• As more and more people are turning to bicycle riding for its acknowledged health and environmental benefits, improving the safety of cyclists is a priority.
• Each year, an average of 35 cyclists are killed and over 2,500 are seriously injured on Australian public roads.¹
• There are many strategies to improve cycling safety at a community and an individual level.

The Facts

Cycling in Australia
• Cycling is an important form of transport and recreation for many Australians. It is accessible to a wide range of people and has significant health and environmental benefits for the community.
• 2010 has continued a decade of dominance with bicycles outselling cars each year for the past decade by over 2,000,000. Over 1.3million bikes were sold in 2010. These figures represent a 12% increase from the previous year and a 67% increase from 2001.²
• The sales of bicycles are supported by figures released by the Australian Government indicating a 32% increase in people choosing to ride a bike in the same period.²
• In terms of ownership, half of Australian households now own one or more bicycles, with the highest level of bicycle ownership occurring in ACT households (65%).³
• Over 1.9 million Australians now cycle and 2008 saw the largest ever increase in cycling. 60% of Australian children cycle regularly and cycling is now the 4th most popular physical activity behind walking, aerobics and swimming.³
• Australians are choosing the bicycle for transport, recreation, fitness, general health and sport in increasing numbers. The choice to ride a bicycle is increasingly broadly based across the entire population, not just the domain of the fit and sporty.²
• Gearing up for active and sustainable communities: National cycling strategy 2011-2016 has recently been released. Signed by all federal, state and territory transport ministers, the National Strategy aims to double the rate of cycling by 2016.³

Australians’ participation in cycling 2009 by State/Territory⁴&⁵

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>15yrs+</th>
<th>Children under 15 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>16.8%</td>
<td>63.3%</td>
</tr>
<tr>
<td>NSW</td>
<td>9.0%</td>
<td>56.4%</td>
</tr>
<tr>
<td>NT</td>
<td>13.8%</td>
<td>71.9%</td>
</tr>
<tr>
<td>Qld</td>
<td>10.6%</td>
<td>56.3%</td>
</tr>
<tr>
<td>SA</td>
<td>9.6%</td>
<td>62.7%</td>
</tr>
<tr>
<td>Tas</td>
<td>8.9%</td>
<td>68.6%</td>
</tr>
<tr>
<td>Vic</td>
<td>12.8%</td>
<td>65.6%</td>
</tr>
<tr>
<td>WA</td>
<td>14.5%</td>
<td>64.0%</td>
</tr>
</tbody>
</table>

Fatality and injury trends
• Cyclists account for around 2% of road deaths and about 11% of those seriously injured on the road in Australia each year.¹
• In 2006-07, pedal cyclists accounted for 17.8% of hospitalisations in Australia resulting from land transport accidents.⁶ Many more minor injuries do not show up in official statistics.
• These figures must be understood in terms of how much road transport is done by bicycle rather than other modes such as cars.
• Cyclist fatalities have decreased substantially and steadily since 1950 (from nearly 140 deaths in 1950 to 27 in 2008) and are relatively low compared with other road user groups.¹
• Cyclists have a higher representation among people seriously injured than killed, indicating that crashes are often not fatal.

Cyclist fatalities and injuries
• Cycling to work has been found to reduce all-cause mortality, over and above physical activity per se. So the health benefits of cycling outweigh any potential risks associated with crashes or breathing fumes.
• In fact, the authors of Cycling to health and safety, a report compiled by the British Medical Association, report a 20 to 1 advantage in life-years gained through cycling compared to those lost due to death and injury.⁷
• Nonetheless, cycling casualties do occur, and by taking a closer look at them, we can develop strategies to make cycling safer.
Characteristics of cycling fatalities

- In 2008, in Australia:
  - 27 fatalities were cyclists, down from 41 deaths the year prior.
  - the majority killed were male (25 males vs 2 females).
  - the majority killed were aged 26-59 years.
  - the majority of fatalities occurred on Monday [17], Friday [18], Saturday [16] and Sunday [21].
  - the afternoon period between 12-6pm was the most dangerous time for cyclist fatalities.
  - the highest number of fatalities by day of the week occurred on Sundays, especially between 12-6pm.

Cyclist deaths by State/Territory and road user group – 2007, 2008 and 5 year trend

<table>
<thead>
<tr>
<th></th>
<th>NSW</th>
<th>Vic</th>
<th>Qld</th>
<th>SA</th>
<th>WA</th>
<th>Tas</th>
<th>NT</th>
<th>ACT</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>2007</td>
<td>14</td>
<td>6</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>41</td>
</tr>
</tbody>
</table>

Average change 2003-8

-4.5  10.6  0.4  -16.3  18.2  -  -  -  0.0

Cyclist deaths by gender and age – Australia 2007 and 2008

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>0-16 years</th>
<th>17-25 years</th>
<th>26-39 years</th>
<th>40-59 years</th>
<th>60-69 years</th>
<th>70+ years</th>
<th>All deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>25</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>2007</td>
<td>37</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>11</td>
<td>16</td>
<td>2</td>
<td>0</td>
<td>41</td>
</tr>
</tbody>
</table>

* Includes road users of unstated gender or age

- The Australian Transport Safety Bureau (ATSB) examined the circumstances of fatal road crashes involving cyclists from 1991 to 2005* and reported:
  - 95% of cyclist deaths occurred on the ‘road reserve’ (the entire width between abutting property boundaries, including footpaths and cycle paths, where the way is open to the public for travel purposes). The road reserve is where road safety regulatory authorities can have an influence.
  - 86% of cyclist deaths resulted from a collision between the bicycle and a motor vehicle.
  - In each of the 5-year periods, the largest proportion of cyclist deaths occurred on roads where the speed limit was 60km/h. In 2001-05, the years in which 50km/h speed zones were introduced in many Australian cities and towns, 18% of cyclist deaths occurred in 50km/h speed zones.
  - In each of the 5-year periods since 1990 (ie. 1991-05, 1996-00 and 2001-05) males accounted for over 80% of cyclist deaths in road crashes. Males in the 10-19 and 70+ year age groups accounted for the highest percentages of cyclist deaths in these periods. During the same periods, females in the 10-19 year age group accounted for some of the highest percentages of cyclist deaths relative to other age groups of female cyclists, although the numbers were smaller and less pronounced.
  - Over the 15 year period, slightly higher proportions of cyclist deaths occurred on weekdays than on Saturdays or Sundays.
  - About 30% of cyclist deaths on weekdays occurred between 3-6pm. Similar patterns were evident in each of the 5-year periods.

Further, the ATSB conducted an in-depth examination of coronial data on fatal road crashes involving cyclists and found:

From 1996 to 2004:
  - the most frequently assigned major factor in cyclist fatalities was the failure of cyclists and other road users to observe each other on the road.
  - the most common fatal crash type was the cyclist being hit from behind by a motor vehicle travelling in the same lane in the same direction. Cyclists riding on rural roads were particularly vulnerable to this crash type.
  - the next most common fatal crash type was the cyclist riding from the footpath into an intersection or road and being hit by an oncoming vehicle.

From 1996 to 2000:
  - most cyclist deaths resulted from crashes involving cars (40%), followed by trucks (33%).
  - about two-thirds of crashes occurred mid-block and one-third within an intersection.
  - in the 46 crashes where the cyclist was run over from behind, 22% of the drivers failed to see the cyclist, 11% were under the influence of alcohol or drugs and the vision of 10% was obscured for some reason (eg. glare).
- nearly one-third of male and female cyclists killed were not wearing a helmet at the time of the crash.
- where tested, nearly 90% of the fatally injured cyclists’ blood alcohol concentration (BAC) was zero.
- in 86% of crashes, the weather was fine at the time of the crash.

This is currently the only Australia-wide data available on this issue. The factors highlighted – alcohol, causal factors, atmospheric conditions, gender, collision partner and helmet usage – are unlikely to have changed significantly.

**Improvements in cycle safety**

Recognising the positive health, economic and environmental gains of cycling, much has been done in recent years in an effort to reduce bicycle fatalities and injuries and improve the safety of this vulnerable road user group.

- Australia was the first country to introduce compulsory cycle helmet legislation in the early 1990s. While the legislation continues to be a contentious issue among some members of the community, there is clear evidence that helmets provide protective benefits in the event of a crash. An ATSB study, which reviewed numerous epidemiological studies published during the period 1987 to 1998, found ‘overwhelming evidence’ in support of helmets for preventing head injury and fatal injury. The Cochrane review of bicycle helmet effectiveness found that helmets provide a 63-88% reduction in the risk of head, brain and severe brain injury for cyclists of all ages.

- Since the publication of the first Australia cycling: the national strategy 1999 - 2004, there has been a significant evolution and elevation of cycling in Australia’s social and political landscape. Gearing up for active and sustainable communities: National cycling strategy 2011 - 2016 has recently been released. In order to drive forward progress on cycling and coordinate activity across the country, the Australian Bicycle Council (ABC) was established in 1999 and is made up of representatives from the Commonwealth Government, each state and territory, as well as the cycling industry and cyclist user groups. A key role of the ABC has been to oversee and coordinate the implementation of the National Cycling Strategies. Of the six Australian states and two territories, five have cycling strategies, including Western Australia, New South Wales, Queensland, Tasmania and Victoria. Links to state cycling strategies can be found on the Cycling Resource Centre’s website www.cyclingresourcecentre.org.au/page/engineering_planning_bicycle_strategies_plans/124.

**Tips For Staying Safe**

- Obey the road rules, which are designed to improve the safety of all road users. Obeying the road rules might also help to improve motorist attitudes to cyclists and reduce aggression on the road.
- Fit bicycle lights and reflectors, especially for early morning, evening and night riding. Lights which flash are more likely to be seen by drivers.
- Wear highly visible light coloured or reflective clothing. Reflective clothing will make you more visible than light coloured clothing, especially if the reflective part moves as you pedal.
- Wear a standards approved and properly fitted bicycle helmet.
- Make sure that your bike is well-maintained and in good condition. You should be able to place your feet flat on the ground when sitting on the bike seat. For children particularly, a bicycle is not something to “grow into”. An incorrectly sized bicycle will be difficult to handle and places the rider at increased risk of injury.
- Supervise children under the age of 10. Children under the age of 10 have limited peripheral vision and are poor judges of the speed of approaching vehicles. Most cycling crashes occur at intersections, or junctions of different kinds of infrastructure. Take particular care in these locations, and try to be aware of path- or road-users.
- Be considerate of other path- or road-users, and ensure your intentions are clear to other road users by using clear hand signals when turning.

**Future Directions**

Gearing up for active and sustainable communities: National cycling strategy 2011 - 2016 sets out six clear objectives: enhanced promotion of cycling; improved infrastructure and facilities; integrated planning; improved safety; better monitoring and evaluation of programs; and the development of nationally consistent...
technical guidance for stakeholders to use and share best practice. Future directions to improve bicycle safety may include:

- The National Strategy aims to develop a robust and consistent approach to data to demonstrate the impact of cycling initiatives on a range of outcomes. Cycling has not been supported by a high level of investment and to help counter this, improved data collection will provide essential tools to help states, territories and local governments make the case for increased investment to realise the strategy’s goals.

- Improved monitoring and reporting on crashes involving cyclists by all states and territories to identify the type, number and severity of crashes in rural, regional and metropolitan regions. Improved data collection will facilitate more insightful analysis of the major factors contributing to bicycle crashes. This is especially relevant for the reporting of bicycle injuries. Official statistics on cyclist injury crashes are based on hospital data and police crash reports which, while accurately report fatalities, under-report non-fatal injury crashes.

- Continued investment in research to assess the causes of crashes, trial countermeasures, evaluate safety programs and develop and trial education campaigns.

- Identification and evaluation of best practice countermeasures for bicycle crashes.

- The development of safe cycling education interventions for cyclists and other road/path users.

- Consideration of cycling in safety audits and black spot identification programs.\(^3\)

- Continuous monitoring to reduce hazards such as surfacing irregularities and oversee road/path upgrades.

- Improved traffic engineering measures and cycle path/road networks allowing for greater coverage, linkage, separation from vehicular and pedestrian traffic, adequate lighting, vision around corners and single direction paths.\(^2\) Such measures need to take into account the heterogeneous nature of the cycling population which includes children, recreational riders, commuters and athletes.

- The rollout of a nationally consistent community bicycle skills training program, including trials as appropriate. Cycling proficiency training should target children aged 10-14 years.\(^3\)

- Visibility remains a key issue for cycle safety. Research and countermeasures to enhance the visibility of cyclists are a key priority.

- Improved vehicle design to reduce cyclist injury in the event of a crash with a motor vehicle. 4WD’s with their raised height and increased weight cause greater injury to pedestrians, cyclists and motorcyclists.

References


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