# Hospitalised road traffic casualties in Belgium

## Analysis of Belgian Hospital data 2005-2020

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# Data

- **Minimal Hospital data**
  - Hospitalised = at least one night in Hospital
  - Medical diagnosis (ICD10 / ICD9)
- **Police data**
  - 2005 – 2021
  - Based on registration form used by officers at the scene
  - Not all crashes are registered by the police



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# Maximum Abbreviated Injury Scale (MAIS)

- **Abbreviated Injury Scale (AIS)**
  - Medical scoringsystem developed by the Association for the Advancement of Automotive Medicine (AAAM)
- **Maximum Abbreviated Injury Scale (MAIS)**
  - AIS-score for most serious injury
- **EC definitions: serious injury = MAIS3+**

| | (M)AIS-score | English term | Traduction française |
|---|---|---|---|
| MAIS2- | 1 | Minor | Mineure |
| | 2 | Moderate | Modérée |
| MAIS3+ | 3 | Serious | Sévère |
| | 4 | Severe | Très sévère |
| | 5 | Critical | Critique |
| | 6 | Maximal (currently untreatable) | Maximal (actuellement incurable) |



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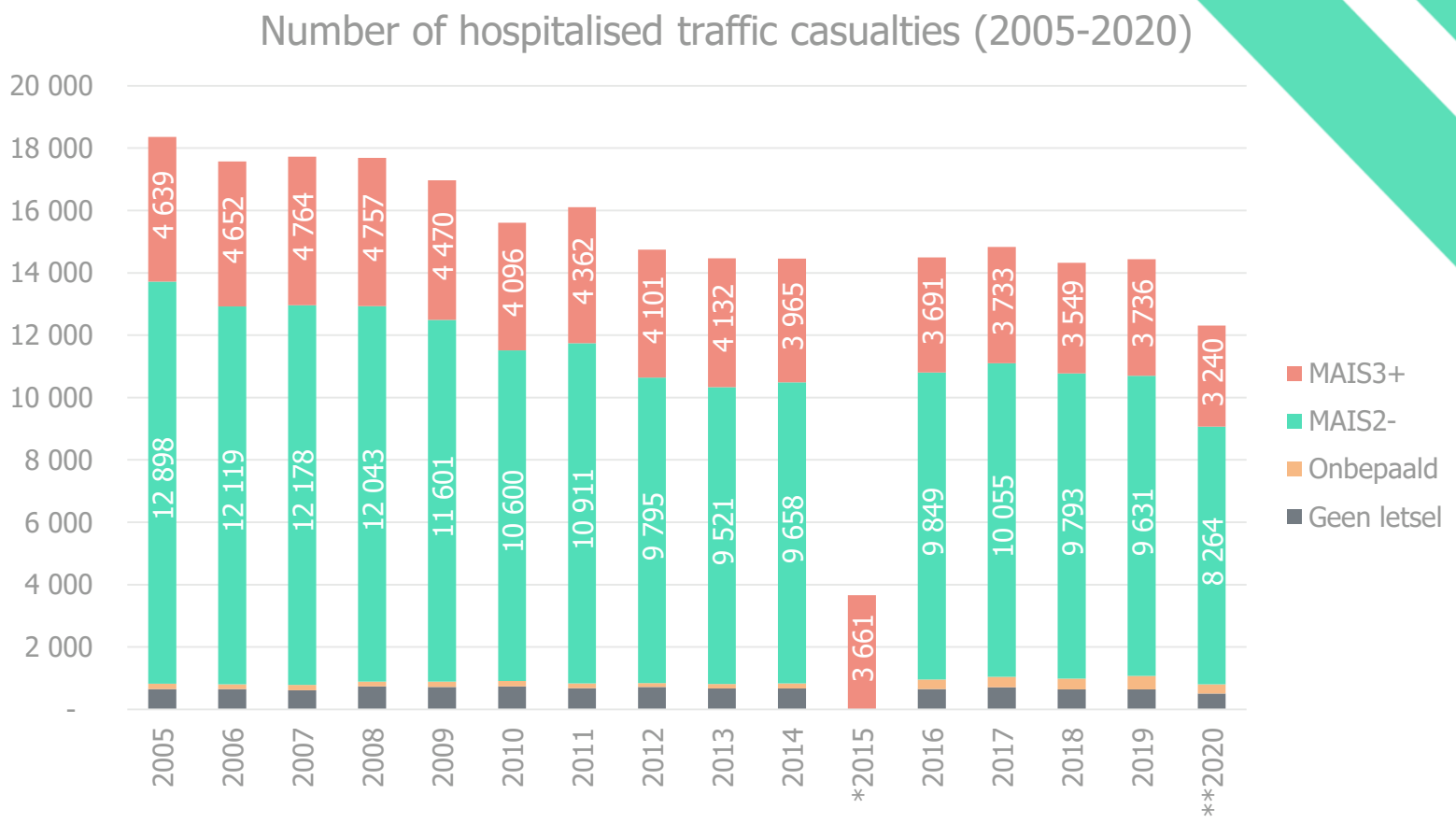
# MAIS3+ casualties in Belgium

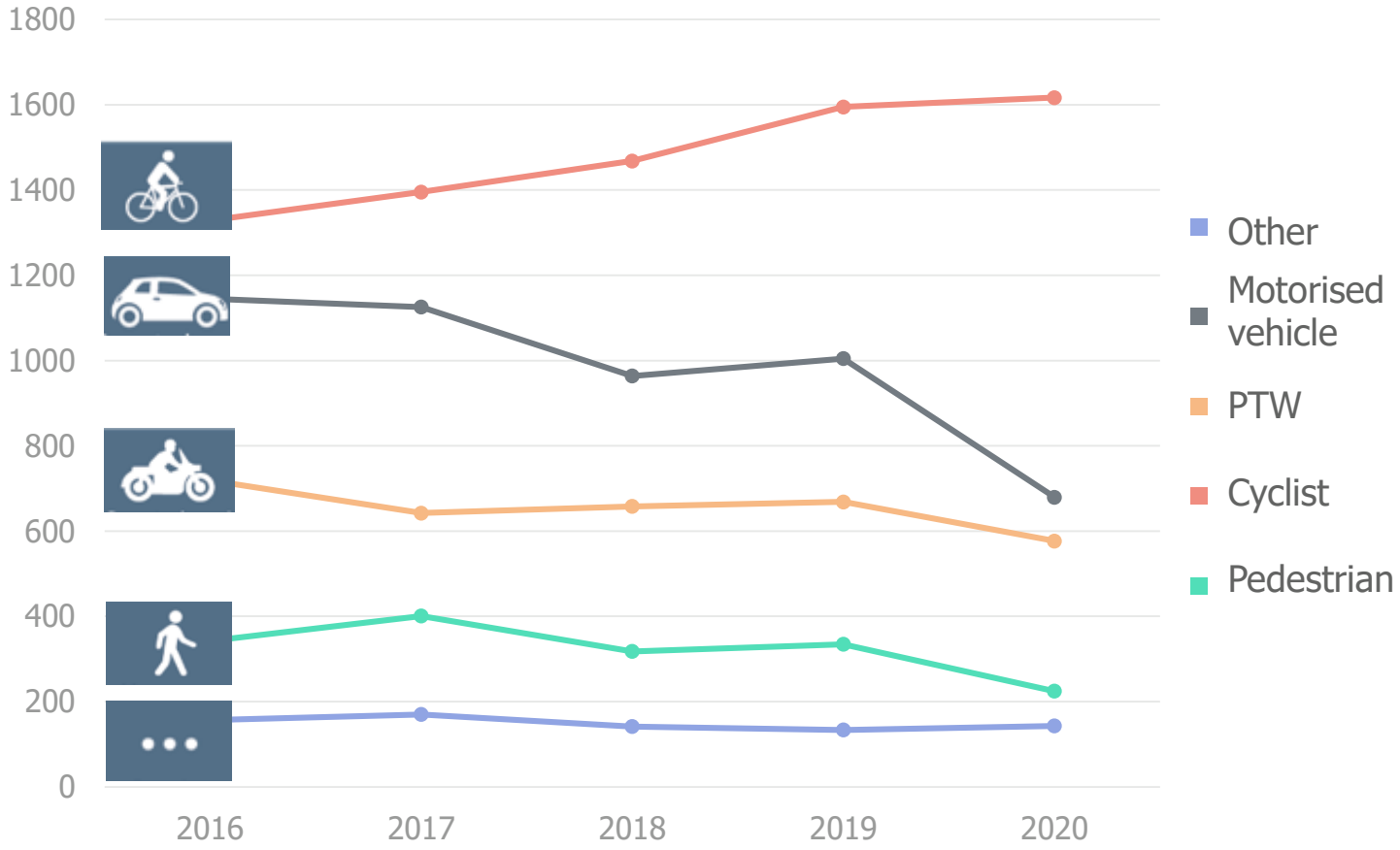
- **MAIS3+: 27% of all hospitalised**
  - Highest share
    - PTW (31%)
    - 18-24 years (32%)
  - Lowest share
    - Cyclist (25%)
    - 0-17 years (15%)



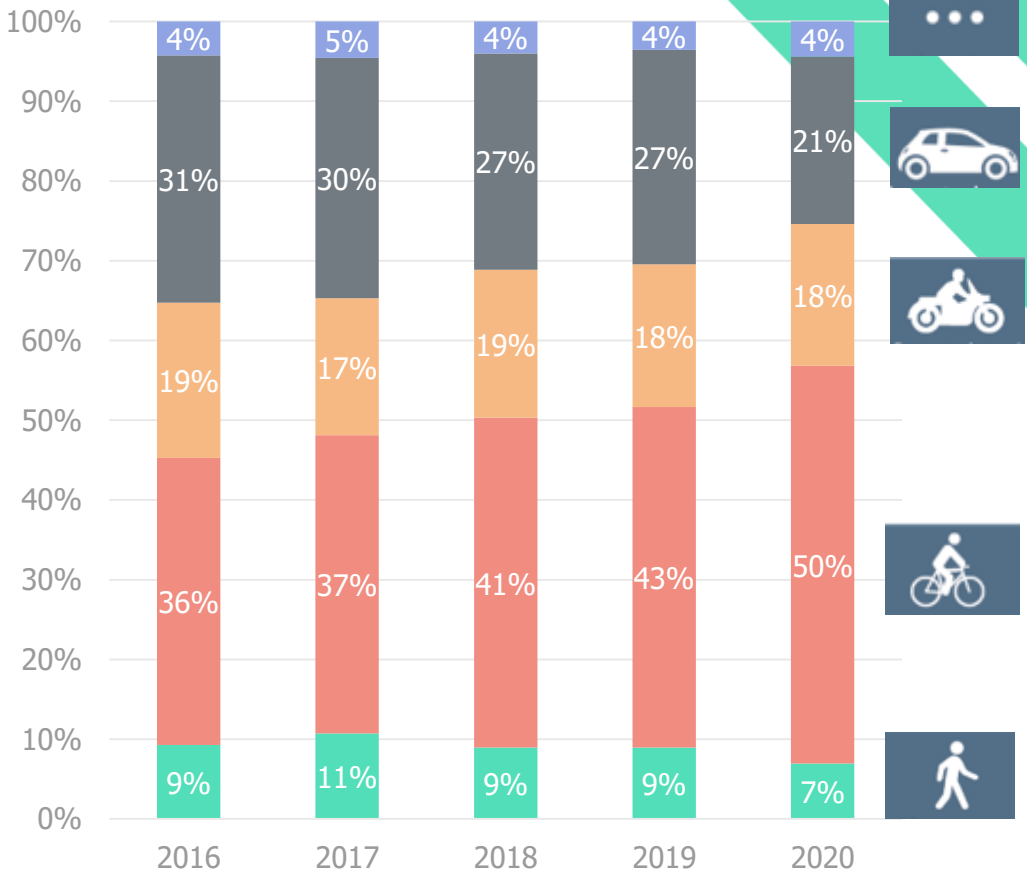

* Preliminary estimate

* Percentages based on 2019 figures

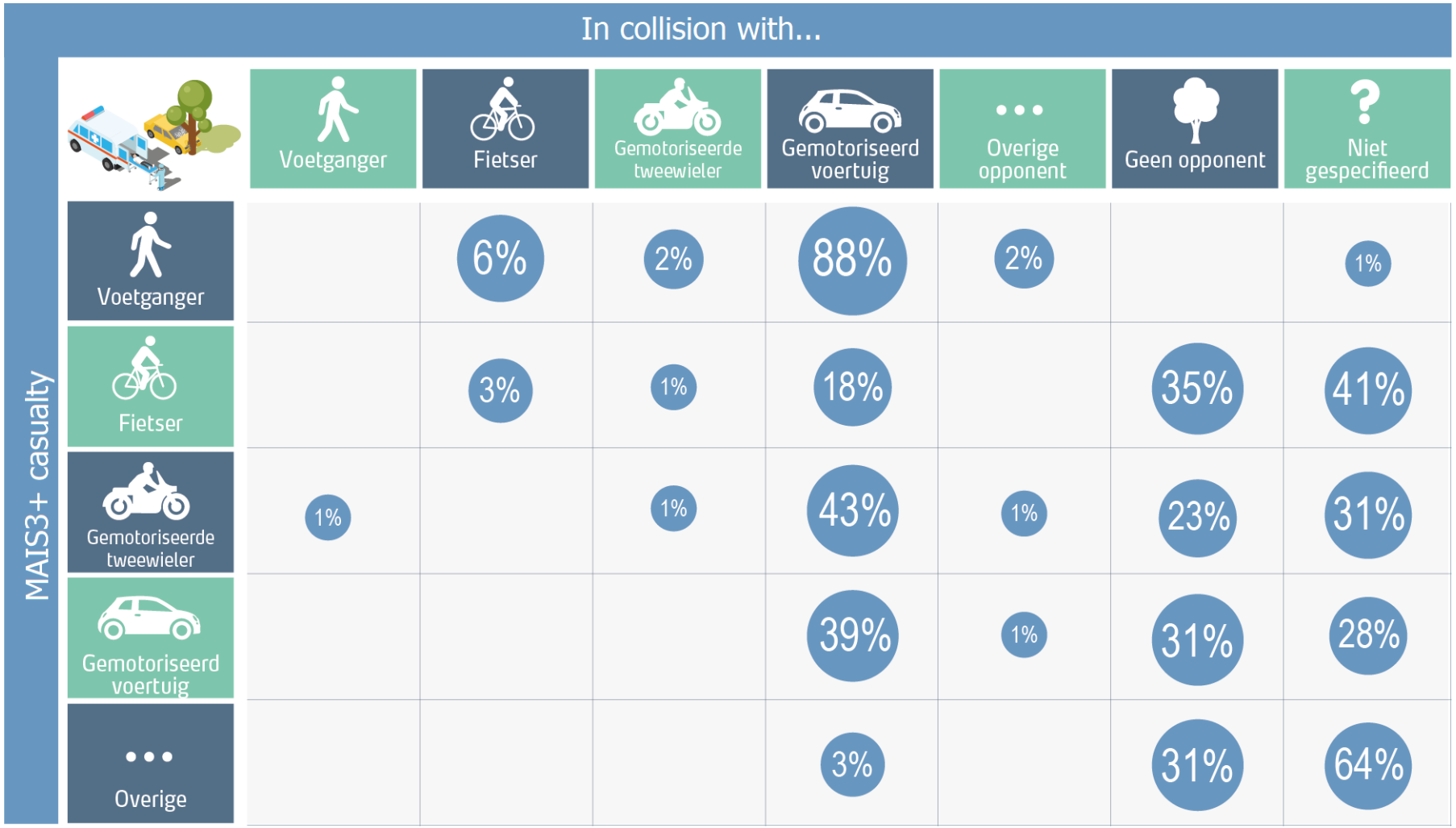
## Number of hospitalised MAIS3+ casualties




## Distribution of MAIS3+ hospitalised casualties

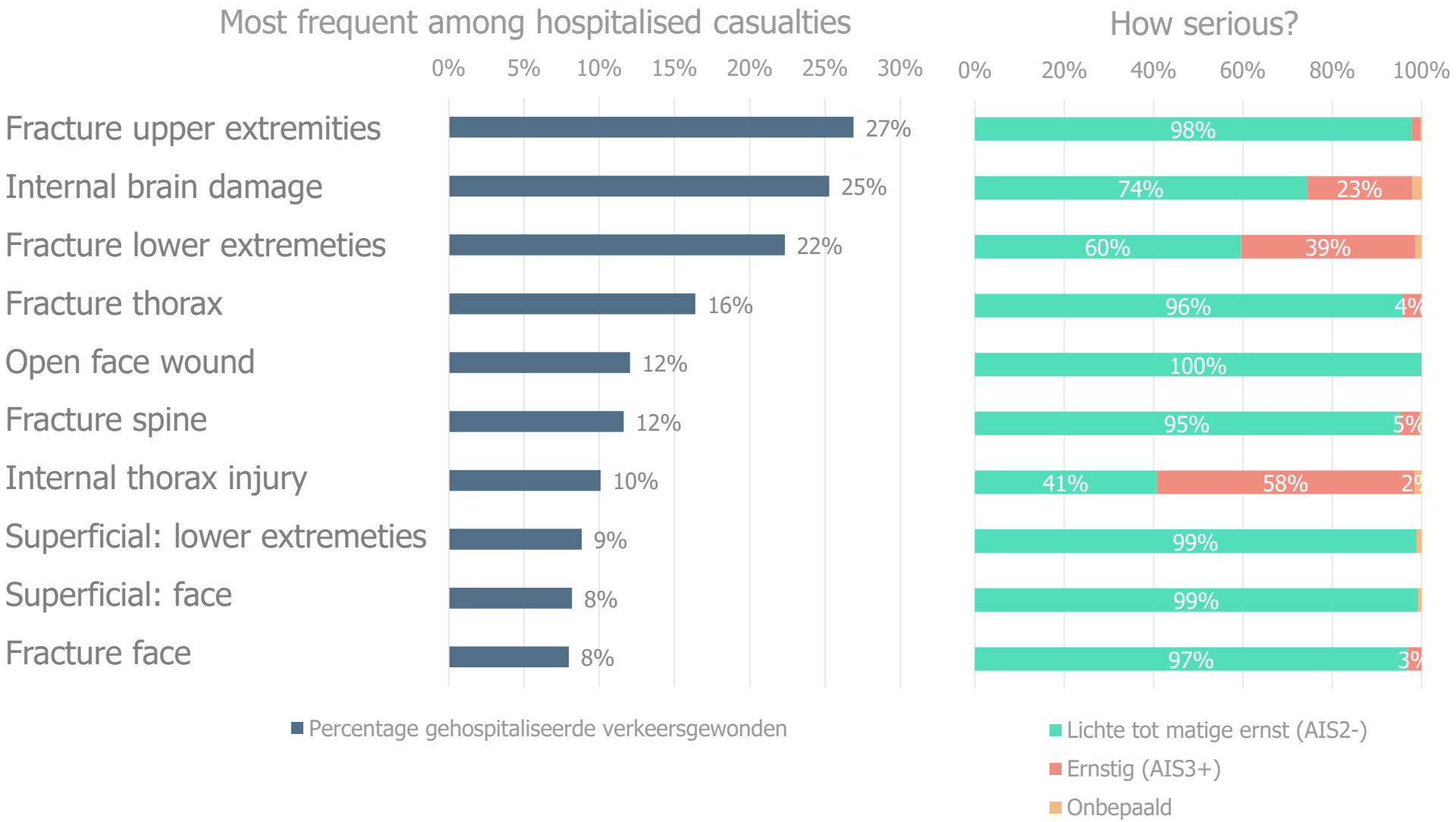


# Distribution of MAIS3+ according to road user type of casualty and opponent (2019)

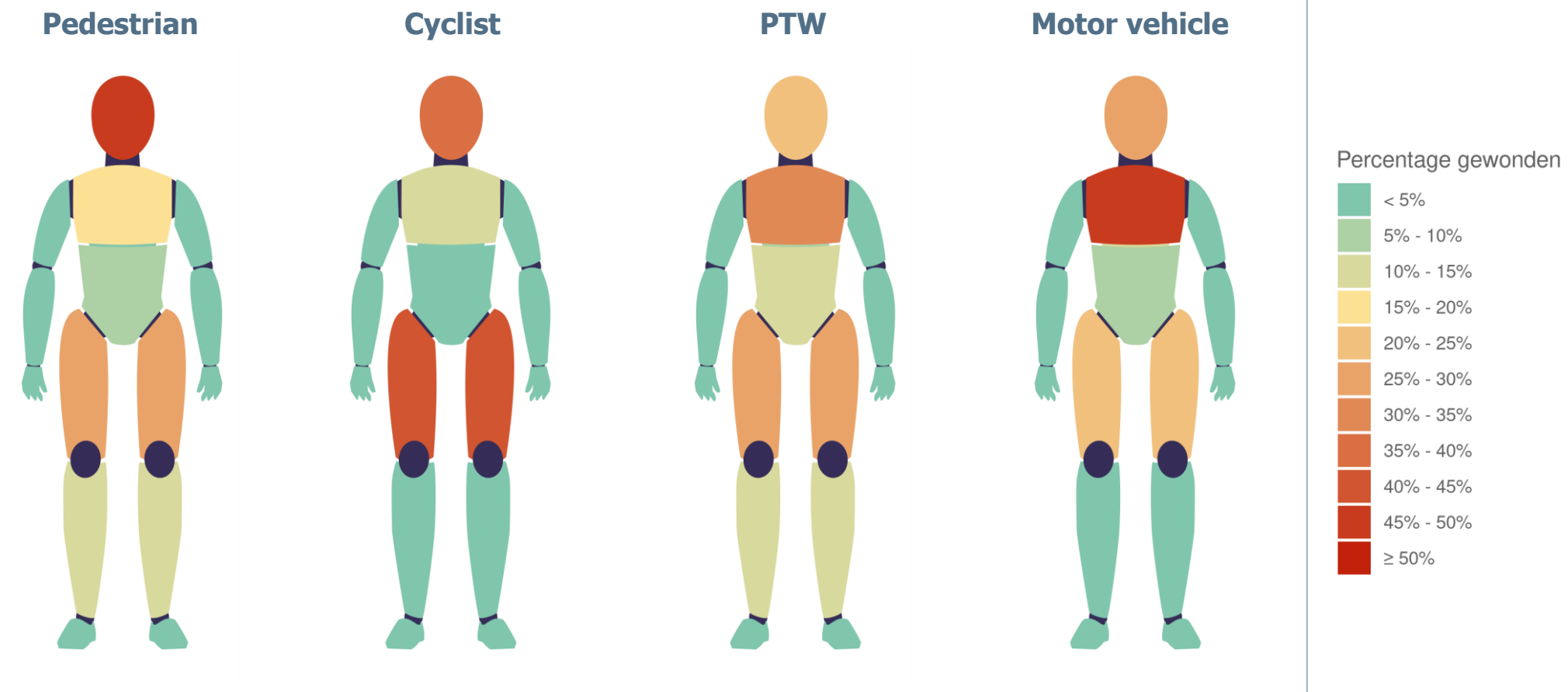


# Which injuries?

# Frequenty (left) and severity (right) of the **top 10 injuries** among hospitalised casualties (2016-2020)



# Distribution of AIS3+ injuries for MAIS3+ casualties per RU type (2016-2020)



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# Comparison hospital and police data

# Comparison police and hospital data

## Police registration

**Seriously injured** = hospitalised for at least 24 hours

## Hospital registration

**Hospitalised** = at least one night in hospital



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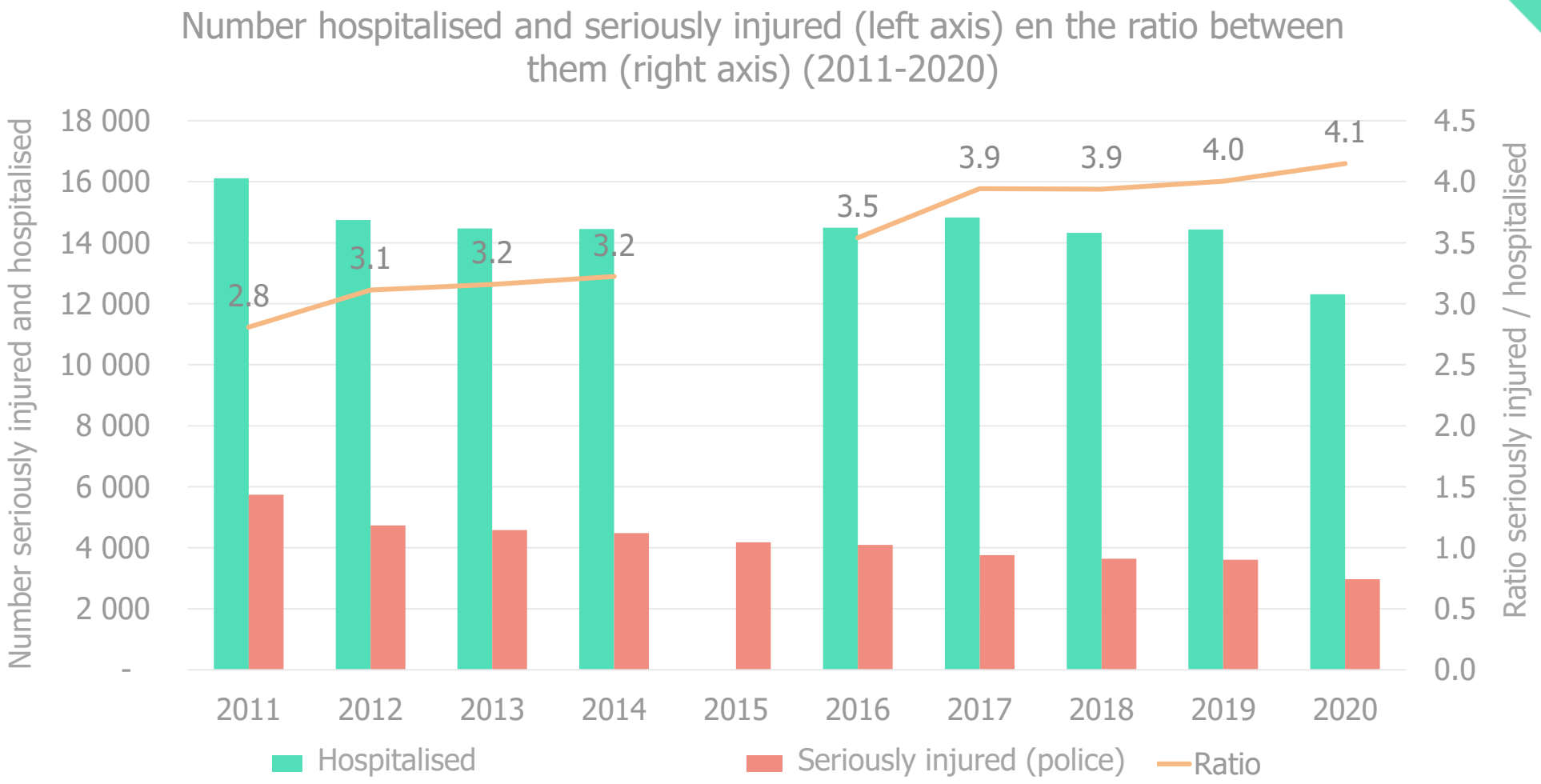
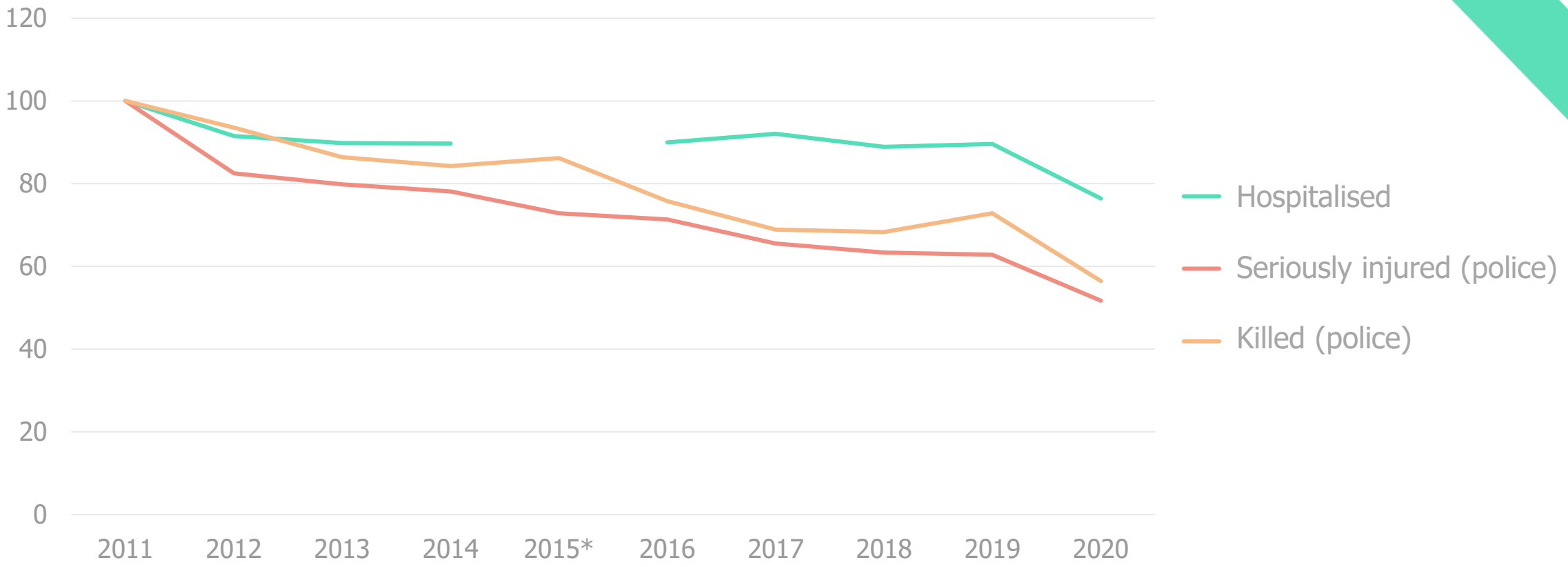
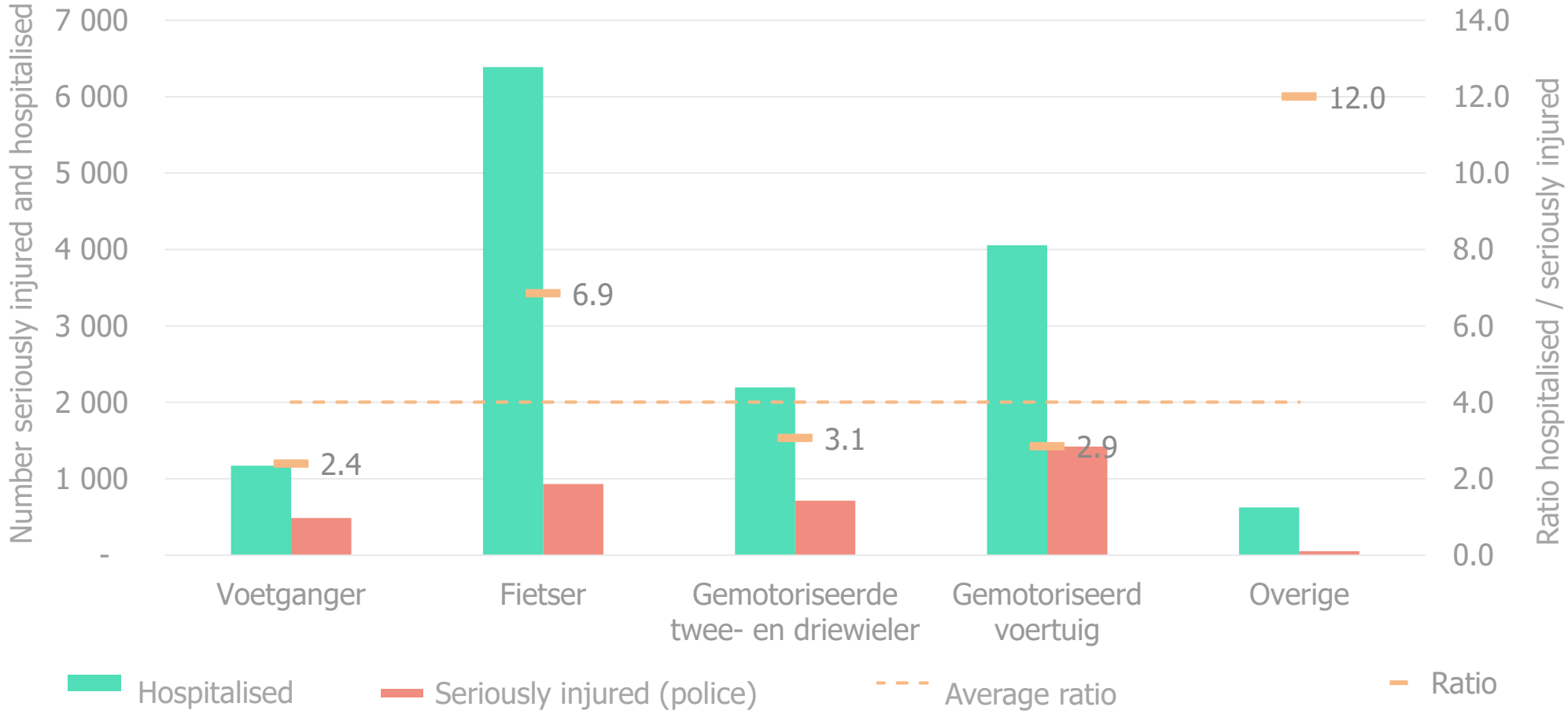

Number hospitalised and seriously injured (left axis) en the ratio between them (right axis) (2011-2020)
Number seriously injured and hospitalised
Ratio seriously injured / hospitalised
18 000
16 000
14 000
12 000
10 000
8 000
6 000
4 000
2 000
-
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2.8
3.1
3.2
3.2
3.5
3.9
3.9
4.0
4.1
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Hospitalised
Seriously injured (police)
Ratio

## Evolution killed and seriously injured (police) and hospitalised 2011-2020 (2011 = index 100)



Aantal gehospitaliseerde gewonden en het aantal zwaargewonden geregistreerd door de politie (linkse as) met de corresponderende gewondenratio (rechtse as) per **weggebruikerstype** (2019)



# Conclusions

## MAIS 3+

- **Cyclist injuries largest share and increasing numbers**
  - For all hospitalised
  - -> also for MAIS 3+
- **Most frequently sever injuries**
  - Internal thorax injuries (PTW, MV occ)
  - Internal brain damage (Ped, Cycl)
  - Lower extremety fractures (Cycl, PTW)

## Comparison to police data

- **General underreporting**
  - 1 seriously injured casualty in police data = 4 hospitalised casualties
- **Cyclists**
  - 1 seriously injured cyclist in police data = 7 hospitalised cyclists



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# Discussion

- **Possibility to "enrich" police data by calculating correction factor.**
- **How to?**
  - Casualty data = OK
  - What about crash data?
  - What about variables not included in hospital data?
- **Communication**
  - Present 2 values?
    - # registerd
    - (estimated) # of hospitalized
  - Confusion?
  - Reaction other stakeholders (police, statsoffice)?



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# Thank you for your attention!

For all questions:

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