



Cycling in Scotland:
a review of cycling casualties, near misses
and under-reporting

Executive summary

Mairi Young, Bruce Whyte

Glasgow Centre for Population Health
February 2020

Cycling in Scotland: a review of cycling casualties, near misses and under-reporting

Executive summary

Background: The benefits associated with cycling include improvements to physical and mental health, and a positive impact on the wider economy and environment. Cycling levels in Scotland are increasing yet remain low compared with other European countries. This review combines analysis of reported cycling casualties in Scotland in the 23-year period from 1995-2018 with a literature review of under-reporting of casualties and near misses. Data was derived from the police recorded Stats19 system which records road traffic accidents in which a vehicle was involved and where at least one person was injured.

The key findings include:

- In the whole period examined (1995-2018) reported cycling casualties of all types reduced by more than half, but the rate of serious injuries and fatalities increased by 18% between 2004-2018.
- Most (82%) casualties were male.
- Far fewer children were casualties in 2018 compared with 1995.
- In recent years cycling casualties were highest among young to middle aged adults; in the last five years 65% of all casualties were in the age range 25-54 years.
- The majority (84%) of cycling casualties involved a car and one-in-ten occurrences were hit and run incidents.
- There were small but notable increases in cyclists killed and seriously injured at roundabouts, the pedestrian phase of traffic signal junctions, and where vehicles were turning right.
- Pedestrian casualties arising from a cycling collision were rare (1% of crashes resulting in a pedestrian injury between 2014-18 involved a bike).
- Unlike cycling participation and access to bikes, cycling casualties were not skewed towards wealthier demographics.

- In 2018, 52% of cycling casualties were wearing a helmet; 26% were not; and for 22% of casualties it was not recorded whether or not they were wearing a helmet.
- E-bikes are not currently recorded on Stats19 however there is no evidence of an increased likelihood of an e-bike being involved in a crash compared with a pedal bike.
- It is important to note that studies have shown that reported figures (from Stats19) for slightly and seriously injured cycling casualties are substantially under-estimated, by approximately half. In 1% of reported cycling casualties involving a vehicle there was no collision: this suggests a near miss. However, near misses are considerably under-reported. Thus, police recorded data do not reflect the rate of near misses that cyclists experience on a daily basis.

Near misses occur more frequently than collisions and are significantly associated with an increased perception of risk related to cycling. Therefore, near misses can negatively affect cycling experience more so than collisions. Due to under-reporting and inadequate information on cycling prevalence and distances cycled by different population groups it is difficult to accurately determine the risk associated with cycling in Scotland. Yet there is a high *perception* of risk associated with cycling in Scotland which contributes to low cycling uptake. Meanwhile European cities with high rates of cycling have better safety records for all road users, and the perception of risk is so low that few people wear safety equipment such as helmets.

Discussion: In the UK, men are three times more likely to cycle than women, although there is less of a gender imbalance in the use of cycle hire schemes. Image is a contributory factor to the gender divide in cycling uptake and women express higher concerns about risk compared with men. Cycling is not viewed as socially acceptable among many ethnic communities due to appearance, and associations with cycling and social status. Hostile and dangerous driver behaviour, lack of driver awareness, and stereotypes surrounding people cycling were associated with an increased likelihood of near misses or collisions. Driver error was reported as the primary contributory factor in 63% of cycling-driver collisions between March 2018-

April 2019. Negative attitudes and stereotyping of cyclists predict aggressive behaviour towards cyclists.

In Scotland we need to make cycling safe, affordable and accessible for all. This can be achieved by making sure safe cycling infrastructure (including new bike hire schemes) is equally available in deprived and affluent areas, by supporting more bike inclusion schemes (like Bikes for All), and by reducing road speeds particularly in urban settings. An integrated transport system, where a bike can take you from door to door, and a comprehensive cycling network which is separated from motorised traffic, can reduce the risk of injury and improve cycling uptake.

Investment in cycling needs to be sensitive to existing inequalities and to avoid exacerbating these further. In the UK cycling uptake is higher among higher income groups. In comparison, people in low-income households in Denmark still make a quarter of daily trips by bike. The wider benefits and relevance of active travel is recognised across a range of policy areas. Increasing levels of active travel can contribute to reducing carbon emissions and air pollution and to improving mental and physical health, and active travel is seen as a key component of more liveable, sustainable towns and cities.

Conclusion: To our knowledge this is the most up to date detailed study of cycling casualties and near misses in Scotland. These findings add to the evidence that motor vehicle speed, infrastructure, cultural norms and individual attitudes are key mechanisms which influence cycling participation and contribute to physical and perceived risks of cycling. Scotland's target of net-zero emissions of all greenhouse gases by 2045^a demands a shift away from cars to sustainable transport modes including cycling.

^a Including Glasgow and Edinburgh's net zero emissions target by 2030.

Recommendations:

In order to achieve these targets and improve safety for cyclists we recommended the following actions:

1. There should be new and accurate monitoring data of who cycles and how far in order to calculate risk when cycling and monitor progress in shifts towards lower carbon modes of transport.
2. Ethnicity and type of bicycle (i.e. pedal bike or e-bike) should be included on Stats19 reporting forms to better understand the contextual factors and demographics of cycling casualties.
3. Improvements to police investigation of cycling casualties should be introduced to strengthen cycling safety as a priority.
4. The Government should agree to substantial and sustained Government investment to increase spending levels in line with European countries with high cycling rates and enact policies which generate a modal shift from car use to active travel.
5. There should be substantial and sustained investment in quality cycling infrastructure, protected from motor vehicles, and retrofitting the existing road system to reduce danger where required.