



Lesioni da monopattino Epidemiologia di un CTS trauma

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AO San Camillo-Forlanini, Roma,

Monopattino elettrico

Dal 2017 in Europa



Uso quasi esclusivo in aree urbane

Dal 2019 in Italia

Monopattino elettrico

Vantaggi

25 km/h to 15 km/h

Bypass del traffico



Monopattino elettrico

Svantaggi

Non ha corsie dedicate

Switch tra differenti tipi di strade e superfici

Assenza di normative specifiche

Assenza di protezioni





Uso scorretto

Progressivo aumento incidentalità



Original Article

Emergency department electric scooter injuries after the introduction of shared e-scooter services: A retrospective review of 3,331 cases

Ittai Shichman¹, Or Shaked¹, Shai Factor¹, Ahuva Weiss-Meilik², Amal Khoury¹



Systematic review



Injury patterns and circumstances associated with electric scooter collisions: a scoping review

Manish Toofany,¹ Sasha Mohsenian,² Leona K Shum,³ Herbert Chan,^{3,4} Jeffrey R Brubacher ^{3,4}

Indian Journal of Orthopaedics (2023) 57:818–826
<https://doi.org/10.1007/s43465-023-00862-1>

REVIEW ARTICLE



Epidemiology of Fractures Following Electric Scooter Injury

Seung-Ju Kim¹ · Dong-Woo Lee¹

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OPEN

Risk factors and injury patterns of e-scooter associated injuries in Germany

Holger Kleinertz ^{1,2,3}, Annabelle Volk⁴, Dimitris Dalos ^{4,2,3}, Rico Rutkowski ⁴, Karl-Heinz Frosch^{4,5} & Darius M. Thiesen ¹



Emergency department electric scooter injuries after the introduction of shared e-scooter services: A retrospective review of 3,331 cases

Ittai Shichman¹, Or Shaked¹, Shai Factor¹, Aluva Weiss-Meilik², Amal Khoury¹

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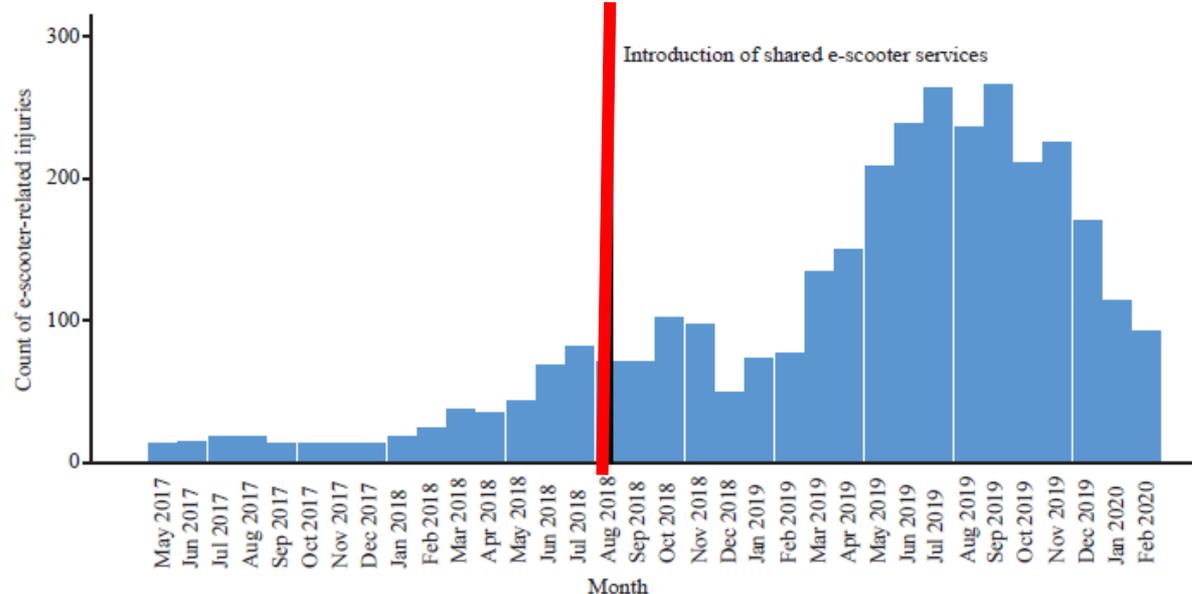


Figure 1. E-scooter-related injuries by month. The line represents the introduction of shared e-scooter services.

The introduction of the shared e-scooter services is associated with a dramatic increase in e-scooter injuries presenting to the ED



INCIDENTI Anno STRADALI 2023

Istat
Istituto Nazionale di Statistica

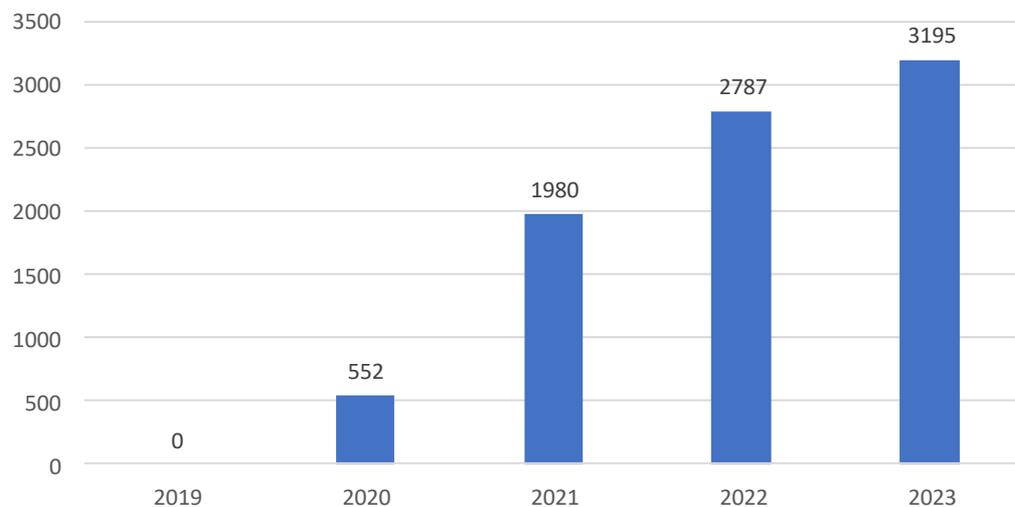
Diminuisce il numero delle vittime, a fronte di una ripresa ormai stabile della mobilità, mentre aumentano in misura contenuta incidenti e feriti
(Vittime entro 30 giorni dall'incidente)

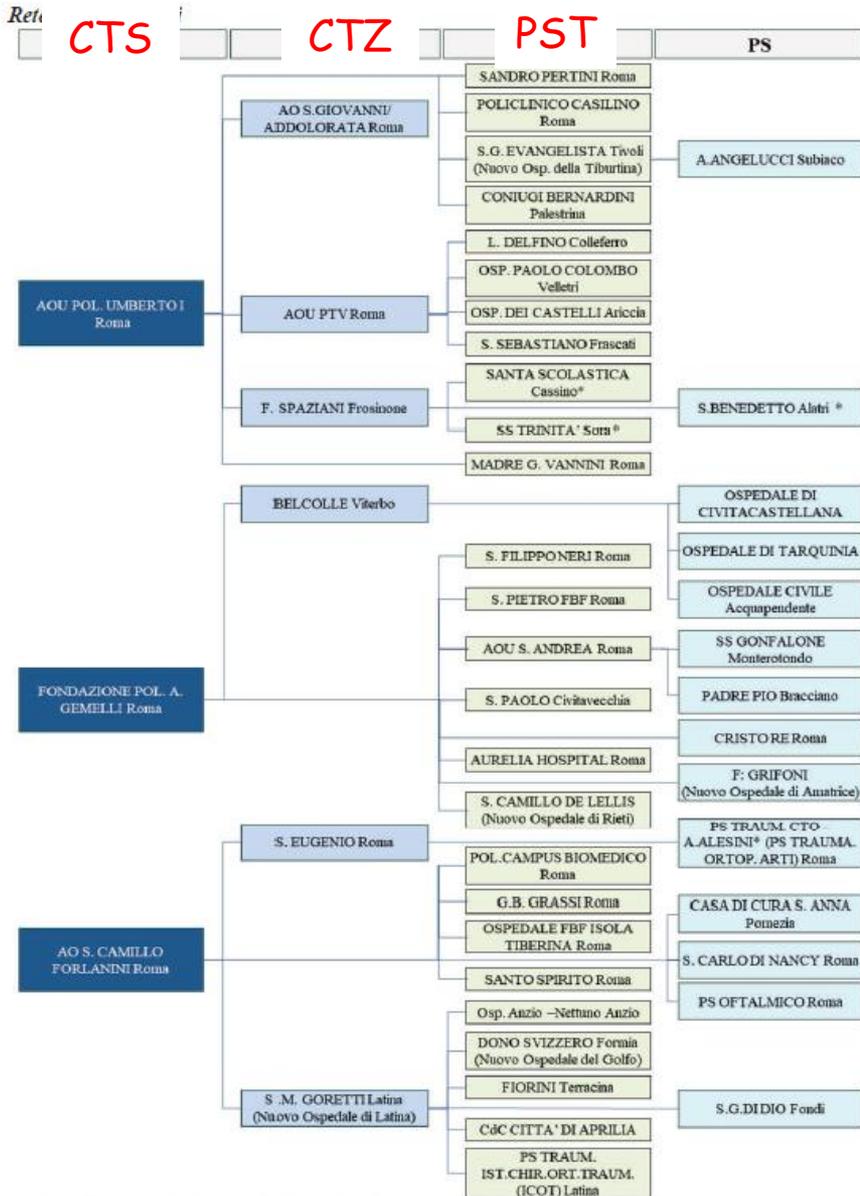
INCIDENTI

MONOPATTINI ELETTRICI

Anno 2023		
3.365 INCIDENTI	3.195 FERITI	21 VITTIME
Anno 2022		
2.929 INCIDENTI	2.787 FERITI	16 VITTIME

Numero





Rete trauma Lazio



*afferisce direttamente al CTS per Traumi che necessitano di competenza neurochirurgica.



REGIONE
LAZIO

Policlinico Gemelli

Policlinico Umberto I

S. Camillo



Bacino di rete
4.500.000 abitanti

Electric scooter–related accidents: a possible protective effect of helmet use on the head injury severity

Francesca Cittadini¹ · Giovanni Aulino¹  · Martina Petrucci² · Silvia Valentini¹ · Marcello Covino²

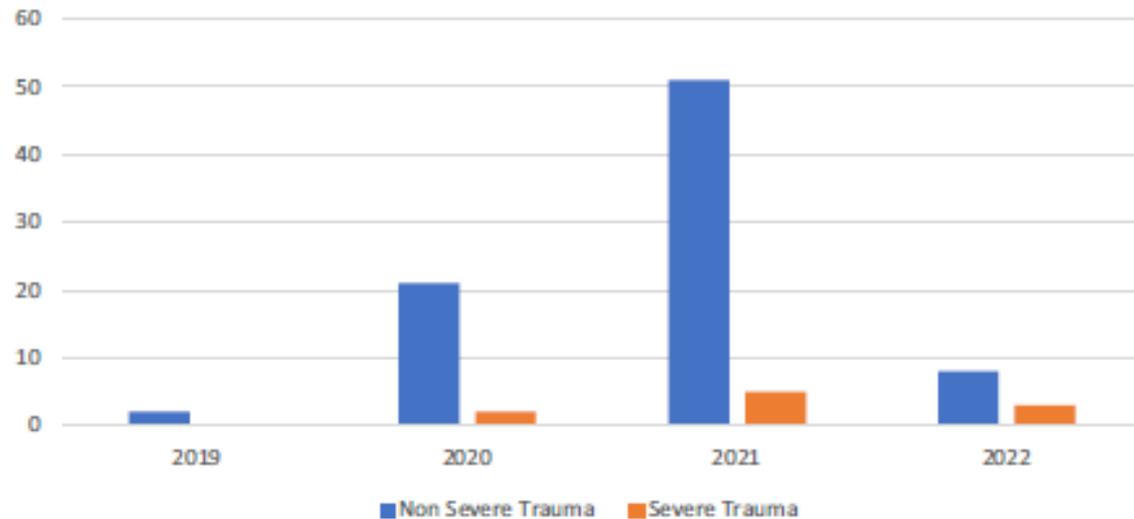
Accepted: 11 October 2022 / Published online: 4 November 2022
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92 pazienti da Giugno 2019 ad Aprile 2022

Non-severe trauma (ISS < 16) **89%** Severe trauma (ISS ≥ 16) **11%**

Fig. 1 Breakdown of e-scooter accidents by year



ISS medio 3



Electric scooter-related accidents: a possible protective effect of helmet use on the head injury severity

Francesca Cittadini¹ · Giovanni Aulino¹ · Martina Petrucci² · Silvia Valentini¹ · Marcello Covino²

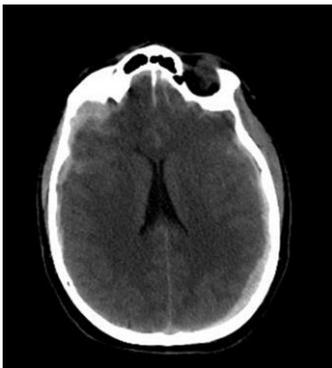
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Table 3 Breakdown of the entire cohort by ISS into non-severe trauma and severe trauma

	Non-severe trauma (ISS < 16) <i>n</i> 82	Severe trauma (ISS ≥ 16) <i>n</i> 10	<i>P</i> value
Age	30 [20.5–39.25]	23.50 [18.5–26]	0.105
Sex (male)	69 (84.1%)	7 (70%)	0.370
ED access on nightshift (12 P.M. to 8 A.M.)	25 (30.5%)	3 (30%)	1.000
ED access on weekends (Saturday, Sunday)	27 (32.9%)	2 (20%)	0.496
ED access by emergency service	34 (41.5%)	6 (60%)	0.321
Trauma severity			
ISS	2 [1–4.25]	17.5 [16.75–26]	< 0.001
AIS head neck	0 [0–0]	0 [0–4]	0.034
AIS face	0 [0–0]	0 [0–4]	0.876
AIS chest	0 [0–0]	0 [0–0]	0.198
AIS abdomen	0 [0–0]	0 [0–0]	1.000
AIS pelvi-extremity	1 [0–2]	0.5 [0–4.25]	0.463
AIS external	1 [0–1]	1 [0.75–1]	0.192
Outcomes			
Bone fracture	26 (31.7%)	6 (60%)	0.091
Skin wound (suture needed)	16 (19.5%)	0	0.200
Concussion	22 (26.8%)	2 (20%)	1.000
Need for hospital admission > 24 h	17 (20.1%)	10 (100%)	< 0.001

Statistically significant results are highlighted in bold (< 0.05)

Gravità associata a trauma cranico





Testa

Faccia

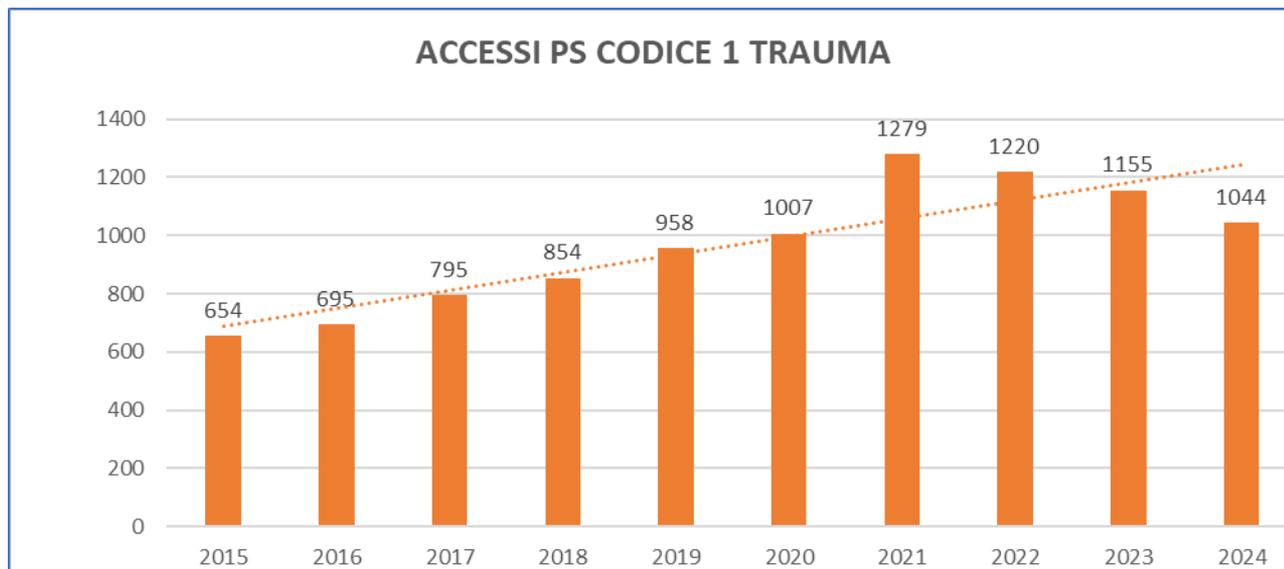


Arti superiori

CTS



ACCESSI PS CODICE 1 TRAUMA





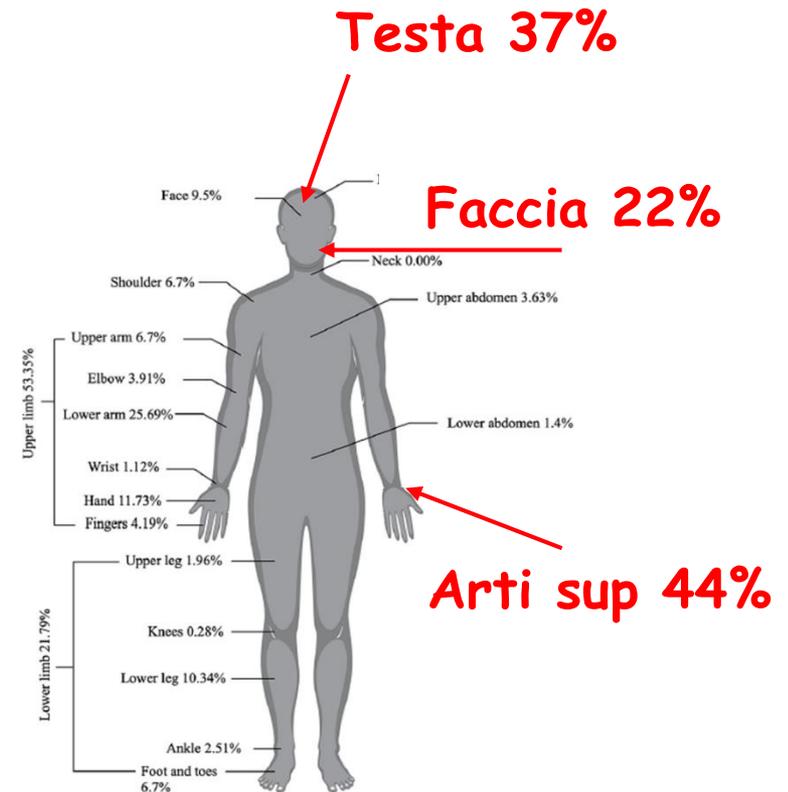
Electric scooter trauma as a new category of injuries with high hospitalisation and morbidity rates in young and adult patients

C Gori, L Forcella, A Martinotti, RM Pani, S Manfroni, G Ricci, P Marini, E Cingolani
Rome, Italy Critical Care 2023, 27(S1): P253

273 patients from September 2019 to September 2022
Qualsiasi codice di ingresso

Età media **33,2** uomini [57%],
233 e-scooter riders
Injury Severity Score (ISS) medio **4.6**
(94%) night time trauma

70 richiedono intervento
7 necessitano di terapia intensiva
4 residuano invalidità permanente





63 pazienti da Gennaio
2021 a Giugno 2024
Solo codici 1

Codice 1

Parametri vitali alterati
Segni evidenti di lesione
Dinamica maggiore

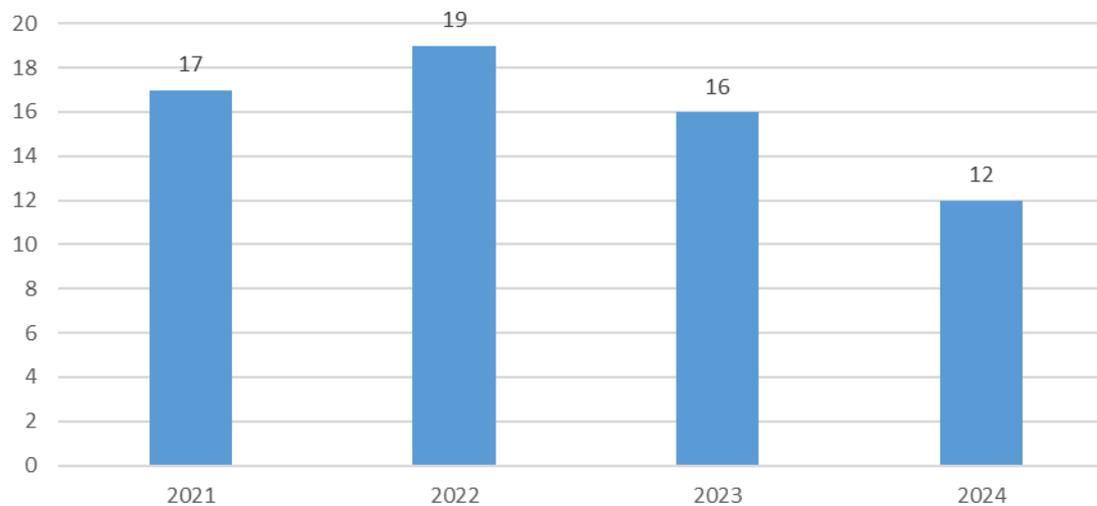




Codici 1

63 pazienti

accessi trauma monopattino codici 1



73% diurni



27% notturni



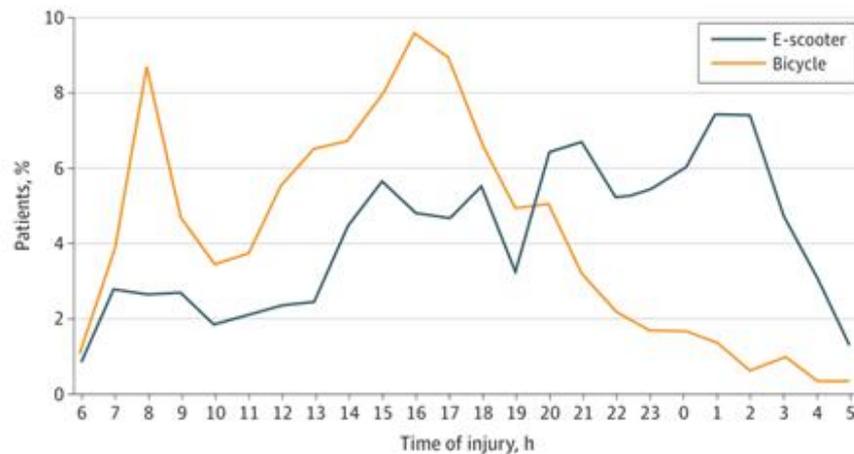


Original Investigation | Public Health

Characteristics of Electric Scooter and Bicycle Injuries After Introduction of Electric Scooter Rentals in Oslo, Norway

August Vincent Stray, MD, DDS; Henrik Siverts, MD; Knut Melhuus, MD; Martine Enger, MD, PhD; Pål Galteland, MD, DDS; Ingar Naess, MD; Eirik Helseth, MD, PhD; Jon Ramm-Pettersen, MD, PhD

Figure 2. Timeline of Electric Scooter (e-Scooter) and Bicycle Injuries During 24 Hours



Most bicycle injuries occur during rush hour, whereas most e-scooter injuries occur during evening and nighttime. Time is based on a 24-hour clock from 6:00 AM to 5:00 AM.

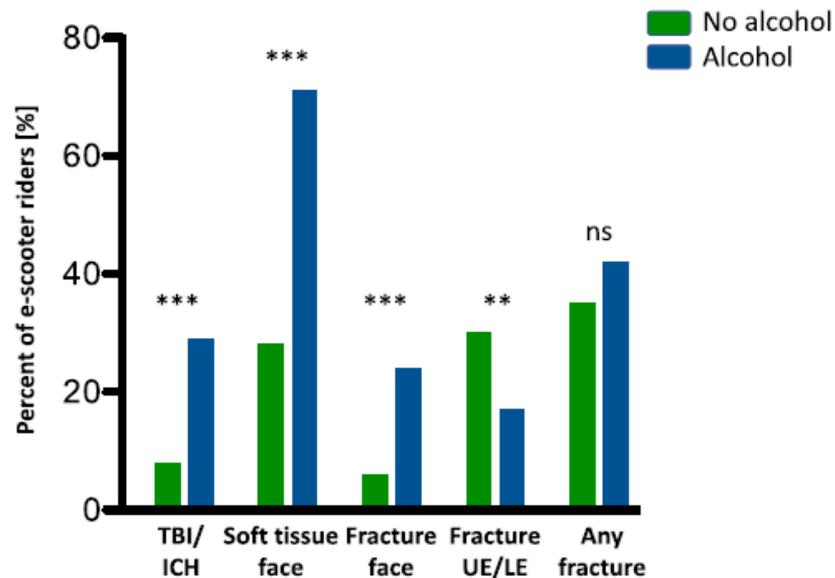
Table 2. Rate of Intoxicated Electric Scooter (e-Scooter) Riders and Bicyclists According to Time of Day and Weekday vs Weekend



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Risk factors and injury patterns of e-scooter associated injuries in Germany

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80% uomini
20% donne

Età media 34 anni



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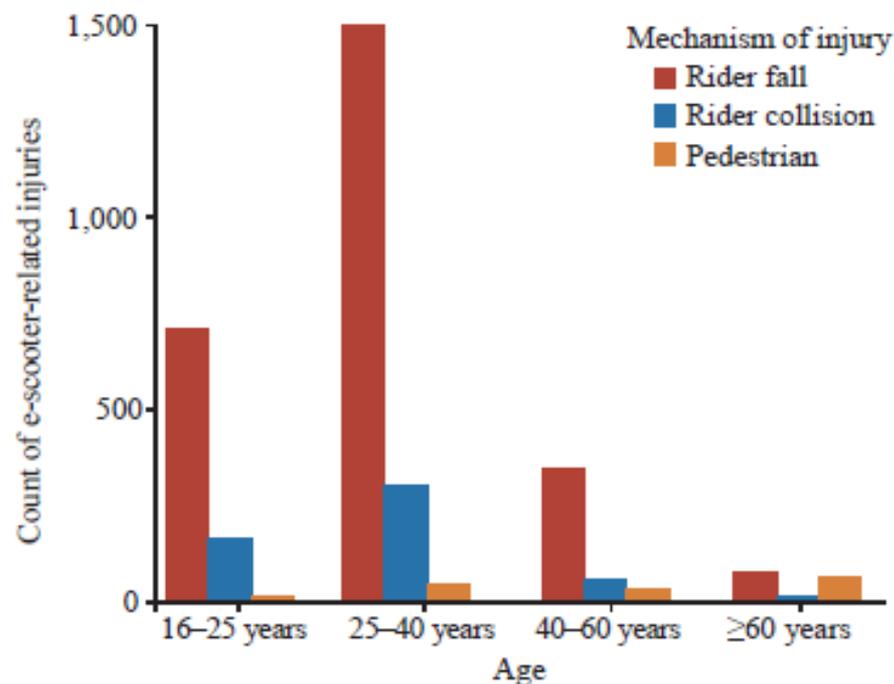


Figure 3. E-scooter-related injuries by age group and mechanism of injury. The mechanisms of injury are indicated by colors.

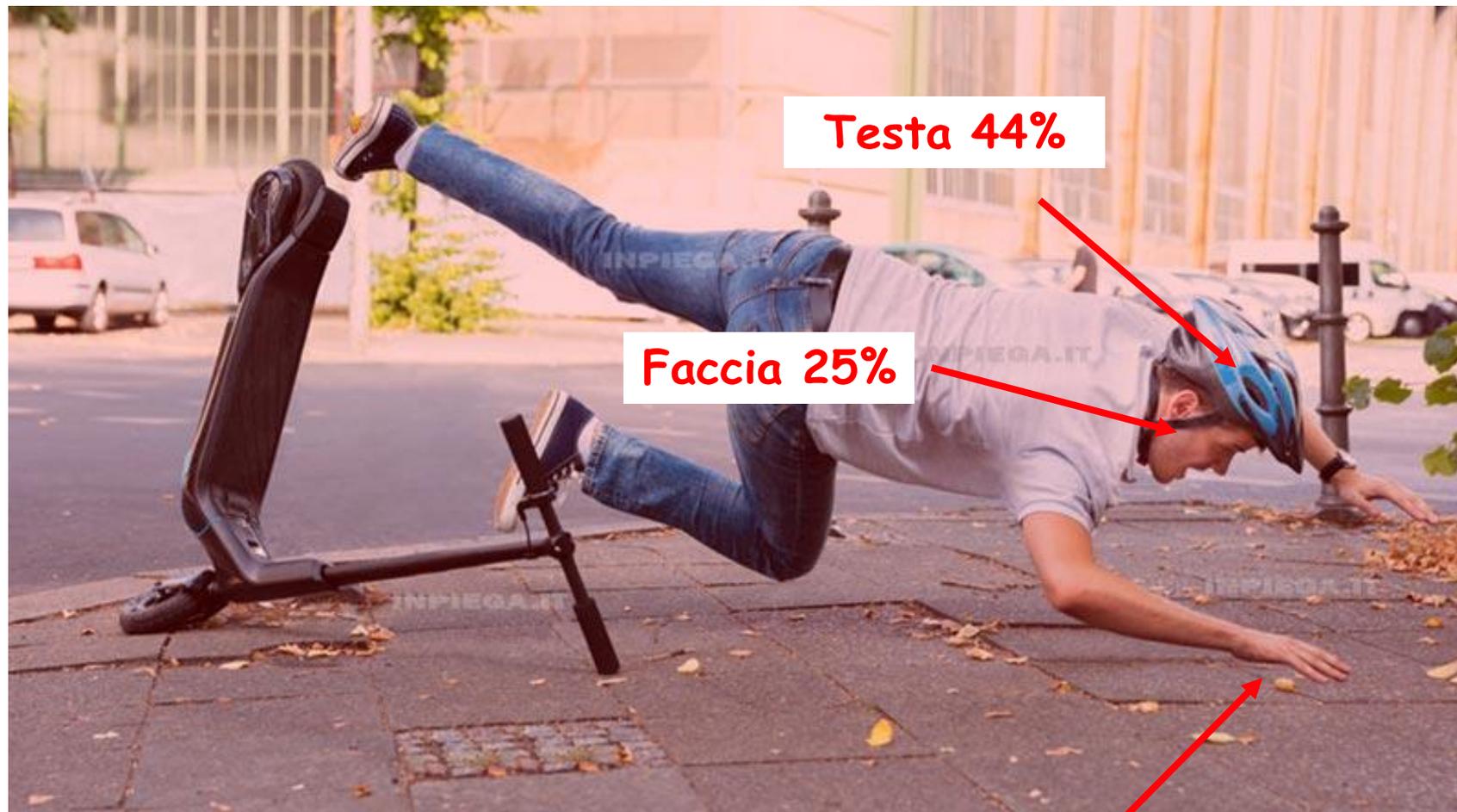


65% NON italiani





ISS medio 11



Testa 44%

Faccia 25%

Arti superiori 22%



Gravità

ISS medio 11

ISS > 16 24%

Ricovero 35%

Dimessi 62%

Chirurgia 24%





CODICI DI ACCESSO AL PRONTO SOCCORSO

CODICE N° / COLORE	DENOMINAZIONE	DEFINIZIONE
1 ROSSO	EMERGENZA	Interruzione o compromissione di una o più funzioni vitali
2 ARANCIONE	URGENZA	Funzioni vitali a rischio, Rischio evolutivo o dolore severo
3 AZZURRO	URGENZA DIFFERIBILE	Condizione stabile con sofferenza, Richiede prestazioni complesse
4 VERDE	URGENZA MINORE	Condizione stabile, Richiede una prestazione semplice
5 BIANCO	NON URGENZA	Problema non urgente o di minima rilevanza clinica

62% Dimessi = Sovratriage
(sovratriage medio codici 1 50%)

Prudenza?

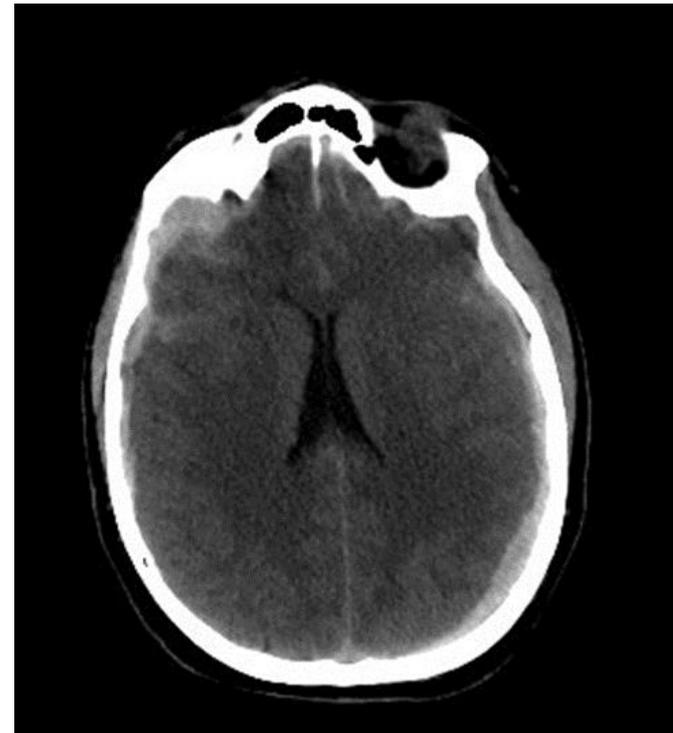
Terapia intensiva



6 ricoveri con Iss medio 26 (9,5 %)

Tutti i ricoveri
per trauma
cranico grave

4 esiti invalidanti



Conclusioni

La traumatologia da monopattino è in costante aumento

Riguarda una popolazione giovane

L'incidenza di traumi gravi è bassa ma non irrilevante

La presenza di trauma cranico condiziona gravità ed esiti

Il casco dovrebbe essere obbligatorio



Grazie

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