# Safe and Unsafe Drivers

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## The Question

**Which driving behaviours are safe and which are unsafe? And what might be the common traits of safe drivers? This Q&A helps road users understand driving safely and factors that can help reduce the risk of crashes.**

### *Why it matters*

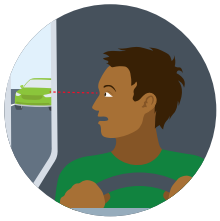
Knowing and understanding the behaviours and traits that are associated with safe drivers – and conversely unsafe drivers – can help people who drive for work, and their employers, implement measures that reduce the risk of road crashes and trauma.

### *4 Key Things to Know*

Motor vehicle crashes are the leading cause of death at work, so reducing risk and frequency has multiple benefits.

Using mobile devices and driving while tired are the most common behaviours displayed by unsafe drivers.

Driver attitude impacts how safely or unsafely you drive – impatient and aggressive drivers, for example, are more likely to crash than patient drivers.

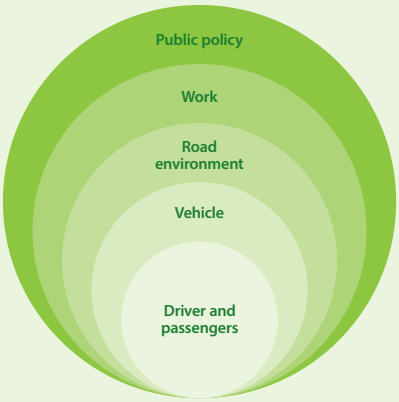


Mirror and blind spot checking and safe following distances are associated with safe drivers; safe drivers reduce vehicle wear and tear and emissions.

### *Scope of the problem*

There are more than 1100 vehicle fatalities each year in Australia. With drivers on the road every day for commuting, travelling, working or taking care of others, there is a critical need to understand what could make the difference between a safe trip and a potentially fatal trip. Vehicle fatalities are the leading cause of death in Australia, and motor vehicle crashes have become the leading cause of death at work.

The Occupational Light Vehicle Use Systems Model[1] (pictured) shows various factors that impact work driving safety, especially regarding unwanted results such as damage to vehicles, injuries and fatalities. It is important to remember that driver behaviour is only one of multiple risk factors that can influence the likelihood of vehicle collisions on the road and, despite otherwise good intentions, external factors outside the driver's control can also have an effect on their behaviour.




This Q&A was developed to help industry and the community understand the safe and unsafe behaviours drivers may engage in on the road. There are many risks involved in vehicle collisions, but we focus on the work setting and driver behaviour, distraction, attitude and personality.

## What factors contribute to road crashes?

The major factors mentioned in recorded road crashes in 2017 were speed (41%), drink driving (39%), distractions (35%), lack of concentration (35%) and fatigue (27%)[2]. All factors collected in the 2017 survey were sorted into four main categories, outlined below.

### *Driver behaviour*

**93%** of cases included the mention of factors relating to driver behaviour

| | |
|---|---|
| Excessive/inappropriate speed | 41% |
| Drunk driving | 39% |
| Distracted or using mobile devices | 35% |
| Lack of concentration | 35% |
| Fatigue | 27% |
| Drugs | 16% |

### *Driver attitudes/knowledge/skill*


**38%** of cases included the mention of factors relating to driver attitudes or skill

| | |
|---|---|
| Road rage, impatience, aggression | 10% |
| Carelessness | 8% |
| Inexperience | 7% |
| Lack of training | 5% |
| Incompetence | 4% |
| Disregarding road rules | 4% |
| Ignorance of road rules | 4% |
| Showing off | 2% |

### *Road conditions*

**14%** of cases included the mention of factors relating to road conditions

| | |
|---|---|
| Road conditions/traffic congestion | 7% |
| Poor road design/signs | 4% |
| Weather conditions | 4% |

### *Vehicle conditions*

**2%** of cases included the mention of factors relating to vehicle conditions

| | |
|---|---|
| Vehicle design | 1% |
| Lack of maintenance | 1% |

[1] The Occupational Light Vehicle Use Systems model was proposed by Stuckey, La Montague and Sim (2007)
[2] Australian Department of Infrastructure, Regional Development and Cities report on Community Attitudes to Road Safety – 2017 Survey Report

## Unsafe Drivers

### *Behaviours*

According to the 2017 survey, the Australian population still engages in unsafe behaviours, with using mobile phones and fatigue topping the list.

Nearly half (47%) reported they have driven while tired, while one quarter (23%) have fallen asleep at the wheel. The groups most at risk of this are the 15-24 age group (59%), males (52%), regular distance drivers (61%) and commuters (59%).

Two thirds (64%) reported they use mobile devices while driving or riding, rising significantly since 2013. 40% of drivers admitted making calls while driving and 21% use their mobile devices for other activities. One third (36%) making calls on mobile devices do so with a hand-held device.

One in five (21%) don't allow for extra space when heavy vehicles are merging or changing lanes. The groups that are most at risk of this are provisional drivers (38%) and those under 25 years old (39%).

6% reported driving at least 10kmh over the speed limit most of the time. Those most at risk of speeding were those with heavy vehicle licences (11%) and regular distance drivers (13%).

> ***"Road rage, impatience and aggression in particular are the most common driver attitudes reported as having contributed to vehicle crashes."***

### *Attitudes*

A driver's attitude towards driving can impact their driving behaviour and contribute to whether they drive safely or unsafely. Some of the most common attitudes of drivers that were involved in vehicle crashes include:

- Road rage, impatience, aggression (10%)
- Carelessness (8%)
- Disregarding road rules (4%)
- Showing off (2%).

Road rage, impatience and aggression in particular are the most common driver attitudes reported as having contributed to vehicle crashes. It is important to note that road rage and aggressive driving are not the same thing. Aggressive driving refers to reckless driving behaviour that occurs in the absence of anger, while road rage tends to refer to extremely hostile actions, such as assaulting other drivers and passengers or damaging vehicles.

### *Distractions*

It is important drivers are able to focus on the road and be alert to other drivers around them, so they can react quickly to sudden changes on the road. Three of the most common factors that affect the ability of drivers to focus on the road are distracting or using mobile devices (35%), lack of concentration (35%) and fatigue (27%).

All three factors represented almost one third (30%) of crashes on record. These are major factors in unsafe driving and governments are acting on this by implementing restrictions on mobile phone use and promoting that drivers should rest if they feel fatigued. This is particularly concerning considering that nearly half of surveyed drivers reported driving while tired, and the majority of young, male commuters who are also regular distance drivers admitted to falling asleep at the wheel.

### *General/Personality*

Individuals with specific traits are more likely to engage in the behaviours above or have certain attitudes that may lead to unsafe driving. For example, an individual who tends to seek out thrills and excitement (sensation seeking) is more likely to violate traffic laws when driving[3].

The multidimensional driving style inventory (MDSI), developed by Taubman-Ben-Ari, Mikulincer and Gillath, measures eight driving styles – dissociative, anxious, risky, angry, high-velocity, distress reduction, patient and careful – which are then categorised into four broader domains of driving styles: reckless and careless, angry and hostile, anxious, and patient and careful.

**Reckless and Careless**

Risky

High Velocity

**Angry and Hostile**


Angry

**Anxious**

Anxious

Distress-reduction (e.g. mediate while driving)

Dissociative (can be distracted or inattentive when driving)

**Patient and Careful**

Patient

Careful

Three domains (reckless and careless, angry and hostile, and anxious) are associated with unsafe driving behaviours, while the remaining domain (patient and careful) has been associated with safe driver behaviours.

Reckless and careless drivers tend to knowingly violate safe driving rules and regulations, such as speeding, and have higher levels of sensation-seeking and thrills experienced while driving. Angry and hostile drivers tend to express their anger, irritation and hostility on the road through aggressive behaviour, including cursing at other drivers, rude gestures and road rage. Anxious drivers tend to feel tense or anxious when driving and may engage in activities or distractions to reduce discomfort.

Patient and careful drivers tend to behave in a respectful and cautious way when driving.

Research on personality has also identified some character traits that are more likely in unsafe drivers.[4] Drivers who tended to engage in more risky and careless driving behaviours were more likely to be impulsive, while drivers who most often engaged in road rage were easily angered. Those who tend to be curious and blunt were more likely to engage in both sets of behaviours. Anxious drivers were more likely to be extraverted, frank, easily stressed and feel less confident compared to other drivers.

Patient and careful drivers tended to be reliable, patient and tactful.

In addition to personality differences, there have also been sex differences found in driving styles, where males were more likely to be risk takers, show anger and speed, while females were more likely to feel anxious but take a patient and careful approach to driving.

### *Reducing Risk*

It is important to remember the driver is only one component that influences how safe or unsafe the drive is. In addition to the driver-focused factors discussed, there are other things drivers can do in the vehicle and the road environment to reduce the risk of vehicle collisions.

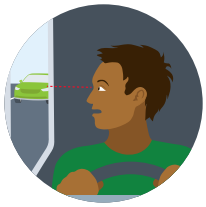
For example, vehicle owners can reduce the risk caused by vehicle factors by maintaining the vehicle and ensuring it is in good working condition. Drivers can also plan trips that reduce exposure to undesired road conditions, such as limiting travelling on rural roads when wildlife is most active.

Training and coaching can also play a part in reducing risk and improving drivers' skills. Skills that should be prioritised in training are not simply specific driver behaviours, rather meta-cognitive ability or self-insight into one's own cognitive state. This includes recognition of one's own fatigue and how that should impact their decisions around driving. Training should also not focus on manual skills, rather it should focus on hazard perception and other higher-level skills.

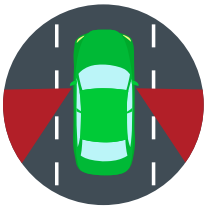
[3] Study by Lonczak, Neighbors, and Donovan (2007) found that individuals high in sensation seeking tended to have more traffic citations, especially among females
[4] Wang, Qu, Ge, Sun and Zhang's research supported past research in linking the big five personality factors with driving styles

## Safe Driver Behaviours

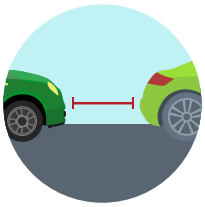
There are several behaviours associated with safe drivers, including mirror and blind spot checking, safe following distances and not driving fatigued. From an employer perspective, safe drivers reduce maintenance and wear and tear on vehicles, reduce vehicle emissions, and a happier and supported worker tends to be a safer driver.



Mirror checking with quick glances as you drive ensures you have a high level of situational awareness of other road users to either side of and behind you. This ensures you are able to respond immediately to changes in the environment (e.g. car pulls in front of you) in a way that is most safe. Such mirror checking should be performed constantly, especially when driving along multi-lane roads.



Blind spot checking is an important behaviour to perform alongside mirror checking. Blind spot checking on multi-lane roads, and especially when changing lanes, is important to ensure drivers have complete awareness of the space around a vehicle. A good driver will be familiar with the blind spots of their vehicle, and when entering a new vehicle will consider how the layout of the vehicle changes where the blind spots are.



Safe following distances is something a safe driver considers as it changes depending on the speed vehicles are travelling. The Victorian Government recommends for the follower to always leave at least a 2 second gap following distance between their vehicle and the vehicle travelling ahead. In wet weather, this should be extended to 4 seconds. This ensures drivers have sufficient time to react to events happening in front of them (if the driver they are following stops suddenly).

Avoiding driving when fatigued or unwell is something a safe driver would likely do. Being fatigued can greatly reduce a driver's reaction time and ability to drive safely, akin to driving under the influence of alcohol.

The NRSPP 'Drive The Way We Live – Insights Into Safer Driving For Work' webinar provides further insights into what makes a safe driver:

Hazard perception is the culmination of many of the behaviours described above and leads to safer driving, smoother driving, and better fuel economy. Specifically, improved hazard perception is achieved through a driver having good situational awareness, a comprehensive visual search, and paying attention.

Life satisfaction also has a direct impact on intended driver behaviour. Individuals who rated themselves as having higher levels of life satisfaction also rated themselves as having lower intentions to perform road violations, the conclusion being that increasing the 'flourishing' of individuals may improve the safety of their driving. This has implications for employers in how they construct their work environments, as constructing the environment in a way that facilitates satisfaction may translate into safer driving.

> ***"Safe drivers reduce maintenance and wear and tear on vehicles, reduce vehicle emissions, and a happier and supported worker tends to be a safe driver."***

## Summary

This Q&A discusses the importance and impact of vehicle crashes and contributing driver factors. An increase in driver awareness of these behaviours, attitudes and personality will help increase safety on the road. Drivers may recognise when they are engaging in unsafe driving behaviours (e.g. mobile device use) and reduce the frequency of those behaviours. As well as insight into their personal driving style and tendencies, the increased awareness around attitudes and personality could potentially create a deeper understanding of external factors, such as other drivers. Drivers can take this insight and consider how they may minimise risks while driving.

## BIBLIOGRAPHY


1. Australian Bureau of Statistics (2019). 6306.0 – Employee Earnings and Hours, Australia, May 2018. Accessed on 24th June 2019. https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6306.0Main+Features1May%202018?OpenDocument
2. Australian Transport Safety Bureau. (2005). Road crash casualties and rates, Australia, 1925 to latest year. Accessed on 24th June 2019. https://infrastructure.gov.au/roads/safety/publications/2005/pdf/1925-present.pdf
3. Bitre. (2019). Australian Road Deaths Database. Department of Infrastructure, Transport, Cities and Regional Development. Accessed on 24th June 2019. https://www.bitre.gov.au/statistics/safety/fatal_road_crash_database.aspx
4. Bureau of Infrastructure, Transport and Regional economics. (2018). Road Deaths Australia 2018 Statistical Summary. https://www.bitre.gov.au/publications/ongoing/rda/files/RDA_Dec_2018.pdf
5. Bureau of Infrastructure, Transport and Regional economics. (2017). Road Deaths Australia 2017 Statistical Summary. https://www.bitre.gov.au/publications/ongoing/rda/files/RDA_Dec_2017.pdf
6. Hooft van Huysdynen, H., Terken, J. M. B., Martens, J. B. O. S., & Eggen, J. H. (2015). Measuring driving styles – a validation of the multidimensional driving inventory. AutomotiveUI '16 Proceedings of the 7th International Conference on Automotive User Interfaces and Interactive Vehicular Applications, 257-264. https://pure.tue.nl/ws/files/3918433/585491304113011.pdf
7. Khadka, A., and Kim, I. (2018). Road Rage: Where to Go? Advancements in Civil Engineering & Technology, 2(1). https://pdfs.semanticscholar.org/1c35/b9634e99954d33f3277d4fb0f84d22901d79.pdf
8. Kleisen, L. (2009). What is the relationship between the thinking and driving styles of young drivers in the ACT? 2009 Australasian Road Safety Research, Policing and Education Conference, NSW. http://casr.adelaide.edu.au/rsr/RSR2009/RS092004.pdf
9. Lonczak, H. S., Neighbors, C., and Donovan, D.M. (2017). Predicting risky and angry driving as function of gender. Accident Analysis and Prevention, 39, 536-545.
10. RACV. (2017). Young Adult Licensing Trends – 2017 Update. RACV Research Report 17/02. https://www.racv.com.au/content/dam/racv/images/public-policy/reports/RACV%20Young%20Adult%20Licensing%20Trends%202017.pdf
11. Raimond, T., and Milthorpe, F. (2010). Why are young people driving less? Trends in licence-holding and travel behaviour. Australasian Transport Research Forum 2010 Proceedings, Canberra, Australia. https://www.atrf.info/papers/2010/2010_Raimond_Milthorpe.pdf
12. Taubman-Ben-Ari, Mikulincer, M., and Gillath, O. (2004). The multidimensional driving style inventory – scale construct and validation. Accident Analysis & Prevention, 36(3), 323-332. https://doi.org/10.1016/S0001-4575(03)00010-1
13. Wang, Y., Qu, W., Ge, Y., Sun, X., and Zhang, K. (2018). Effect of personality traits on driving style: Psychometric adaption of the multidimensional driving style inventory in a Chinese sample. https://doi.org/10.1371/journal.pone.0202126
14. World Health Organisation. (2018). Road traffic injuries. Accessed on 30th July 2019. https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries