

# Adolescent risk-taking



- Injury is the leading cause of death and hospitalisation among young people<sup>1</sup>.
- Mortality rates resulting from injury among young people reveal strong associations with risk-taking behaviour, consistently involving transport and violence<sup>1</sup>.
- Males account for two-thirds of all injury-related deaths among youths aged 15-19 years<sup>5-6</sup>.

## State of the Road A Fact Sheet of the Centre for Accident Research & Road Safety - Queensland (CARRS-Q)

### THE FACTS

#### Who is an adolescent?

Perspectives regarding the age range of 'adolescents' range vary from study to study, often starting in the early teens and ending in early-adulthood. This Fact Sheet focuses on young people aged 10-24 years.

Adolescence is a time of heightened risk of injury due to increasing exposure to adult activities with limited parental supervision, such as driving. Risk-taking behaviour is critical to health adolescent development and is instrumental to establishing independence, gaining peer acceptance, and developing self-identity<sup>2</sup>. In the literature, and among the general public, there is an assumption that young drivers take risks intentionally<sup>3</sup>. However, not all risk-taking among young drivers is the consequence of an intention to drive recklessly. As inexperienced drivers, adolescents may lack critical driving skills such as hazard perception, attentional control and time sharing (i.e. allocating appropriate attentional resources and managing multiple driving tasks) to avoid risky behaviours on the road<sup>3</sup>.

#### Transport-related injury during adolescence

Injury is the primary cause of hospitalisation among young people, and the leading cause of hospitalisations for young males<sup>4</sup>.

During the period 2012-2016:

- Road crashes account for one-third of all injury-related deaths among adolescents aged 10-24 years<sup>5-6</sup>. In particular, there is a high increase in mortality resulting from road crashes during mid- to late-

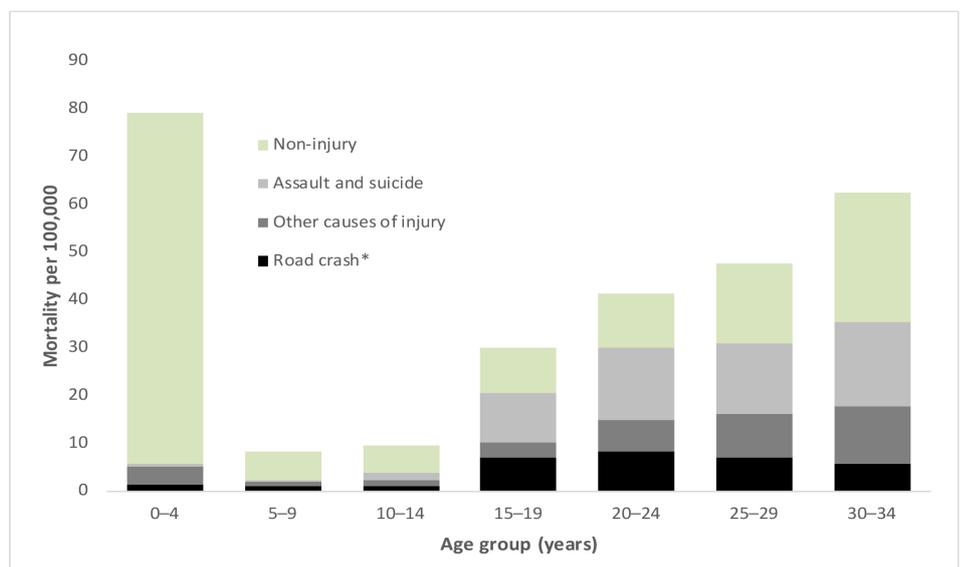
adolescence (i.e. between the age categories of 15-19 and 20-24 years), and a decline once adulthood begins (i.e. from 25 years onwards)<sup>6</sup>.

- Among adolescents aged 15-24 years who died in a road crash, almost half (48%) were drivers, and almost one-third (27%) were passengers<sup>6</sup>. The remainder 24% of road fatalities in this age group comprised pedestrians (8%), motorcycle riders (14%) and passengers (1%), and pedal cyclists (1%)<sup>6</sup>.
- Males account for two-thirds of all injury-related deaths and for 64% of road deaths among adolescents aged 15-19 years<sup>6</sup> (refer to Figure 1).

#### Adolescent brain development and risk

- Adolescents may be more prone than adults to take risks because of the way their brain develops. Primarily, the lower brain regions drive impulses and strong emotions, while the upper regions (i.e. prefrontal cortex) govern more complex mental processes, such as thinking, planning, and controlling emotions<sup>7</sup>. During adolescence, the lower parts of the brain develop faster than the frontal lobe<sup>7</sup>.
- The asynchronous development of the two regions means that adolescents may become more vulnerable to injury from exploration and taking risks, reinforced by their still inadequate ability to assess risk<sup>7</sup>.

FIGURE 1 - Yearly mortality by age and cause of death in Australia for the period 2012-2016\*



All data from this graph was sourced from GRIM (General Record of Incidence of Mortality) books 2016, Australian Institute of Health and Welfare (AIHW)<sup>5</sup>; with the exception of road crash mortality rates, which was sourced from Bureau of Infrastructure, Transport and Regional Economics (BITRE)<sup>6</sup>

## Factors influencing risks and risk taking when driving

### Alcohol use

- Alcohol is arguably the most significant risk factor for transport-related injury and death among adolescents<sup>8</sup>.
- Binge drinking is common among young people. In 2016, 42% of young people in Australia aged 18-24 reported to have consumed, on average, more than four standard drinks on one occasion; while 15% of young people from the same age group reported to have consumed more than 11 standard drinks on one occasion<sup>9</sup>.
- A study has found adolescent binge drinkers (aged 16-18 years) to be significantly more likely to experience more crashes than non-drinkers of the same age group (57% of binge drinkers reported experience with one or more crashes, compared to 18% of non-drinkers). Adolescent binge drinkers were significantly more likely to engage in other risky driving behaviours such as using a mobile phone, running amber lights, and crossing no-passing lanes to overtake other vehicles (i.e., approximately three times more likely to engage in these risky behaviours than non-drinkers of the same age group<sup>10</sup>).

### Mobile phone use and distraction

- Please refer to CARRS-Q's Mobile Phone Use & Distraction Fact Sheet for more information.

### Speeding

- Please refer to CARRS-Q's Speeding Fact Sheet for more information.

### Peer influence

- Peer approval is a key driver of adolescent intentional risk-taking while driving<sup>11</sup>.
- Both passive and active social influences may affect adolescents' risky driving. Adolescents may be inclined to gain potential peer approval or popularity by driving in a risky manner<sup>3</sup>.
- Research found that adolescents experienced more crashes in the presence of passengers who suggested a preference for risk taking, and actively provided suggestions for risky driving decisions. Adolescent passengers were also found, to a lesser degree, to exert passive peer pressure by simply being in proximity of the driver<sup>11</sup>.

### PROTECTIVE FACTORS

- A whole-of-community approach to educating adolescents in risk prevention is proposed to be effective in reducing road crashes. For example, a resilience-building program in Australia that harnessed the support and buy-in from parents, teachers, healthcare professionals, as well as local universities, police, ambulance and emergency services, and motoring organisations was found to reduce the risk of crash among adolescents by 44%<sup>12</sup>. This longer-term, whole-of-community program was comparatively more effective in reducing crash risk than a 1-day workshop program that only focused on driving risks (which was not associated with crash risk)<sup>12</sup>.
- The ability to resist peer pressure to engage in risky driving increases with age as adolescents become adults<sup>7</sup>. While peers can increase intentional risk-taking behaviours among adolescents, adolescent

peers can also take protective steps to care for each other. A study by CARRS-Q suggested that peer disapproval for risky driving (i.e. using mobile phone while driving) may enhance persuasiveness of road safety messages, particularly for males<sup>13</sup>. As a protective factor, educational programmes may include a peer support focus to encourage friends to look out for each other while driving.

- Graduated driver licensing (GDL) is an effective intervention in reducing crashes among learner and provisional novice drivers in Queensland<sup>14</sup>. GDL is a developmentally-informed program that focuses on limiting risks in the driving environment in a progressive permit stage (e.g. by requiring adult supervision, and restricting night-time driving and other adolescent passengers) in early licensure. These limits are gradually removed as the young driver obtains their open licence, allowing for adolescents to mature out of the aforementioned developmental vulnerabilities for road injuries and fatalities<sup>14</sup>.

### CARRS-Q'S RESEARCH IN THIS AREA

- Evaluation of the P.A.R.T.Y. (Prevent Alcohol and Risk-related Trauma in Youth) program, Queensland.
- Evaluation of the RACQ Docudrama program.
- Development of a distracted driving program for the Australian Automobile Association (AAA).
- Investigation of road safety advertisements' persuasiveness for young drivers.

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