

# Mobile phone use & distraction



- Mobile phone distraction was estimated to contribute to 18% of fatal crashes and 5% of injury crashes<sup>1</sup>.
- Despite the dangers and illegality, approximately half of drivers in Queensland admitted to using their mobile phone for browsing or texting while driving<sup>2</sup>.
- Naturalistic studies show hand-held phone use increases crash risk by a factor of 3.6<sup>3</sup>.

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

### THE FACTS

- Driver distraction, including mobile phones, is one of the main causes of road crashes, accounting for approximately 1 in 4 car crashes<sup>1</sup>.
- Approximately 84% of mobile phone users own a smartphone<sup>5</sup>. The greater functionality of smartphones (e.g. social media, internet) means they have the greater potential to distract a driver. A NSW survey of 415 drivers found that 68% had read emails and 25% had updated their Facebook status or tweeted<sup>2,6,7</sup>.
- All mobile phone interactions that require taking your eyes off the road should be avoided. There has been a focus on texting but the reality is that tasks such as reaching for a phone or dialing a phone number are at least as risky<sup>2</sup>.
- Drivers are not good determining where and when is safe to use a mobile phone while driving. They overestimate their capability and do not necessarily what is risky of mobile phone interactions.
- Some of the strategies used by drivers to avoid enforcement, such as texting with the phone in their laps (under the steering wheel), might put them in a higher risk. Please follow the law, it is there to protect you.
- Talking to a passenger is less distracting than talking on a mobile phone. If a dangerous situation develops, the passenger can stop talking. The other person on the other end of the phone call is unaware of the danger and will continue talking, distracting the driver further when full concentration is required to drive safely.

### Australian legislation

- It is illegal in all Australian states and territories to use a hand-held mobile

phone while driving; including when your vehicle is stationary but not parked (e.g. when stopped at a traffic light). This includes all phone functions.

- It is illegal to use a hands-free phone while driving if it causes you to lose proper control of your vehicle.
- In some States, L, P1 and P2 drivers are not permitted to use a hand-held or hands-free mobile phone while driving.

Driving conditions can change quickly. You may not be able to safely respond to events if you are not paying attention to the road.

### Why is using a mobile phone while driving dangerous?

- Using a mobile phone while driving is distracting in the following ways:
  - Physical distraction – as the driver's hand is moved from the steering wheel to pick up the phone, answer or end the call, or text a message;
  - Visual distraction – as the driver's eyes are diverted from the road to seek the phone, view the buttons, read a message, etc.; and
  - Cognitive distraction - talking on a mobile phone while driving causes lapses of attention, concentration and judgement, as the driver's attention is divided between the driving task and conversation.
- It is difficult to have a simple conversation

in complex driving situations such as driving at peak hour, on unfamiliar roads, at night and in wet weather. Similarly, it is difficult to have a complex conversation whilst performing a simple driving task as the conversation task demands a greater investment of the driver's attention.

- Text messaging while driving is especially dangerous. An Australian simulator study found that young novice drivers spent about four times as much time looking away from the road when texting than when not texting<sup>8</sup>.
- Research shows that dialling, texting and talking on a mobile phone while driving can lead to<sup>8</sup>:
  - Riskier decision making – a driver's ability to judge distances, speed, space and environmental conditions may be affected;
  - Slower reactions<sup>9</sup>;
  - Speed variations<sup>10</sup>;
  - Less controlled braking – the driver will tend to brake later, with more force and less control<sup>11</sup>;
  - Inappropriate actions at the onset of a yellow light at intersections<sup>11</sup>; and
  - Reduced awareness of the surroundings: the driver will tend to spend less time checking their mirrors and monitoring the traffic and road environment.

### Crash risk

- Anyone using a mobile phone while driving is at increased risk of a serious crash.
- Data from naturalistic driving studies<sup>3</sup> suggest that:
  - talking, listening and/or dialing a hand-held device accounted for 7% of the crashes and near crashes;
  - inattention, from all sources, has been found to be a contributing factor in 78%

of car crashes and 65% of near crashes.

- Young drivers are particularly at risk as there is a greater prevalence of driving while using a mobile.
- Older drivers find it difficult to conduct two tasks simultaneously and their response times are impaired.

## CARRS-Q/UT'S WORK IN THE AREA

CARRS-Q's Advanced Driving Simulator enables researchers to study drivers in critical situations with a high degree of realism. Simulator-based research has been valuable to develop insights into our understanding of distracted driving and mobile phone use. Recent research findings include:

- Mobile phone conversations impair the reaction times of young drivers when confronted with a traffic event that originates in their peripheral vision (e.g. a pedestrian attempting to cross a road from the footpath)<sup>12</sup>.
- Mobile phone distraction impairs the speed selection, acceleration, deceleration and headway distance of drivers during car-following; braking can be abrupt or aggressive; and responses to traffic light changes can be delayed<sup>11,13</sup>.
- Effects of hands-free and handheld mobile phone conversations tend to be similar for reaction time, speed selection, gap acceptance and braking behaviour of drivers, suggesting inattention rather than manual dexterity is a crucial factor<sup>9,11</sup>.
- Compared to open licence holders, driving of a provisional licence holder is impaired more by mobile phone distraction<sup>10,12</sup>.
- Drivers who believe they can control their mobile phone use may be at risk while in legal tasks such as hands-free conversations. Educational interventions need to target these attitudes.
- Investigations have been conducted to identify young drivers' (17-25 years)

underlying beliefs and psychosocial predictors of their engagement in both concealed texting<sup>14</sup> and in initiating, monitoring/reading, and responding to social interactive technology (e.g. Facebook, email, texting) on smartphones<sup>16</sup>.

- Research is focusing on the development and evaluation of public education messages aimed at initiating, monitoring/reading, and responding to smartphone communications among young drivers (17-25 years)<sup>15</sup>.
- The risk compensation behaviour of mobile phone distracted drivers is being studied<sup>14,16</sup> to help identify technological interventions to reduce risks.
- Distracted drivers using the mobile phone for visual-manual tasks such as texting and browsing are not able to manage correctly their driving speed putting themselves at higher risk of accident<sup>17</sup>.
- Drivers should activate the driving mode functions available on iPhone and Android phones as they help to reduce exposure to high-risk mobile phone tasks.
- Other distractions, such as roadside advertising, could attract attention of drivers and result in road crashes. Drivers should remember they need to concentrate their attention on driving at all times.

## FUTURE DIRECTIONS

- More vehicles have voice activation of phones which is legal and likely to increase use and thus increase crashes.
- Future research may focus on:
  - Further comparisons of the levels and safety implications of legal (hand-held) and illegal (hands-free) mobile phone use while driving.
  - The effects of different types of hands-free phones (i.e. using an earpiece –v- fully installed hands-free kit) to inform safer policy.

- The potential differences in the distracting effects of initiating, monitoring/reading, and responding to mobile phone communications.
- Developing more effective means of quantifying the involvement of mobile phones in road crashes.
- Evaluating the effectiveness of current legislation and its enforcement.
- The psychosocial factors<sup>15</sup> influencing mobile phone use to inform future interventions.
- Developing public education campaigns to minimise the perceived benefits of the behaviour, increase public disapproval for it, and highlight the preventable risks of this unsafe driving practice.
- Developing and ensuring widespread implementation of best practice fleet policy regarding mobile phone use while driving to improve the safety of people driving for work purposes.
- Technological interventions to tackle safety issues associated with using mobile phones while driving<sup>11</sup>.

**Never look at a mobile whilst driving (even when stopped at a red light). Pull over safely & park your vehicle before using your mobile phone.**

## REFERENCES

1. Overton, T. L., Rives, T. E., Hecht, C., Shafi, S., & Gandhi, R. (2014). Distracted driving: prevalence, problems, and prevention. *International Journal of Injury Control and Safety Promotion* (ahead-of-print), 1-6.
2. Oviedo-Trespalacios, O., King, M., Haque, M.M. & Washington, S. (2017). Risk factors of mobile phone use while driving in Queensland: Prevalence, attitudes, crash risk perception, and task-management strategies. *PLoS One*.
3. Dingus, T. A., Guo, F., Lee, S., Antin, J. F., Perez, M., Buchanan-King, M., & Hankey, J. (2016). Driver crash risk factors and prevalence evaluation using naturalistic driving data. Proceedings of the National Academy of Sciences, 113(10), 2636-2641.
4. Klauer, S., Dingus, T., Neale, V., Sudweeks, J., & Ramsey, D. (2006). *The impact of driver inattention on near crash/crash risk: An analysis using the 100-car Naturalistic Driving Study data*. (Report No. DOT HS 810 594). Washington DC: NHTSA.
5. IAB Australia. (2016). Device Ownership and Trends – Sept 2016.
6. NRMA. (2012). *Safe Driver Distraction Submission*.
7. Gauld, C.S., Lewis, I., White, K.M., Fleiter, J.J., & Watson, B. (2017). Smartphone use while driving: What factors predict young drivers' intentions to initiate, read, and respond to social interactive technology? *Computers in Human Behavior*, 76, 174-183.
8. Hosking, S., Young, K. & Regan, M. (2006). *The effects of text messaging on young novice driver performance*. Monash University Accident Research Centre Report No. 246.
9. Haque, M. & Washington, S. (2014). A parametric duration model on reaction times of drivers distracted by mobile phone conversations. *Accident Analysis & Prevention*, 62, 42-53.
10. Gauld, C., Lewis, I., Haque, M. & Washington, S. (2015). Effect of mobile phone use and aggression on speed selection by young drivers: A driving simulator study. *Journal of the Australasian College of Road Safety*, 26(1), 40-46.
11. Haque, M. & Washington, S. (2014). The impact of mobile phone distraction on the braking behaviour of young drivers: A hazard-based duration model. *Transportation Research Part C: Emerging Technologies*, 50, 13-27.
12. Haque, M. & Washington, S. (2013). Effects of mobile phone distraction on drivers' reaction times. *Journal of the Australasian College of Road Safety*, 24(3), 20-29.
13. Haque, M., Raven, A., Washington, S. & Boyle, L. (2015). Decisions and actions of distracted drivers at the onset of yellow light. *Accident Analysis & Prevention*, 96, pp. 290-299.
14. Oviedo-Trespalacios, O. (2018). Getting away with texting: Behavioural adaptation of drivers engaging in visual-manual tasks while driving. *Transportation Research Part A: Policy and Practice*, 116, 112-121.
15. Gauld, C., Lewis, I., White, K. & Watson, B. (2016) Key beliefs influencing young drivers' engagement with social interactive technology on their Smartphones: A qualitative study. *Traffic Injury Prevention*, 17(2), pp. 128-133.
16. Oviedo-Trespalacios, O., Haque, M. M., King, M., & Demmel, S. (2018). Driving behaviour while self-regulating mobile phone interactions: a human-machine system approach. *Accident Analysis & Prevention*, 118, 253-262.

STATE OF THE ROAD is CARRS-Q's series of Fact Sheets on a range of road safety and injury prevention issues. They are provided as a community service and feature information drawn from CARRS-Q's research and external sources. See the reference list for content authors.

## FOR MORE INFORMATION

Marketing & Events Officer, CARRS-Q  
Queensland University of Technology  
130 Victoria Park Road  
Kelvin Grove QLD 4059 Australia

Phone +61 (0)7 3138 4568  
Fax +61 (0)7 3138 7532  
Email marketing.carrsq@qut.edu.au  
Twitter @CARRS\_Q  
Facebook www.facebook.com/carrsq130



CARRS-Q is a joint venture initiative of the Motor Accident Insurance Commission and Queensland University of Technology

[research.qut.edu.au/carrsq](https://research.qut.edu.au/carrsq)