

Injuries suffered as the result of being involved in a road accident: what are the specific details regarding cyclists and motorcyclists?



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Dupont, E. & Meunier J.-C. (2017) Lésions subies suite à l'implication dans un accident de la circulation: Quelles sont les spécificités des cyclistes et des motards ? Bruxelles, Belgique : Vias Institute – Knowledge Centre

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Summary

In Belgium the proportion of two-wheel transport – bicycles and motorcycles – on our roads is still relatively small, although the use of pushbikes has increased in recent years. Despite the fact that two wheels represent a method of transport that is only 'minor' compared with cars, the particularly high risk run by cyclists and motorcyclists has been highlighted clearly in the literature.

The aim of this report is both to try and give substance to the heightened risk run by bicycles and motorcycles on our roads, as well as to shine a light on the situation in Belgium with regard to the consequences of the accidents suffered by these road-users (i.e. by cyclists and motorcyclists). To achieve this aim, this report provides a detailed analysis of the nature and severity of the injuries suffered by cyclists and motorcyclists as the result of traffic accidents. The data used in the report relates to hospital admissions resulting from a patient's involvement in a road accident, as recorded by all Belgian hospitals between 2009 and 2011. In order to obtain a good overall view of all of the injuries (even minor ones) that may be suffered as the result of an accident involving a bicycle or motorcycle, both the data from day-patient hospital admissions (in other words admissions not requiring the patient to spend a night in hospital) and the information from so-called "classic" hospital admissions were analysed.

In line with the data from the existing literature, one of the first observations of this report is that the very high proportion of 'two-wheeler' users admitted to hospital contrasts sharply with the relatively low proportion of these users in road traffic as a whole. In fact, by way of example, cyclists and motorcyclists only represent 25.6% and 11.3% respectively of all users admitted to hospital in the classic manner (for at least one night) between 2009 and 2011 and 'supposedly'¹ as the result of a road accident.

Beyond the issue of frequency, the analyses conducted in the report also made it possible to investigate the seriousness of the injuries suffered by bike and motorcycle riders, as well as the predominant types and locations of the injuries, based on certain socio-demographic data (e.g. the age and gender of the victims).

Where the severity of injuries is concerned, the data differs according to the type of hospital admission analysed. With regard to day-patient hospital admissions (where there is no overnight stay), cyclists and motorcyclists suffer more serious injuries than other road-users. Among other factors, these figures stand out for the higher proportion of moderate-to-severe injuries incurred (i.e. 60% of MAIS2+ injuries, compared with under 40% for pedestrians and the occupants of motorised vehicles). For classic hospital admissions, the reverse tendency is seen for bicycles, whereas motorcycles represent a higher level of severity similar to other road-users (i.e. pedestrians and the occupants of motorised vehicles). The rise in injury data with age suggests that older cyclists tend to suffer far more serious consequences from accidents, whereas there is no obvious relationship between age and the severity of injuries for motorcyclists. Taken overall – and to a greater extent for younger road-users – the consequences of more severe injuries for motorcyclists are greater than for cyclists. Overall, women tend to present with less serious injuries than men. However, this observation is not limited to bicycle and motorcycle riders, but applies to all users without any distinction.

With regard to the location of injuries, the areas of the body affected most frequently for cyclists are injuries to the upper limbs (28% to 59%, depending of the type of hospital admission), head injuries (23-35%) and injuries to the lower limbs (14-19%). For forms of motorised two-wheel transport, the main injuries are to the lower limbs (33-53%) and upper limbs (28-30%), as well as, to a lesser extent – although still substantial – injuries to the head (8-19%) and thorax (6-15%). As age increases, certain types of injury are seen less frequently (e.g. head trauma), whereas other types become more frequent (injuries to the lower limbs for cyclists and injuries to the torso for motorised forms of two-wheel transport). Gender does not have an effect on the location of injuries. This can be seen both for cyclists and motorcyclists.

In terms of the type of injury, there is a fairly similar pattern for both cyclists and motorcyclists. Fractures represent the highest proportion of the injuries observed, with almost half of all admissions (for both day-case admissions and for classic hospital admissions, as well as for both cyclists and motorcyclists). For day-patient

¹ In this instance we use the term 'supposedly' because, in particular for pedestrians, there is the question of whether a hospital admission is the result of a road accident or some other type of accident (e.g. domestic). This is because there is a lack of clear and unambiguous indicators from the admission registration records. This point, which will be discussed in greater detail in this report, also suggests that the figures we present here are significantly understated, because a substantial proportion of pedestrians should not be counted in the total number of road-users. Indeed, if we exclude the pedestrians whose involvement in a road accident is not certain (based on the data available from hospital admission records), cyclists represent 39.0% of admissions, with motorised forms of two-wheel transport at 17.9%.

admissions the types of injuries encountered most frequently, after fractures, are dislocations, open wounds and contusions/superficial injuries (between 7 and 19%). For classic hospital admissions, the main cause is internal injuries (approximately 25%).

This report has also been able to clarify for cyclists the various impacts that accidents have, depending on whether a motorised vehicle was involved or not. The report shows that the involvement of a motor vehicle has a major impact on the effects of an accident, as well as on the various severity indicators (e.g. mortality rate, seriousness of injuries, length of hospital stay and number of injuries). There is also an obvious impact on the location of injuries. So, when a motor vehicle is involved, there are proportionately fewer injuries to the upper limbs, but almost double the level of serious head injuries.

Finally and based on the results observed, this report presents a series of recommendations specifically for cyclists and motorcyclists. As far as cyclists are concerned, any recommendations relate mainly to improving roadways in order to achieve better "cycleability" (i.e. to have a cycleway network that is clear, consistent and 'protected' from motor vehicles), as well as more encouragement to wear a helmet - particularly among young people, but also for older cyclists. As for motorcycles, it would be a good idea, among other things, to encourage measures that improve their visibility and ideas for making it easier for other road-users to see them.

