDATIONS



Speed limited to 20 km/h



Helmet required



Minimum age of 16



Safe infrastructure



No alcohol



30 km/h speed limit

Thank you!



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