

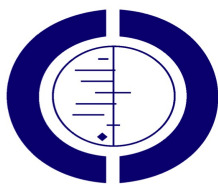
Do helmets work? the evidence

Summary of a talk delivered to a Cyclenation conference, 'winning the Arguments' Birmingham, 21st April 2012.



Thompson, Rivara and Thompson's 1989 (1) Seattle study published in the New England Medical Journal. It concludes 88% reduced risk of brain injury in helmet wearers. The study goes on to be widely quoted and is still cited to this day by helmet enthusiasts. Later methodological problems are found that invalidate the studies conclusions. The studies authors reveal their ideological bias in lobbying the Canadian Parliament

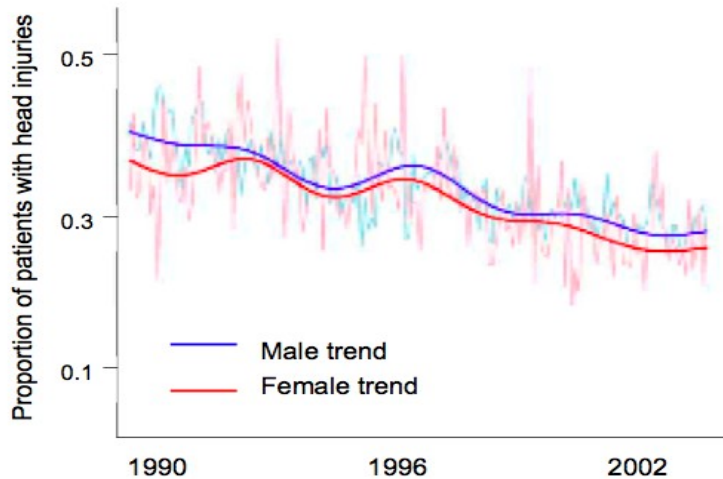
for helmet laws.



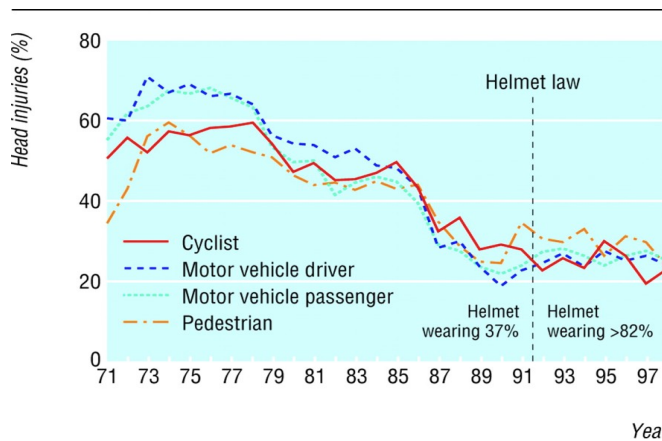
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1991-2, Australia passes an all ages helmet law, followed by New Zealand in 1994. In Australia cycling falls by about 30%, but by more among teenagers. To date they remain the only countries with comprehensive, well-enforced laws.

1996. The Cochrane Collaboration publishes a review (2) of case controlled research published thus far about helmets, concluding that helmets prevent between 63 – 88% of cyclist head injuries. Most of the data (77%) comes from the authors' own research. Later work (3) shows the studies reviewed to have systematic errors, bias and methodological problems.



2005. Hewson (4) reviews trends in child cyclist head injuries in the UK and can find no effect from the diverging trend in wearing, between boys and girls.



2006. Robinson publishes research (5) revealing sudden large increases in helmet wearing in five different jurisdictions, did not alter head injury trends. The case controlled studies predictions of a large protective effect are now directly contradicted by better-designed, more reliable research.



Research emerges (7,8,9,10,11) suggesting possible reasons why helmets may not work. These include such things as behavioural change ('risk compensation') by cyclists and drivers, cycle helmet design flaws and the possibility that brain injury due to rotational forces could be worsened by helmets. The area remains controversial. New Zealand government figures (12) show cycling trips have declined by about 50% with a higher injury rate per km travelled for cyclists.

2009. The traditionally pro helmet DfT publishes a review of the evidence (6) that finds great problems with existing helmet research. It cannot say from their literature review if helmets help or not. The executive summary omits this factual finding, giving prominence instead to an opinion- based review of cyclist fatalities, predicting helmets 'should' prevent 10-16% of cyclist fatalities.

Elvik, from Norway's Traffic safety Institute publishes work (9) suggesting cyclists wearing helmets are more likely to be in accidents. Later work (3) suggests great problems with bias in the earlier case controlled research and no overall protective effect from helmets. The Norwegian government decides against helmet compulsion.

2012 de Jong (13) publishes work looking at the overall public health effect of helmet laws, using a mathematical model that can be adapted to take account of different estimates of the risk/benefit ratios of cycling and the differing estimates of helmet effectiveness. If the most optimistic helmet figures are used (88% protection) only 1 cyclist in 50 needs putting off before overall public health is harmed.

References

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