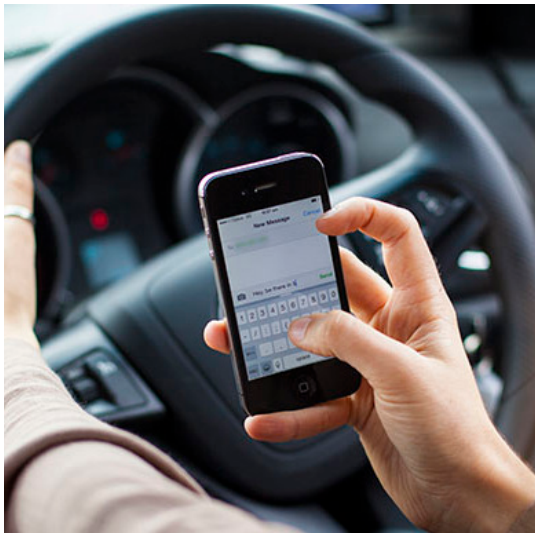
The Impact of Distractions on Safe Driving

Distractions include use of mobile phones, in-car technology, eating or drinking, smoking, children or other passengers, fatigue, adjusting vehicle settings and external distractions. All of these driving distractions impact on our ability to drive safely.



Distractions increase crash risk by 4.6%. Inattention has been found to be a contributing factor in 78% of car crashes and 65% of near crashes (CARRS-Q 2017), making it a large problem in road safety.

Distracted driving can lead to riskier decision making, stop us from driving at a safe speed and cause us to accelerate and decelerate unnecessarily.

Distractions impact upon headway distance of drivers during car-following, cause us to brake abruptly or aggressively and delay our responses to traffic light changes (CARRS-Q 2017).

It is important to remember that humans are fallible and are not designed to concentrate on one task at a time for long periods of time. Drivers should be supported to avoid distraction as much as possible (Copper et. al, University of Utah, 2017).

Three Types of Distraction

- Manual (Physical Function) – removing your hands from the wheel
- Visual – removing your eyes from the road
- Cognitive – taking your mind off the complex task of driving

Data from naturalistic driving studies suggest that distractions increase the risk of crashing:

- Talking, listening and/or dialling a hand–held device account for 7% of the total crashes and near crashes (3.6% each);
- Inattention in the broader sense has been found to be a contributing factor in 78% of car crashes and 65% of near crashes (Klauer et. al, 2006).

International research into road user distractions has established the 'eyes off the road' time theory as a major contributor to crashes. This 'eyes off the road' time is generally defined as two seconds plus - the average person's reaction time to an event is 1.8 seconds which is factored into the probability of a crash and the severity of injury from a crash. This means nearly four seconds can pass before the average 'distracted' driver can react.

Travel Speed	Distraction Time	Distance Travelled (metres)
40 km/h	2 seconds	22.22
50 km/h	2 seconds	27.78
60 km/h	2 seconds	33.33
80 km/h	2 seconds	44.44
100 km/h	2 seconds	55.56

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Research has shown that the community aren't aware of the impact that distractions can have on driving performance. Among drivers aged 18-60 years, just over half (55%) admitted to using a mobile phone while driving. Drivers perceive the risk of being caught and fined for driving while using a hand-held mobile phone as low.

People consider the use of hands-free mobiles while driving as less dangerous than using a hand-held mobile. However, research has found that a mobile phone whilst driving is highly distracting and increases the risk of a crash four-fold, regardless of whether a hands-free kit is used (Haworth et al, 2005). An advanced driving simulator study conducted by CARRS-Q found that reaction time of drivers with a hands-free and hand-held phone was more than 40% longer than those not using a phone (2016). Drivers seem to be less aware of the mental aspect of driving and that cognitive distractions slow reaction times and ability to navigate traffic (Baker & Spina, 2007).

Studies have shown that younger drivers are more likely to engage in distracted driving. Young drivers aged 18 - 25 years are twice as likely to make a phone call and four times more likely to text, and they are more likely to read emails or use the internet. In addition, 12% have admitted to updating their Facebook status while driving and 14% have admitted to taking a selfie and uploading it while driving (CARRS-Q, 2017).

Another study (Schroeder et. al, 2013), found that 48% of drivers reported answering phones while driving. An attitude of 'nothing is illegal, as long as you don't get caught' appears to be the norm (Durant et. al, 2016). The survey conducted by Durant revealed that people are accurately aware of the distracted driving epidemic and becoming increasingly concerned.

Neuroscience has consistently found people cannot successfully perform two attention-demanding tasks (such as driving and using a mobile phone) simultaneously without declines in performance on one or both tasks (Leroy, 2009).

Multitasking requires switching between activities rather than performing two tasks at once. Regardless of the pattern or cause of task transitions, transitioning sequentially among tasks requires a reduction or elimination of cognitions about one task to fully focus on another.

Attention residue reflects the persistence of cognitive activity (Leroy, 2009) known as residual switch cost. Findings reveal that the act of transitioning between tasks has implications on how people engage in a subsequent task; switching attention tends to be difficult for people and subsequent task performance easily suffers (Adams, 2017). Driver activity suggests misconceptions about 'multitasking' while driving; for instance, one third of respondents to TAC's road safety monitor reported reading a text message while stopped at traffic lights. Applied to safe driving, the implications of switching between tasks while driving can exacerbate the impact of the distraction.

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Image courtesy of Transport Accident Commission.