

Driver Distraction Summary

2015



What is the problem?

Driver distraction has been defined as “the diversion of attention away from activities critical for safe driving toward a competing activity, which may result in insufficient or no attention to activities critical for safe driving”. Although the sources of driver distraction may be different, adverse effects include a decrease in performance of the driving task, slower speed, closer following distance, slower reaction times, more problems with keeping course, more errors, and narrower visual focus.

How big is the problem?

Risk exposure: Research has indicated that car drivers spend about 25-30% of total driving time on distracting activities, of which about half concerns conversation with a passenger. Age is also an important factor; distraction is more common for young road users than for middle-aged or older road users.

Risk of accident involvement: In several studies it has been shown that distraction contributes to a substantial number of accidents and consequently poses a serious safety problem. Activities that cause visual distraction (e.g. looking away from the road during texting) appear to be the most dangerous.

Size of accident injury problem: In epidemiological research about 5 to 25% of car accidents have been attributed to driver distraction. In one study of truck drivers, a much higher estimate of 70% has been found. Differences in estimates between studies may be connected with differences in operational definitions, in research methods and driver populations.

What does science say?

Sources of driver distraction

There are various sources of distraction. The sources can reside inside or outside the vehicle, be technology-related or otherwise, traffic-related or not, and be self-initiated or imposed by the situation/circumstances. While the sources of distraction may take many forms, distraction is usually examined in terms of four distinct categories: visual distraction (e.g. looking away from the roadway), auditory distraction (e.g. responding to a ringing cell phone), biomechanical distraction (e.g. manually adjusting the radio volume), and cognitive distraction (e.g. being lost in thought).

Effects differ depending on the distracting activity

Several studies suggest that various distracting activities are associated with increased accident risk. Distracting activities of a visual/physical nature, such as typing in a number or applying make-up, are associated with higher accident risk, since they require that the driver glances away from the road for a longer time, thus hindering the correct anticipation of unexpected events.

Effects differ depending on driver characteristics

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Age and driving experience: Less experienced drivers are less able to perform competing activities without compromising activities critical for safe driving as they have only partially automated some driving skills.

Alcohol intoxication: Research has shown that "easy" secondary behaviours (e.g., changing the radio channel) can be substantially more distracting when under the influence of alcohol.

Drowsiness: Drivers that are sleep deprived are more likely to be distracted.

Selection of countermeasures

Since sources of distraction can be various and not everything is known yet about the level of risk associated with each distracting activity, a combination of countermeasures seems appropriate, consisting of legal measures, publicity and training, new technology and last but not least, a change in the way of thinking about what behaviour is acceptable.

What are the solutions?

There are five broad categories of countermeasures to address distraction: legislation and enforcement, driver training, publicity campaigns, technology-based countermeasures, and road infrastructure. A combination of countermeasures, directed towards drivers, transport companies, roads and vehicles, seems most appropriate.

Legislation and enforcement:

- Regulation of the use of devices in vehicles, including hand-held cell phones, personal navigation devices, music players, TV and video players etc.
- Ban on positioning advertising billboards close to the road.

Driver training:

- Attention to strategies to recognise and avoid driver distraction.

Publicity campaigns:

- To promote awareness of risk and to change behaviour and prevailing social norms for distracting activities, such as texting and phoning while driving.

Technology-based countermeasures:

- Development of guidelines and standards to make in-vehicle information and communication systems less distracting.
- Achieving enhanced interplay of in-vehicle information and communication systems, both fixed and nomadic, with other in-car and driver assistance systems.
- Promotion of driver assistance technologies (e.g. lane departure warning, accident emergency braking, forward collision warning) that have the potential to reduce the negative impact of driver distraction.
- Promotion of head-monitoring systems that can reduce driver distraction event frequency through real-time distraction alerts.

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Road infrastructure:

- Inclusion of criteria in Road Safety Audits / Inspections and assessment protocols for the identification and assessment of road-way related activities, objects and events that can distract drivers.
- Avoiding installation of advertising and information billboards at busy traffic spots, or of billboards resembling traffic signs, blinking billboards etc.
- Installation of rumble strips to provide both audible warning (rumbling sound) and physical vibration, alerting drivers that they are leaving the driving lane.

Notes

1. Country abbreviations

	Belgium	BE		Italy	IT		Romania	RO
	Bulgaria	BG		Cyprus	CY		Slovenia	SI
	Czech Republic	CZ		Latvia	LV		Slovakia	SK
	Denmark	DK		Lithuania	LT		Finland	FI
	Germany	DE		Luxembourg	LU		Sweden	SE
	Estonia	EE		Hungary	HU		United Kingdom	UK
	Ireland	IE		Malta	MT			
	Greece	EL		Netherlands	NL		Iceland	IS
	Spain	ES		Austria	AT		Liechtenstein	LI
	France	FR		Poland	PL		Norway	NO
	Croatia	HR		Portugal	PT		Switzerland	CH

2. This 2015 edition of Traffic Safety Synthesis on Driver Distraction updates the previous version produced within the EU co-funded research project [DaCoTA](#) (2012). This Synthesis on Driver Distraction was originally written in 2012 by Charles Goldenfeld, [SWOV](#) and then updated in 2015 by Mike Regan, [ARRB](#).

3. All Traffic Safety Syntheses of the European Road Safety Observatory have been peer reviewed by the Scientific Editorial Board composed by: George Yannis, NTUA (chair), Robert Bauer, KFV, Christophe Nicodème, ERF, Klaus Machata, KFV, Eleonora Papadimitriou, NTUA, Pete Thomas, Un.Loughborough.

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5. Please refer to this Report as follows:

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