

The safety of private e-scooters



24 March 2022

Funded by



Making Roads Safer

Overview

- The evolution of e-scooters
- Rental & private e-scooters
- Assessing safety
- European experience
- UK e-scooter casualties
- Other road users
- Crash testing
- PACTS recommendations



The evolution of e-scooters

2-wheelers have developed over the last 200 years from balance bikes to e-scooters.

1817 – the velocipede
1915 – the autoped
1980s – kick scooters
early 2000s – e-scooters



Rental & private e-scooters are not the same

Since July 2020, operator owned e-scooters have been available through regulated rental schemes in England

Private e-scooters are legal to purchase in the UK, but are **illegal** to use in public places



Rental & private e-scooters are not the same

Operator owned e-scooters are regulated for speed (15.5mph), power (500W), and rider requirements (16 years, no pavement riding, passengers forbidden)

Private e-scooters are classified as motor-vehicles but do not need to meet any standards

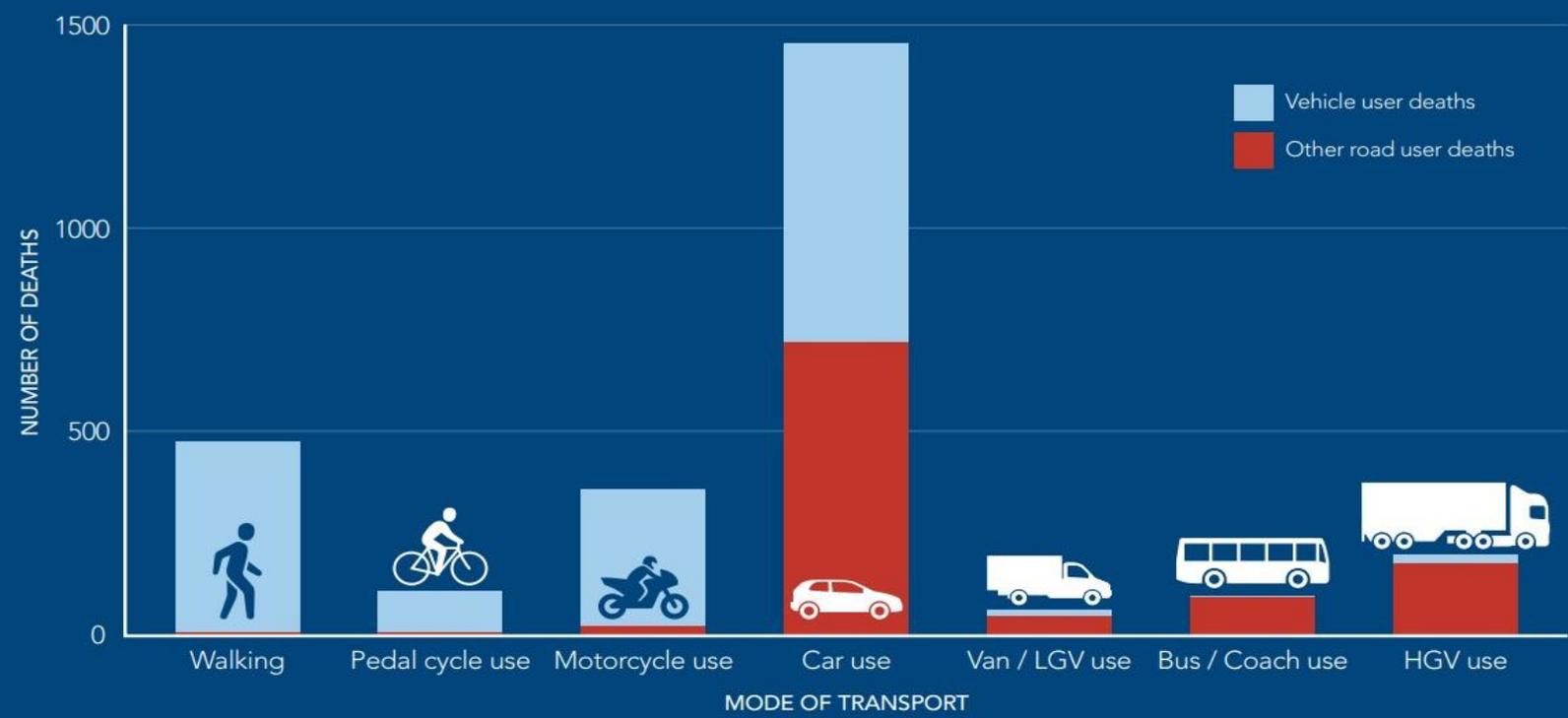


Assessing the safety of e-scooters

Activities can be defined as
 “hazardous”
 (risking death/injury to the user)
 or “dangerous”
 (risking danger to others)

Total deaths involved in each mode of transport

All deaths involved with each mode, showing **vehicle user deaths** and **other road user deaths**



Source: Road deaths in Great Britain in 2019 (DfT, 2020)

European experience

In many countries e-scooters are regulated for speed (some 15.5mph, many 12.5mph), power (250-1000W), and rider requirements (12-16 years, no pavement riding, passengers forbidden)

Riders are most often injured after falling from their e-scooter

Helmet wearing is being made mandatory in more countries



UK e-scooter casualties - numbers

Since 2019 there have been 16 fatalities

In 2020, 484 casualties were recorded

In 2021, nearly 900 casualties were recorded

Under-reporting is substantial

250 patients were seen

over one four week period across

20 emergency departments in the UK



UK e-scooter casualties - injuries

“Across Emergency Departments in Bristol over 40% of patients who are treated after e-scooter incidents have fractures, a number also suffer life changing head injuries.”

Edd Carlton

RCEM Associate Professor
Consultant in Emergency Medicine
North Bristol Trust and TERN



Other road users - pedestrians

There is widespread use of e-scooters on pavements

Their relative speed and near-silence puts pedestrians, especially the very young, elderly and visually impaired at greater risk of injury



Not 'just like bikes'

Pedal cycles are well established
as a mode of transport

Rental trials enable a comparison of
serious injuries per million km travelled
between e-scooter, pedal cycle and motorcycle

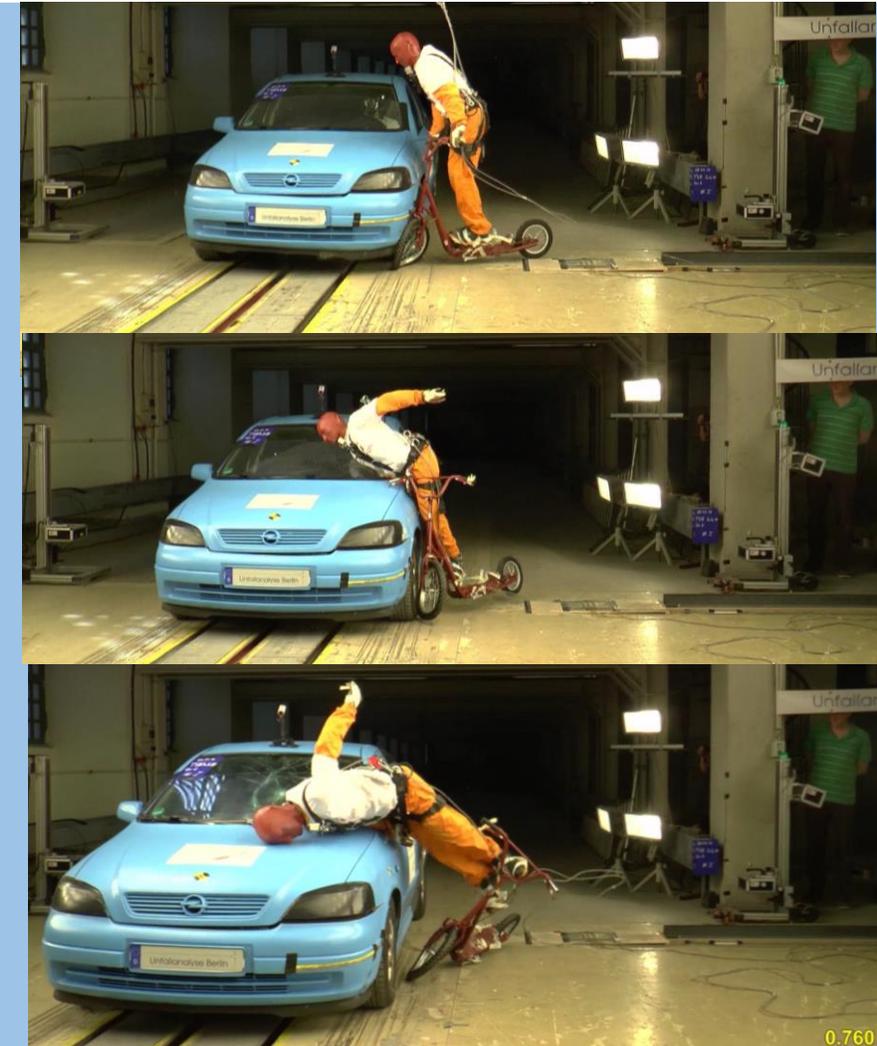
e-scooters and pedal cycles differ in their
construction and use



Crash testing

Crash testing and computational modelling has shown that an e-scooter is less stable than a pedal cycle especially when negotiating surface defects, accelerating and decelerating

Riders are more likely to hit their heads and forces experienced on casualties' heads would result in serious injury or death



PACTS recommends that the DfT

- takes immediate action to address dangerous and illegal private e-scooter use;
- undertakes a thorough public consultation before making any decision on the legalisation of e-scooters;
- commissions further research; and,
- if the Government decides to legalise use of private e-scooters, it should adopt regulations for their construction and use



Summary

- Despite being illegal to use, the popularity of private e-scooters continues to grow.
- Data sources are maturing and academic research is being carried out which increases the understanding how e-scooter casualties are injured and the severity of their injuries
- The current situation in the UK is unsatisfactory and more needs to be done to improve safety for e-scooter riders and other road users.

Thank you for listening



Find out more about PACTS's work at
<https://www.pacts.org.uk>