

ACCIDENTALITY OF PERSONAL MOBILITY DEVICES IN LYON

ELMOS

IRTAD – Road Safety Data

28/09/2022



PROGRAM

ELMOS Project

Quantitative results

Thorough analysis of 115 accidents

PMD

Personal Mobility Devices



ELMOS project



ELMOS PROJECT

E = EDP engin de déplacement personal = french for PMD

L = Lyon

MO = Mobility

S = Road Safety

Lyon Metropole : 1,5 million people



Quantitative results

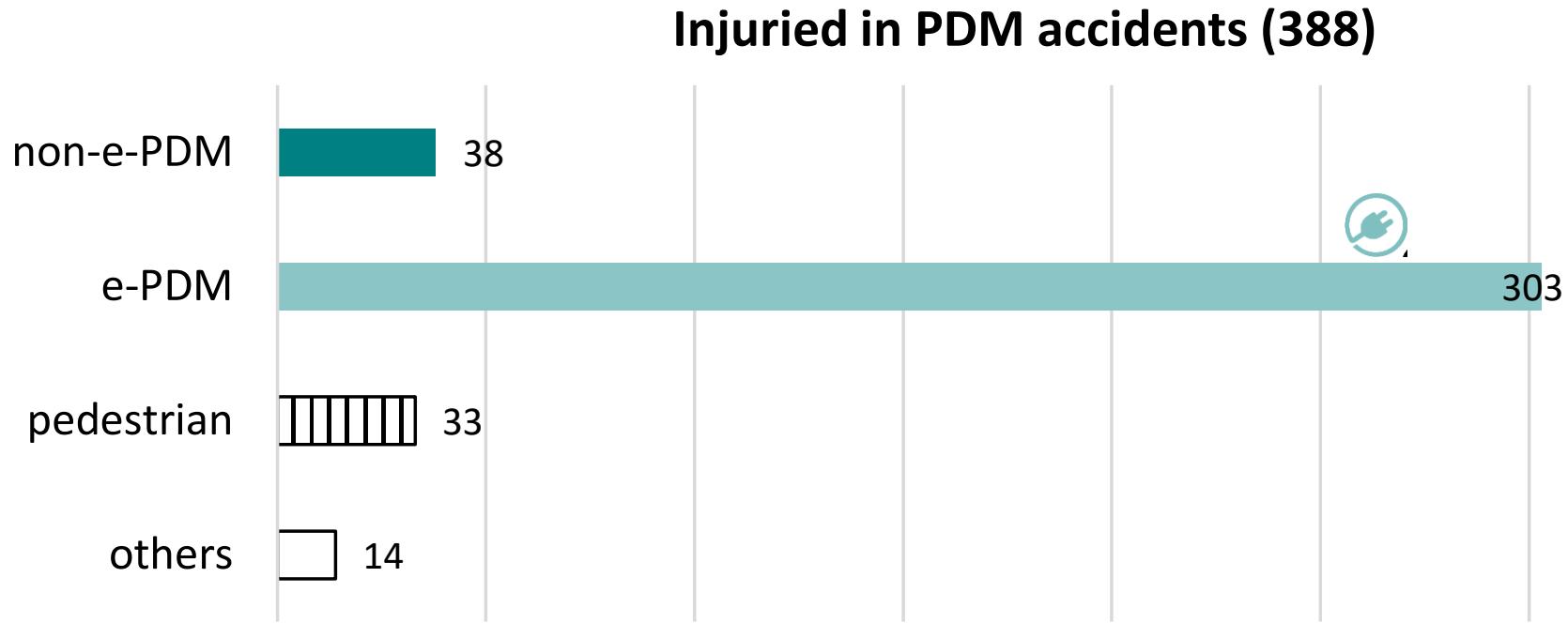


3 years (2019-2021) in Lyon Metropole, in urban area :

- 355 accidents involving PDM
- 388 injured (PDM or not), one death

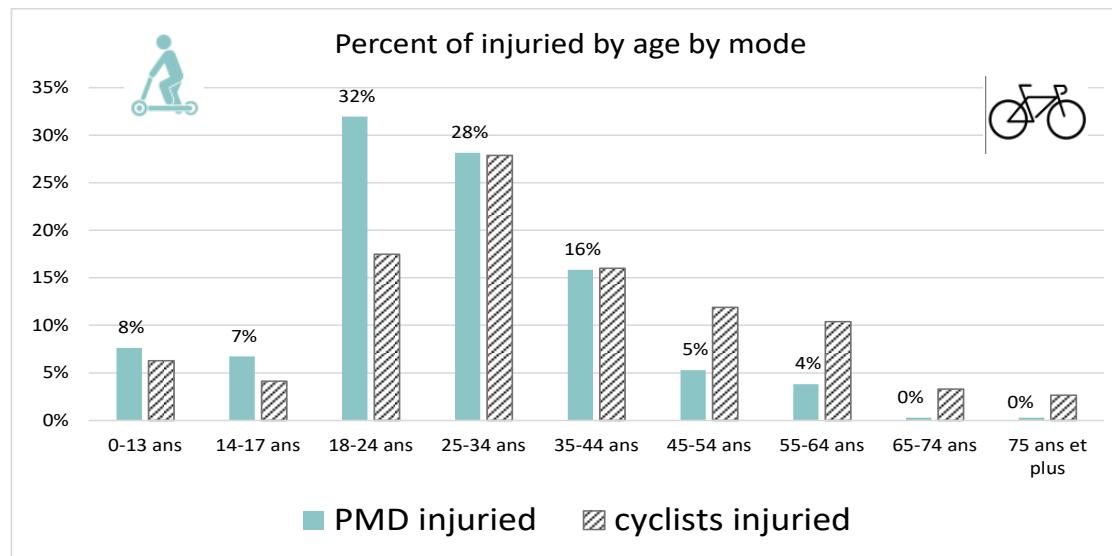
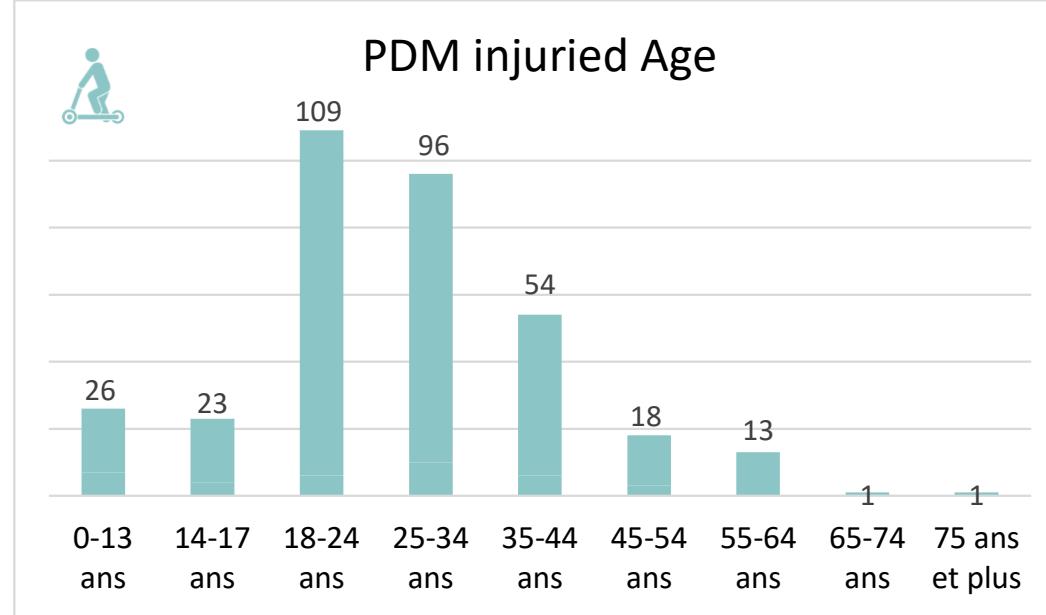
Source : police accidents data

WHO IS INJURED ? PDM USERS OR OTHERS ?



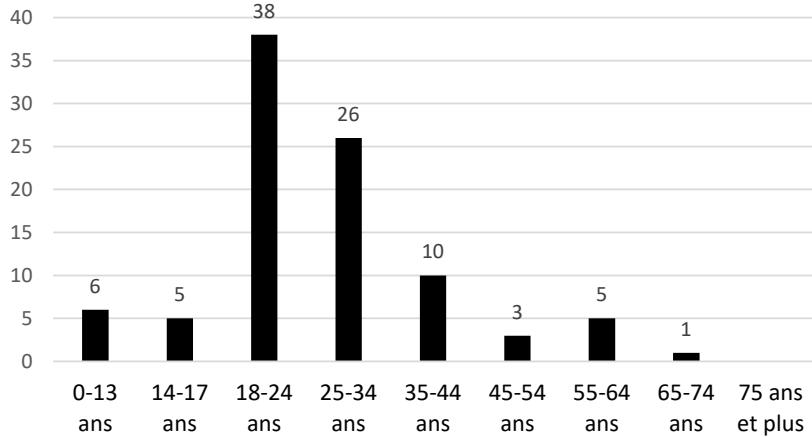
Source : BAAC (=police data) – base vivante – 2019-2021, Métropole de Lyon, urban area

WHO ?

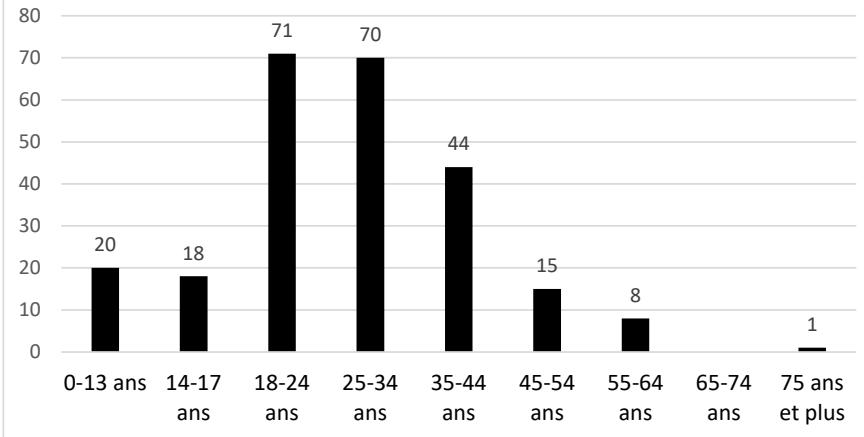


WHO ?

Age of women injured on PDM (total = 93)



Age of men injured on PDM (total = 242)



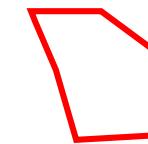
WHEN ?



PDM injured	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
5h-7h		①		①	①		①	4
7h-10h	7	10	3	10	8	2	3	43
10h-13h	8	5	11	8	3	8	1	44
13h-16h	5	3	5	8	8	7	3	39
16h-19h	16	11	24	12	10	9	7	89
19h-22h	4	10	7	6	12	4	5	48
22h-1h	5	2	8	5	9	4	3	36
1h-5h	3	1	7	2	2	12	11	38
Total	48	43	65	52	53	46	34	341

Accidents involving a PDM (non e and e PDM) 2019-2021 – Lyon Metropole

WHERE ?



City of Lyon

=

80 % of accidents involving
a PDM

Thorough analysis of
115 accidents



DATA



115 police reports in Lyon (all police reported available – 350 accidents)

2019-2021

Investigation in the process of each accident (one hour per accident)

Constitution of typology of PMD accidents

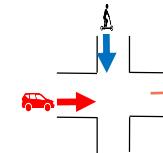
Mechanisms, dysfunctional situations and factors in the « man-vehicle-road environnement » traffic system

CLASSIFICATION – 115 ACCIDENTS



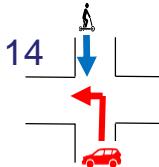
With another vehicle - 82

- Class A : On a crossroad – perpendicular – 42



PDM wrong way - 9
PDM contra flow cycling – 7
Other and PDM not in the right – 10
Other and PDM in the right - 7
Others - 9

- Class B :On a crossroad – opposite direction – 14
- Class C : PDM on pedestrian crossing - 14
- Class D : Headon collision - 4
- Class E : Opening door - 5
- Class F : On the side walk – 3



• PDM alone – 13 cases – Class G



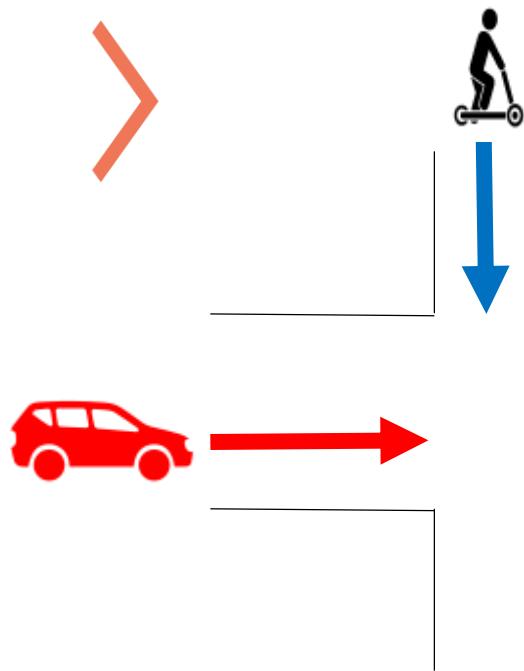
• PDM against pedestrian – 12 cases - Class H

PDM wrong way - 3
PDM contra flow cycling – 5
Others - 4

• Others – 8 cases – Class K : 1 tram, 1 race, 2 blind-spots, 1 car from the back, ...

CLASS A – CROSSROAD, PERPENDICULAR –42 CASES

PDM and car are perpendicular



A1 – PDM : wrong way – 9 cases



A2 – PDM : contra flow cycling – 7 cases

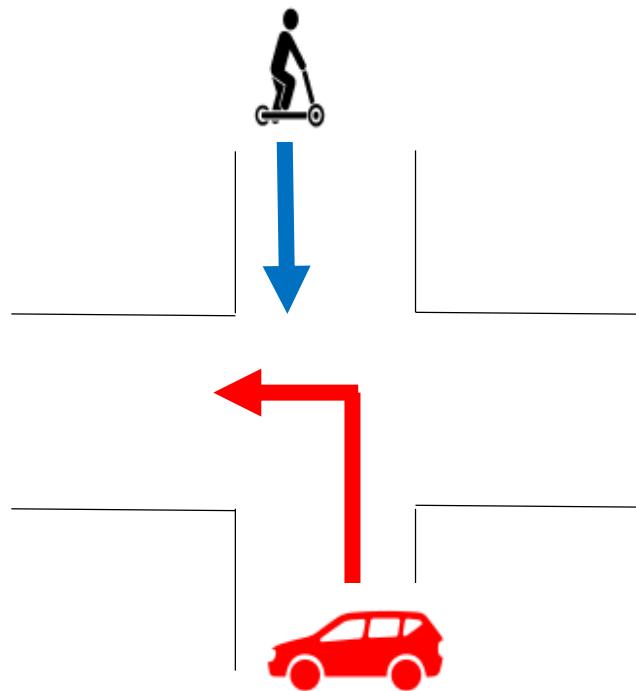


A3 – PDM crosses, with red traffic line, stop, ..., at the same time the car does – 10 cases

A4 – PDM crosses, in the right – the car driver doesn't see him - 7 cases

A5 – other situation -7

CLASS B – 14 CASES – CROSS ROAD – OPPOSITE DIRECTION - THE CAR TURNS LEFT



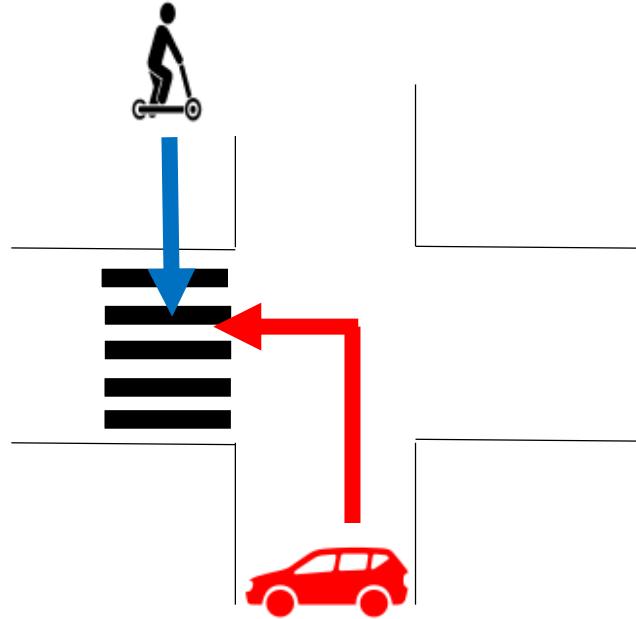
PDM and car are face to face, the car turns left in front of the PDM

B1 – PDM rides in bus-cycling lane – 5 cases

B2 – PDM in contra flow cycling – 4 cases

B3 – other situation - 4 cases

CLASS C – 14 CASES PDM ON PEDESTRIAN CROSSING

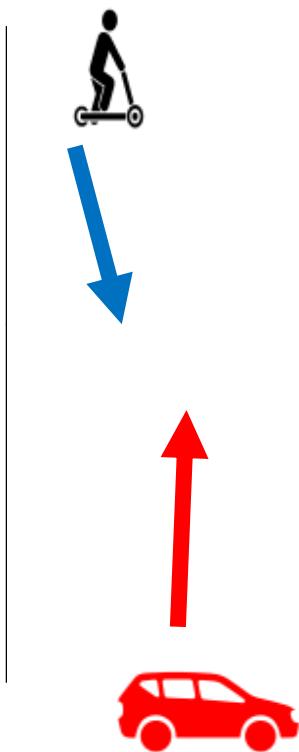


C1 – 6 cases – the car turns (left : 3 / right : 3), PDM rides face to the car

C2 : 3 cases - the PDM, suddenly, rides on the pedestrian crossing

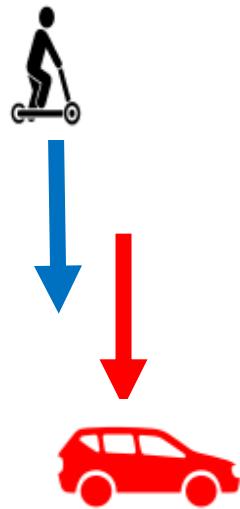
C3 : 5 cases - other situation

CLASS D – 4 CASES – HEAD ON COLLISION



no in cross road
Opposite direction

CLASS E – 5 CASES – OPENING DOOR

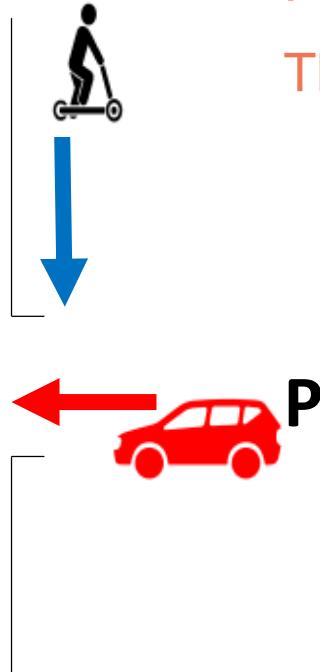


PDM and the car in the same direction

The car is parked (2 cases) or just stopped at a traffic light



CLASS F – 3 CASES – ON THE SIDEWALK



PDM runs on the sidewalk (e-PDM only)
The car exits from a parkresident



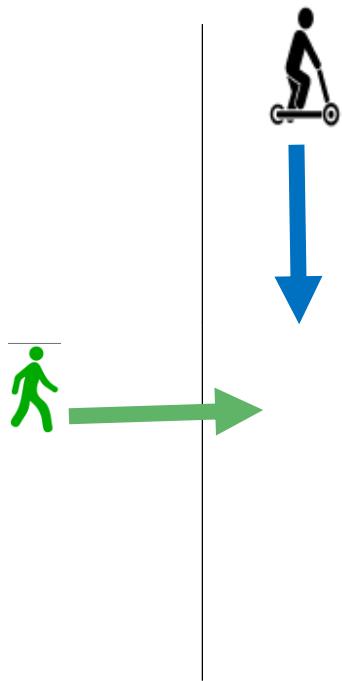
CLASS G – 13 CASES – PDM ALONE



G1 – no memory - 5 cases

G2 – loss of control (bend, going up
the sidewalk, pothole,....) – 8 cases

CLASS H – 12 CASES – WITH PEDESTRIAN



G1 – 5 cases – the PDM rides on a contraflow cycling



G2 – 3 cases – the PDM rides on the wrong way



G3 – 4 cases - other situation

CONCLUSION



Cross road

Contraflow cycling (for car drivers and pedestrians)

Very few accidents with : tramway, blind spots, trucks.

THANK YOU FOR YOUR ATTENTION

Contacts

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Appel à projet de la Direction à la Sécurité routière

