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Two year paediatric trauma centre analysis of electric scooter injuries

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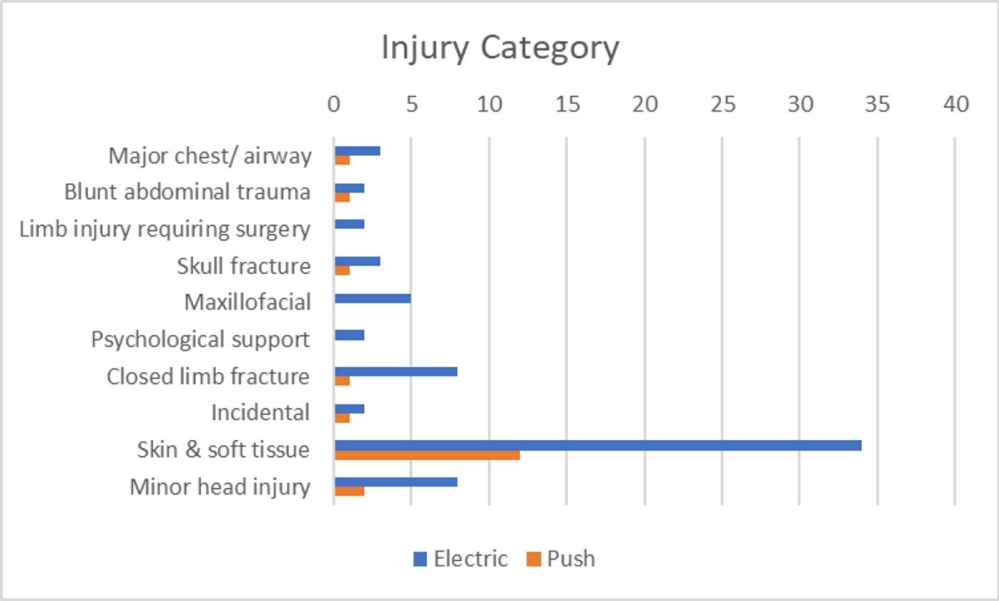


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Injury classification of electric and push scooter accidents

238x143mm (149 x 149 DPI)

Two year paediatric trauma centre analysis of electric scooter

injuries

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Two year paediatric trauma centre analysis of electric scooter injuries

Electric (e-)scooters are increasingly popular in the UK with currently 32 trials of rental e-scooters across England¹. National data from 2020 reports 484 casualties involving e-scooters including 5 pedestrians². Around 25% were seriously injured and 75% sustained minor injuries. Ten children aged 0-9 sustained injuries and 129 in those aged 11-19 years. There is a paucity of published evidence regarding injury patterns in children³.

We investigated patients presenting to a Paediatric Major Trauma Centre from Jan 2020-Dec 2021, identifying 39 e-scooter injuries. Ninety two percent of the e-scooters were private vehicles (i.e. not hired) and occurred at speeds >15mph, 97% of children did not wear a helmet. Thirty percent of incidents involved multiple children (≥ 2) on a scooter and 87% occurred on public land (park, footpath or road).

Forty four percent required hospital admission, 28% required CT imaging and 18% emergency surgery. There were a range of injuries (figure 1)ⁱ including skull fractures, long bone fractures, maxillofacial injuries and abdominal/chest injuries. Eighteen percent of all e-scooter injuries were classified as major trauma; this group all involved collision with a car. Thirteen percent of patients were referred to safeguarding services and 32% of patients were referred to the police.

E-scooters are classified as “powered transporters” i.e. are defined as a “motor vehicle” which means the laws that apply to motor vehicles apply to e-scooters. This is the same framework for

¹ <https://www.gov.uk/guidance/e-scooter-trials-guidance-for-users>

² <https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-e-scooter-factsheet-2020/reported-road-casualties-great-britain-e-scooter-factsheet-2020>

³ Hourston GJM, Ngu A, Hopkinson-Woolley J, Stöhr K. Orthopedic injuries associated with use of electric scooters in the UK: A dangerous trend? Case series and review of the literature. <https://doi.org/10.1080/1538958820211882676> [Internet]. 2021 [cited 2021 Nov 24];22(3):242–5. Available from: <https://www.tandfonline.com/doi/abs/10.1080/15389588.2021.1882676>

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3 hoverboards but different to electric bikes or quadbikes (table 1). Private e-scooter use is illegal on
4 public roads or spaces but legal on private land with the permission of the land owner. E-scooters
5 are illegal for under 16 year olds in public places. Rental e-scooters have been extensively safety-
6 tested and insured, thus allowing their use on public roads or cycle lanes (not pavements). Riders
7 require a full or provisional driving licence.
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Vehicle	Private Land	Public Land
E-scooters/ Segways/ hoverboards	Legal	Private vehicles cannot be legally taxed/ insured. Rental e-scooters legal if holding a valid licence.
E-bikes	Legal	Legal if 14 years, <250 watts and <15.6mph. No tax/insurance/ registration/ licence needed.
Quad bikes	Legal	Full licence, taxed and insurance required

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Table 1. Legal framework for different motorised vehicles in private and public land.

Illegal e-scooter use may lead to a fixed penalty notice⁴. Private e-scooters can be seized if they are used in a public space or if they are being used in an antisocial manner. Rental e-scooters maximum speed is 15.5 mph. Private e-scooters can be purchased up to 68mph, but can be customised to faster speeds. There is no legal requirement to wear a helmet. E-scooters are recommended to be used by one person at a time.

The public is largely unaware of the legal framework regarding e-scooter use in children or the serious clinical morbidity and legal ramifications. In our ED we have produced guidelines for clinicians seeing children injured on e-scooters, public health posters for our department and patient information leaflets. We believe a wider public health education campaign and national ED research into e-scooter injuries is necessary.

⁴ <https://www.merseyside.police.uk/advice/advice-and-information/rs/road-safety/advice-escooters/>