The Question:
Why are young men more likely to be involved in road crashes than young women?
This Q&A has been developed to explore the differences in the development and behaviour of young males and female drivers which can lead to an increased risk for road trauma.

Scope of the problem
Young drivers appear more in fatality statistics than any other age group. This is because younger drivers are five to 10 times more likely to incur injury because of a road crash, when compared to drivers from the safest age range. However, there are specific differences in the crash risk of these young adults based on their gender. Young men have consistently higher rates of death than young women, even when the differences in the circumstances of the road crash are taken into account.

The age group of 20-24 make up approximately 4% of the Australian population, however, males from this age group make up 10% of annual road fatalities, whereas women from this age group make up only 2% of road fatalities. In fact, in all but one age category of 50-59, males die in far greater proportion to their share of the population. Differences in crash risk between younger and older drivers is often attributed to physiological, psychological, and behavioural differences associated with age. For young drivers, their increased crash risk is known to be caused by not only driving inexperience and risk-taking behaviours, but lack of neurological development.

Over the past 10 years, young men have been involved in substantially more road crashes than young women. As can be seen from the graph below, from 2007-2016, on average there are 5.1 fatalities of women aged 17-25 per 100,000 people, whereas there is an average of 15.9 for young men.

These fatalities not only have a devastating effect for the lives of young people and their families, but also for the economy and health care system. The estimated yearly lifetime care cost of young drivers injured in road crashes is $493 million.
Risk-Taking Behaviour

Young drivers tend to find themselves in riskier circumstances because they overestimate their driving skills and abilities. In addition, they tend to under-estimate the risks and hazards associated with different road environments and the risks associated with their driving behaviours, such as using their mobile phone while driving. Self-reported risky driving behaviours by young drivers have been linked with a 50% increase in the risk of being involved in a road crash. Studies have shown that young drivers are more likely to exceed the speed limit, drive too close to other vehicles and signal poorly.

Whilst the risk-taking behaviour of adolescents and young adults can be considered normal as part of the developmental process, it can have serious injury consequences. Young adults are particularly susceptible to risk taking behaviour and injury causing behaviour, as the executive brain function has not finished being developed and the development of the skill to appreciate risk is still occurring.

Studies have shown that men are more likely to engage in risk-taking behaviour compared to women of the same age, from an early age. This is because young men are less likely to believe that they will get hurt when taking risks. In addition, men are more likely to see injury as a product of bad luck, rather than a result of controllable behaviours.

Why do males engage in more risky behaviour on our roads?

Several hypothesises have been developed to explain why men engage in more risky behaviours than women do. For example, one such hypothesis is that women do not necessarily evaluate the probability of negative outcomes differently than men; they simply assume that they would be more emotionally upset or harmed by negative outcomes, should these occur. An alternate hypothesis is that women assess the probability of unfavourable outcomes more greatly than men, without projecting any stronger negative reactions to these outcomes than do men.
Many other factors influence the behaviours of young drivers. These factors are shown on the following flow chart.

**Social and situational factors**
- Passengers
- Alcohol and drugs
- Social group and peers
- Mobile phone use
- Socio-economic status
- Fatigue

**Exposure factors**
- Time of day and week
- Amount of time on the road
- Environmental factors

**Young driver**

**Core attributes of young drivers**
- Age
- Gender
- Clinical conditions
- Personality

**Modifiable attributes of young drivers**
- Skills
- Experience
- Education and training

**Situational assessment, decision-making and hazard perception**
- Motivation
- Decision-making
- Hazard perception

**Driver behaviour**

**Young driver crashes/young driver safety**

*Source: Bates et al. (2014)*
The Science Behind Risk-Taking Behaviour

Young men engage in more risk-taking behaviour than young women, for the simple biological reason of young men aren’t as mature as young women. Magnetic reasoning imaging (MRI) studies have enabled scientists to watch the rate at which the brain matures and have discovered that the male brain doesn’t fully develop until age 25. Whereas, a woman’s brain experience maturity at an age of 21 years old. MRIs have revealed the brain has a developmental process that tends to occur from the back of the brain to the front, which explains why the prefrontal cortex develops last (pre-frontal cortex shown on image). With an immature prefrontal cortex, even though the person can intellectualize dangerous situations or poor behaviour, they may engage in these activities anyway. The slowness of a man’s brain maturation can explain a whole list of maturity failings, such as risky behaviour on the road, and their own recognition and admittance of those failings.

The images below depict the differences in brain connections between males and females. As can be seen from these images, the male brain is less developed and has less connections, especially in the area of the pre-frontal cortex.

Other Factors which cause this Higher Risk

Socio-Economic Factors

Research has shown that drivers who belong to lower socio-economic groups experience higher crash risks. A recent Australian study found that young drivers from lower socio-economic backgrounds were twice as likely to be hospitalised as a result of a crash when compared with young drivers from higher socioeconomic backgrounds.

Presence of Passengers and Peer Pressure

The presence of passengers, who are of a similar in age to a young driver, increases the risk of being involved in a crash. Studies have shown that young drivers, aged between 16 and 19 years old, are more likely to experience a fatal crash if they carry one or more passengers, and the more passengers that they carry in a vehicle, the higher the crash risk. The chances of a young driver having a crash increase by five times if they have young adult passengers in the car. This is because, the presence of passengers distracts young drivers, leading to driving errors. In addition, the presence of passengers can lead to peer pressure for the driver to act recklessly, or undertake law breaking activities (such as overcrowding the vehicle).

While peer pressure behind the wheel has always existed, it has arguably been exacerbated among today’s generation due to popular culture that can negatively influence driving behaviours. In a study of 1,000 young drivers, the results showed that 68% of drivers said they had felt intense peer pressure when driving, 31% admitted to speeding as a result of peer pressure, and 14% confessed to having an accident due to a disruptive passenger. Further reinforcing the finding that peer pressure effects driving ability is the fact that 46% of drivers said they drive more sensibly when their parents are in the car rather than their friends.

The gender of both the driver and the passengers can also impact the driver’s crash risk. Studies have shown that drivers with only male passengers are more likely to crash when compared with drivers who only had female passengers.

Alcohol and Drugs

On average, males have a much higher number of reported cases of drink driving related fatal crashes compared to females. A study undertaken in South Australia showed that, on average, 87% of driver or rider fatalities that had a blood alcohol level above the legal limit were male. Furthermore, on average 82% of driver or rider fatalities with a positive reading for methamphetamine, THC or ecstasy or a combination of these drugs were male.
Mobile Phone Use

Mobile phone use while driving reduces driving performance. Evidence shows that younger drivers are more likely to use their mobile phones while driving.

Younger drivers, aged 18 to 25 years, are twice as likely to make a phone call and four times more likely to text while driving, than drivers in other age groups. Furthermore, 12% of young drivers have admitted to updating their Facebook status while driving and 14% have admitted to taking a selfie and uploading it while driving.

According to the NSW Centre for Road Safety, male drivers under age 26 were responsible for a majority of the serious casualty crashes involving mobile phones between 2008 and 2016.

Younger drivers are not only more likely to text while driving, but they are also more likely to think that it is ok to do. Younger drivers are less likely to support legislation intended to reduce distracted driving, for example the laws against mobile phone use. This can be attributed to driving inexperience, and not fully undertaking the consequences of their risky behaviour.

Vehicle Safety Technology

The presence of occupant protection and safety features in a vehicle will also influence whether or not injury occurs in the event of a road crash. Younger drivers tend to drive older vehicles than middle aged drivers. In Australia, young women are generally more likely to drive newer vehicles, than young men. This can be seen to be contributing to an increased level of injury in young men in the event of a road crash as their cars have less safety features.

In addition, the use of safety technologies, such as seat belts, also influences injury outcomes. Seat belt wearing rates are generally quite high in Australia. However, lower usage rates are seen among young people. In Australia, no research has been undertaken on whether gender effects seat belt use. Although, evidence from other countries suggests that young men are more likely to be unrestrained than young women.

Lifestyle Characteristics

Young adults have an increased exposure to crashes due to their high-risk travel times. Young adults are more likely to be driving very late at night, or on the weekend for social or employment commitments (outside of regular business hours). Furthermore, young adults tend to have competing commitments. Young adults juggle study, work, family, and time with their friends. This makes young drivers prone to fatigue, impacting on their hazard perception skills which exacerbates crash risk.
What can we do to reduce the Crash Risk of Young Drivers?

Socio-Economic Factors

The crash risk of young drivers can be reduced through modifying the behaviours, which can be modified. The modifiable attributes of a young driver include: skills, experience, education and training received. Driving skills relates to the driver’s ability to operate their vehicle in a manner which reflects the road conditions. Young drivers need to learn to drive their vehicles using minimal cognitive resources, freeing up their minds to focus on the behaviour of other drivers. Young drivers who are still developing their cognitive driving skills, tend to be overly reliant on formal traffic rules or laws, which can contribute to them failing to anticipate the mistakes of other road users.

It is critical that effective countermeasures are adopted and implemented in order to reduce the crash rates experienced by young drivers.

The RACV outline various types of driver training programs for young drivers:

- Pre-licence training programs - Various organizations or groups operate special driver training programs for learners and pre-learners. These programs usually aim to encourage the development of safe driving techniques and can involve road law knowledge tuition and some in-car components, either on an off-road track or circuit, or on-road under supervision.
- Professional Driving Instruction for Learners - Basic driver training works at an instructional level. Most people are initially trained to drive by a driving instructor, friends, relatives, or a combination of these, in order to obtain their driver licence. This type of driver training concentrates on basic car control skills, driving techniques, road law knowledge and initial driver licensing.
- Higher Order Testing within a Graduated Driver Licensing Program - Some graduated driver licensing (GLS) programs require novices to pass additional tests of higher-order skills to progress to less restricted licensing levels and to “graduate” to full licence status.

For more information

- Brown, J, Senserrick, T & Bilston, L 2014, Gender Differences in crash characteristics among young drivers admitted to Hospital in NSW, Proceedings of the 2014 Australasian Road Safety Research, policy and Education Conference, Melbourne, Australia.
- About the Pre-Frontal Cortex
- CARRS-Q Fact Sheet: Adolescent Risk Taking
- CARRS-Q Fact Sheet: Yung Novice Drivers
- CARRS-Q Fact Sheet: Mobile Phone Use and Distraction
- Fact Sheet: Males and Females Involved in Road Crashes in South Australia
- Medical Daily: Men Mature After Women
- NRSPG Quick Fact: Male Vs. Female Deaths on Roads
- RACV: The effectiveness of driver training as a road safety measure
- RSA Group: Peer Pressure Behind the Wheel Gauged for road Safety Week
- Safe Ride for Kids: Young Drivers and Distracted Driving
- Use it Lose it campaign: Young men on mobiles behind bulk of serious accidents