

# Road safety factsheet: Driver distraction

May 2022

There has been much attention on driver distraction due to the use of mobile phones in vehicles, but increasingly research is also revealing the dangers of other forms of driver multi-tasking, and its contribution to road accidents.

Although this factsheet talks mainly about driver distraction, other road users including riders, cyclists, and even pedestrians can also be distracted from the dangers of the road around them.

## What is distraction?

A driver is distracted when they pay attention to a second activity while driving. People cannot always safely multi-task in this way, especially if the second activity is time consuming or complex.

The second activity puts extra demands on the driver, which may reduce his or her driving standard. For example, it may cause the driver to become less observant or to make poor decisions about how to control the vehicle safely. This lower standard of driving means that a driver is more likely to fail to anticipate hazards, and means accidents can occur due to the distraction.

In theory, there are as many potential causes of distraction as there are things to which drivers could pay attention. In reality, however, drivers tend to prioritise information so that they pay the most attention to information or activities needed for driving.

Distraction can be either driver initiated (where the driver starts carrying out a distracting activity) or non-driver initiated (the unpredictable actions of something or someone else).

Objects, events, or activities both inside and outside the vehicle can cause distraction. In-vehicle distractions can be caused by technology, or by other sources inside the vehicle such as passengers. External distractions may be when a driver concentrates on unimportant events or objects, or when another person does something unusual.

An American Study<sup>1</sup> looked at the percentage of drivers who engaged in potentially distracting activities during three hours of driving, and the duration of these activities when their vehicles were moving.

Potential distraction	% of subjects	% of total driving time
Talking on a mobile phone	30.0	1.30
Answering a mobile phone	15.7	
Dialling on a mobile phone	27.1	
Eating, drinking, spilling	71.4	1.45
Preparing to eat or drink	58.6	3.16
Manipulating music/audio controls	91.4	1.35
Smoking (includes lighting and extinguishing)	7.1	1.55
Reading or Writing	40.0	0.67
Grooming	45.7	0.28
Baby distracting	8.6	0.38
Child distracting	12.9	0.29
Adult distracting	22.9	0.27
Conversing	77.1	15.32
Reaching, leaning, etc.	97.1	3.78
Manipulating vehicle controls	100.0	
Other internal distraction	67.1	
External distraction	85.7	1.62

## Accident statistics

There have been a range of estimations about the number of accidents that are caused by, or contributed to, by driver distraction. It is hard to make an accurate estimate as accident databases are generally constructed from reports following an accident and it is probable that not every driver admits to being distracted or inattentive at the time of the accident.

Road accident data suggests that in 2020, 'distraction in vehicle' contributed to 2,034 accidents (3% of all reported road accidents) and 'distraction outside vehicle' contributed to a further 914 accidents (2% of all reported road accidents)<sup>2</sup>.

<sup>1</sup> AAA Foundation for Traffic Safety (2001) 'The Role of Driver Distraction in Traffic Crashes' <https://www.forces-nl.org/download/distraction.pdf> (Accessed 10 May 2022)

<sup>2</sup> DfT (2020) 'Table RAS50001: Contributory factors in reported accidents by severity, Great Britain, 2020' <https://www.gov.uk/government/statistical-data-sets/reported-road-accidents-vehicles-and-casualties-tables-for-great-britain#contributory-factors-for-reported-road-accidents-ras50> (Accessed 10 May 2022)

One of the largest studies of driver behaviour conducted is the 100-Car Naturalistic Study<sup>3</sup> in the USA, which recorded the activities of 241 drivers over the course of 12 –13 months in order to build up a picture of how drivers behaved in cars.

Around 42,300 hours of driving data was collected, and in this time the vehicles covered around 2 million miles. At the end of the study, researchers also had 15 police-reported and 67 non-police reported crashes to study, as well as 761 near-crashes and 8,395 'incidents'.

It was found that 78% of the crashes and 65% of near crashes had one form of inattention or distraction as a contributing factor – including inattention due to fatigue.

Another study<sup>4</sup>, which examined film footage of drivers in their vehicles, found that all drivers partook in at least one distracting activity, and that altogether, drivers spent 14.5% of the time that the vehicle was in motion involved in a distracting activity. They engaged in a distracting activity once every 6 minutes on average.

In a study of US crash data<sup>5</sup>, 8.3% of drivers were distracted at the time of their crash. However, the driver's attention status was unknown in 35.9% of crashes and so there may be under reporting.

## Types of driver distraction

There are four types of driver distraction<sup>6,7</sup>

- Visual
- Cognitive
- Biomechanical
- Auditory

An activity can create multiple types of distraction – for example, using a hand held mobile phone while driving creates a biomechanical, auditory and cognitive distraction.

**Visual distraction** occurs when a driver sees objects or events and this impairs the driver's observations of the road environment.

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<sup>3</sup> Neale et al. (undated) 'An Overview of the 100-car Naturalistic Study and Findings' <https://www.nhtsa.gov/sites/nhtsa.gov/files/100carmain.pdf> (Accessed 10 May 2022)

<sup>4</sup> McEvoy et al. (2006) The Impact of Driver Distraction on Road Safety: Results From a Representative Study in Two Australian States, *Injury Prevention*, 12(4): 242-247.

<sup>5</sup> Stutts et al. (2001) The Role of Driver Distraction in Crashes: an Analysis of 1995-1999 Crashworthiness Data System Data, *Annu Proc Assoc Adv Automot Med*, 45: 287-301.

<sup>6</sup> Young et al. (2003) 'Driver Distraction a Review of the Literature', Monash University

<sup>7</sup> Ranney et al. (2000) 'NHTSA Driver Distraction Research: Past, Present and Future'

Concern about visual distraction is not new - when windscreen wipers were first introduced, there was concern over their potentially hypnotic effect<sup>8</sup>.

The way that a driver observes the area around the vehicle depends on how complex it is, and in complex environments, drivers can find it more difficult to identify the main hazards.

In undemanding situations, driver's attention tends to wander towards objects or scenery that are not part of the driving task. Estimates of how much time drivers spend doing this varies from between 20% and 50%<sup>9</sup>.

**Cognitive distraction** occurs when a driver is thinking about something not related to driving the vehicle.

A National Safety Council white paper<sup>10</sup> states that drivers using hands-free mobile phones have a tendency to 'look at' but not 'see' objects, with estimates indicating that drivers using a mobile phone look but fail to see up to 50% of the information in their driving environment. This is known as 'inattention blindness' and means that although drivers are looking through the windscreen, they do not process everything in the road environment that they must know to effectively monitor their surroundings, identify potential hazards and respond to unexpected situations.

Although hands-free phones reduce visual (eyes off the road) and mechanical (hands off the wheel) distraction, they do not reduce cognitive distraction. Most people are able to recognise when they are visually and mechanically distracted, and seek to disengage from these activities as quickly as possible. However, people often do not realise when they are cognitively distracted, such as taking part in a mobile phone conversation, and this risk lasts much longer.

Studies<sup>11, 12</sup> of driver's eye fixations while performing a demanding cognitive task show that their visual field narrows both vertically and horizontally – meaning that rather than scanning the road environment for hazards they spend much more time staring ahead than usual leading to tunnel vision.

This means that drivers who are cognitively impaired will spend less time checking mirrors or looking around for hazards.

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<sup>8</sup> Harbluk et al. (2000) 'The Impact of Internal Distraction on Driver Visual Behaviour' [https://www.researchgate.net/publication/237234891\\_THE\\_IMPACT\\_OF\\_INTERNAL\\_DISTRACTION\\_ON\\_DRIVER\\_VISUAL\\_BEHAVIOR](https://www.researchgate.net/publication/237234891_THE_IMPACT_OF_INTERNAL_DISTRACTION_ON_DRIVER_VISUAL_BEHAVIOR) (Accessed 10 May 2022)

<sup>9</sup> Crundall et al. (2006) Attraction and Distraction of Attention with Roadside Advertisements, *Accident Analysis and Prevention*, 38:671-677

<sup>10</sup> National Safety Council (2012) 'Understanding the distracted brain: why driving while using hands-free cell phones is risky behaviour'

<https://www.nsc.org/getmedia/2ea8fe8b-d7b7-4194-8ea5-306d30a73972/cognitive-distraction-white-paper.pdf>(Accessed 10 May 2022)

<sup>11</sup> Recarte, M. And Nunes, L. (2000) Effects of Verbal and Spatial-Imagery Tasks on Eye Fixations While Driving, *Journal of Experimental Psychology*, 6(1): 31-43

<sup>12</sup> Harbluk et al. (2007) An On-Road Assessment of Cognitive Distraction: Impacts on Drivers' Visual Behaviour and Braking Performance, *Accident Analysis and Prevention*, 39: 372-379

**Biomechanical distraction** occurs when a driver is doing something physical that is not related to driving, for example, reaching for something and out of the driving position, or holding an item.

**Auditory distraction** is caused when sounds prevent drivers from making the best use of their hearing, because their attention has been drawn to whatever caused the sound.

## Effects of distraction

Cognitive distraction causes drivers to look at their mirrors, instrument panel and what's happening in the environment around them much less; instead they concentrate their observations straight ahead, and so are more likely to detect hazards later than they would otherwise have done.

Worryingly, distracted drivers underestimate the effects that distraction has on them, and do not perceive their reduced awareness or their ability to spot hazards. This may be because they are still looking at the road straight ahead and are not gathering the whole picture of the road around the vehicle.

Drivers who are distracted also have difficulty controlling their speed and their distance from the vehicle in front, and their lane position can vary drastically.

The more complex or involved a driver becomes with a distraction, the more detrimental the distraction is on their ability to make observations and control the vehicle safely.

Research has shown that drivers are more likely to accept a higher level of distraction if they judge the distracting activity relevant to the driving, for example navigating<sup>13</sup>.

## The Law

There are general laws that require drivers to be attentive and not engage in distracting activities. Distracted drivers could be charged with a range of offences including Dangerous Driving, Careless and Inconsiderate Driving, Failure to Be in Proper Control of the Vehicle, or Driving without Due Care and Attention depending on how badly the distraction affected their driving.

The Construction and Use Regulations prevent the use of certain types of technology in vehicles – for example, hand held mobile phones, and it is illegal to use certain types of televisions in vehicles.

When a driver is at work, their employer also has a responsibility towards the safety of their employees, and the people they share the road with, and need to put in place all 'reasonably practicable' safety measures on work related journeys.

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<sup>13</sup> Cnossen et al. (2004) Adaptive Strategy Changes as the Function of Task Demands: a Study of Car Drivers, *Ergonomics*, 47(2): 218-236

This includes making sure that drivers are aware of the dangers of distraction, are trained to deal with it, and are trained in the safe use of any in-vehicle technology which may cause a distraction.

Further advice is available in "[Driving for Work: Mobile Phones](#)".

## Dealing with distraction

Distraction is a difficult risk to manage. On the one hand, some level of distraction is unavoidable, but drivers can take some simple steps to avoid becoming distracted.

### **If you need to do something distracting, find a safe place to pull over.**

You can prevent yourself from doing distracting things behind the wheel by finding a safe place to pull over first. By planning so that you are not trying to drive and do other tasks at the same time, you can reduce the likelihood of becoming distracted in the vehicle.

### **Recognise what makes you distracted**

Many drivers sometimes carry out a distracting activity, without realising the extra risk that it causes. Eating or changing a song are examples of activities that drivers may do without thinking of the risks involved. Before engaging in an activity, ask yourself "will this be distracting?". Think about how you would feel if you saw another road user doing the same thing - self-assessment is an important part of developing your driving.

### **Concentrate on your driving**

This is easier said than done, especially in uninteresting environments. However, attention to thought can reduce the quality of the observations that you make. It may be difficult to stop yourself becoming distracted but if you find yourself engaged in thought or distracted by other means, then it is important to focus on your driving as soon as you realise.

Make sure that you are ready to drive before setting off for a journey. If you are about to drive after an emotional event, then it is best to allow yourself time to cool down.

### **Use technology sensibly**

In-vehicle technology can be distracting, especially if there are several systems in the same vehicle. Never put too many different devices in a vehicle. If you can change the settings on the technology, then find ways of using it that is less distracting.

Some mobile phone companies have 'do not disturb' modes for those who are driving, which usually include silencing notifications so the driver does not hear the phone when they are driving and is not tempted to answer it.

### **Plan your route in advance**

All drivers dedicate a certain amount of time to navigating, this is unavoidable, but there are things you can do to reduce the time you spend navigating. By planning your route in advance and making sure you have a good

accidents don't have to happen

idea of the directions, you may be able to reduce the time you spend looking for signs and road markings, and plan manoeuvres earlier.

### **Take refresher or further driver training**

We all pick up bad habits over the years, several of which may be a result or cause of distraction. Refresher or further driver training can help drivers to build on the skills they have to prioritise events around a vehicle, predict hazards, and decide the safest course of action on the road.

For more information on specific types of driver distraction, read our [sat navs](#), [mobile phones](#) and [headphones](#) factsheets.