

Reduced Speed Travel

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Overview



Recent research suggests that there are still substantial benefits to be gained by introducing an across-the-board reduction of speed limits to 50km/h on all types of urban and metropolitan roads that presently have a 60km/h speed limit^{1,2}.



Research shows that even a small decrease in speed significantly reduces the likelihood of a crash. If a crash does occur, slower speeds limit the severity of injuries³. Importantly, speed reductions significantly reduce fatalities and serious injuries, with speed limit reductions from 40km/h to 30km/h observed to result in a 67% decrease in serious and fatal injuries in Canada⁵. An analysis of 20 years of data from London found that introducing 32km/h speed limits resulted in a 32.4% decrease in pedestrian injuries⁶.



The Issue

Preventable harm from using the road system is a pervasive problem in Australia, with approximately 1,100 lives lost and 39,000 individuals hospitalised per year⁷. Road users such as pedestrians, motorcycle riders, and cyclists are particularly vulnerable and have little to no protection in the event of a crash⁸.

In average conditions, a car travelling at 60km/h will take 45m to stop in an emergency braking situation. A car braking from 65km/h will still be moving at close to 32km/h after 45m travelled⁹.

The risk of involvement in a casualty doubles with each 5km/h increase in free travelling speed above 60km/h¹⁰. A driver crashing at an impact speed of 80 km/h is twice as likely to be killed as a driver crashing at 60km/h¹¹.

The probability of a pedestrian fatality in a collision involving a vehicle increases rapidly if the speed at impact is above 40km/h^{9,12}. Figure 1 illustrates the relationship between increasing vehicle speed and pedestrian risk of death in the event of a collision for four studies.

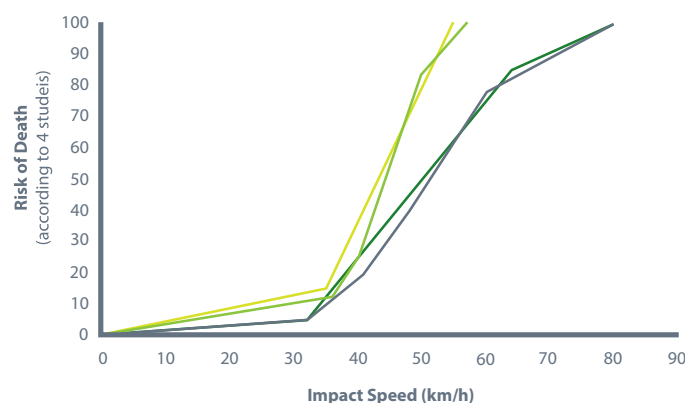
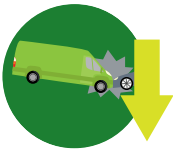


Figure 1: Relationship between impact speed and risk of death

Benefits of Reduced Speed



Crash reduction: Substantial literature has established that reduced speed limits result in an approximate 13% reduction in crashes⁴. This is attributed to several benefits of travelling at a lower speed, including:

- **Improved reaction time and shorter braking distance:** Reduced speed allows the driver more time to react and leads to a shorter braking distance, increasing the driver's ability to take action to avoid a collision which could lead to substantial vehicle damage and potentially cost lives¹³. This is illustrated in Fig. 2 below.
- **Increased field of vision:** as a driver increases speed, their field of vision narrows, reducing a driver's ability to observe and react to their environment¹⁴.

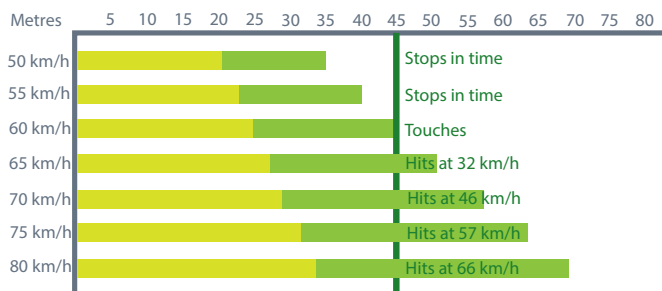


Figure 2: The combined effect of reaction and braking time



Road user protection: Decreases in speed reduce not only the incidence of a crash, but also the risk of injury in the case of a crash. Reducing speed has been found to be one of the most effective ways to minimise collision-related injuries and fatalities¹⁴.



Reduced fuel cost: Aggressive braking and accelerating are caused by increased speed^{13,15}. They are also the biggest generator of fuel consumption and vehicle emissions. Traffic speed in CBDs and other urban centres average 35-37km/h; thus, decreasing the speed limit from 50km/h to 40km/h has very little effect on decreasing travel times and decreased speed limits to match actual travel speeds has the effect of reducing sudden acceleration and braking. This results in better fuel efficiency for drivers^{16,17}.



Economic benefits: A 2001 evaluation of reducing Australia's default urban speed limit from 60km/h to 50km/h found a net benefit of between \$14 and \$34 million per year. These savings are derived from estimates of casualty crash savings (i.e. lives saved and long-term health losses prevented), reduction in property damage, and reductions in vehicle emissions¹⁸.



Environmental sustainability: Aggressive braking that accompanies increased travel speed leads to higher levels of wear and tear, while excessive acceleration increases emissions. As a result, speeding not only increases a vehicle's maintenance and repair costs, but can also contribute to adverse health (e.g. respiratory infections) and environmental (i.e. photochemical smog, acid rain, death of forests, or reduced atmospheric visibility) effects by reducing air quality.



Physical health and social benefits: A 32km/h (20 mph) speed limit pilot scheme in South Central Edinburgh, UK, found that the lower speed limit was strongly supported by residents. The study reported improved safety for children walking and playing, and improved walking and cycling conditions. There was a 7% increase in the number of trips walked, a 5% increase in the number of bicycle trips and a 3% reduction in car journeys in the year after the scheme was introduced¹⁹.

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