

Bicycle protection laws in Singapore: are more compelling data still needed?

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Bicycling may seem like a relatively infrequent and unimportant activity in Singapore because bicycling as a means of regular transportation in Singapore is low (<1%). However, bicycling is on the rise with the growing number of cycling enthusiasts. In addition, there are many non-resident unskilled or semiskilled work-permit holders who use bicycles primarily as a form of transport in Singapore. Traffic trends provided by the Traffic Police reported that cyclist fatalities rose 29% (12 to 17) from 2001 to 2003, while reported non-fatal injuries rose 10% (319 to 354) from 2000 to 2003⁽¹⁾.


In Singapore, bicyclists are prohibited from riding on expressways and pedestrian pavements, but are allowed to ride on all other roads without a licence. In view of the apparent small number of bicyclists, compared to other road users, and the land-scarce Singapore, there are no compulsory helmet laws. Neither are there any bicycle lanes⁽²⁾.

The question is: how strong is the evidence for the effectiveness of helmets? A systematic review of five case-controlled studies published in the Cochrane Library, found that helmets reduced the risk by 63-88% for head, brain, and severe brain injuries among cyclists of all ages⁽³⁾. Four of the studies controlled for a series of important covariates⁽⁴⁻⁷⁾. Helmets seemed equally effective in reducing injuries in crashes involving motor vehicles and in accidents associated with falls and other causes.

Ecological time series analysis examining all admissions to NHS hospitals in England over a four-year period, found that head injuries as a proportion of monthly admissions for trauma related to bicycles fell from 40% in 1991-2 to 28% in 1994-5, while total emergency admissions for trauma related to bicycles did not change. These changes showed a consistent year to year trend in which the proportion of head injuries related to trauma from bicycles became lower in each successive year⁽⁸⁾. Similar findings from ecological studies have also been reported in the United States, New Zealand, and Australia⁽⁹⁻¹²⁾.

What about our local data? In this issue of the Singapore Medical Journal, Heng et al⁽¹³⁾, has shown that only 10.6% of the 160 patients surveyed over a eight-month period wore bicycle helmets during the accident. Surprisingly, 54% of patients who believed that helmets protect against head injury did not actually wear one at the time of the crash. There was significantly less head injury (5.9% versus 40.0%, $p < 0.01$) and facial injury (5.9% versus 37.1%, $p < 0.05$) in the helmeted group compared to the non-helmeted group. It is also noteworthy that 14 (24.6%) of the patients who did not wear helmets, compared to 0% for those who wore helmets, had intracranial bleed. In addition, three (2.1%) of the patients, who did not wear helmets, died due to severe head injuries, compared to none in the helmeted group.

With such compelling local data, can we still afford to give people the option of wearing bicycle helmets during bicycling? Should we not legislate that wearing of helmets be compulsory for all bicyclists? In the same article, Heng et al showed that 69% of patients were hit on the road while cycling while 42% were knocked down by a motor vehicle. This suggests that we should perhaps build separate bicycle lanes in high-use areas. Even if we think that this measure may not be feasible in land-scarce Singapore, we could perhaps have limited bicycle laws on weekends and public holidays where recreational bicycling would be expected to increase.

We should encourage bicycling as a healthy alternative of commuting rather than making it a life-threatening experience! 

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