

Understanding Driver Distraction

The human brain is not capable of multitasking, or doing two things at once. Instead, the brain is constantly attention-switching between the two tasks, never giving full focus to either one. Here are ways to recognize driver distraction so you can better understand how to drive safely. No call, text or email is more valuable than our lives—while we are driving.

Eight people die every day on our US roadways in distraction-affected crashes.¹

Driver distraction problem & types

Diverting attention from driving to focusing on another activity.



The mental workload associated with a task that involves thinking about something other than driving.



Tasks that require the driver to look away from the roadway.



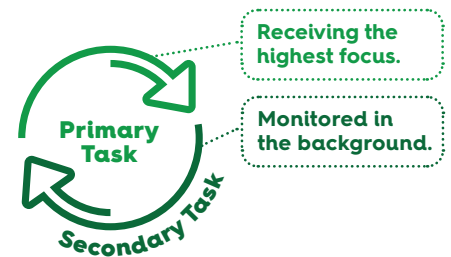
Tasks that require the driver to take a hand off the steering wheel and manipulate a device.



Tasks that draw eyes and a hand off steering wheel to manipulate a device.

Primary & secondary tasks

When a person performs two tasks at the same time, the brain identifies and processes one as a **primary task** and the other as a **secondary task**.² The cognitive process of shifting between primary and secondary tasks is called **attention-switching**.



Multitasking myth

Multitasking impairs performance. It is a misconception that two tasks can be done simultaneously and as safely as possible. People do not perform as well when trying to accomplish two attention-demanding tasks at the same time.³ *Make driving the primary focus and perform other cognitively demanding tasks only when safely parked.*

Inattentive blindness

Inattentive blindness is defined as the failure to notice a visible hazard such as a changing traffic light, a person or a vehicle that has slowed down or stopped in front of you.

Information processing in the brain

When driving in demanding environments, the brain constantly processes huge amounts of information related to the primary task of driving. The brain's information-processing steps align with the acronym **SPIDER**: scanning, predicting, identifying, decision-making and executing a response.⁵



Cell phone ownership is near 100% with 1 out of 10 drivers using a cell phone.⁶

Vision is the most important way drivers get the information they need to drive safely. Yet drivers using cell phones have a tendency to “look at” but not “see” objects. Estimates indicate drivers using hands-free cell phones look at but fail to see up to 50% of the information in their driving environment.⁷ Even when a driver’s eyes are on the road and hands are on the wheel, cognitive distraction causes significant impairments to driving – known as tunnel vision.



Figure 1. Driver's field of vision *without* cell phone use



Figure 2. Driver's reduced field of vision *with* cell phone use



**Distractions
can wait.**
Driving can't.

Hands-free devices and voice command systems can be distracting

The cognitive distraction from paying attention to conversation or In-Vehicle Information Systems (IVIS) alerts – from listening and responding to a disembodied voice – can be similar on both hand-held and hands-free devices, because the driver’s brain is allotting some of its processing power to the phone conversation rather than scanning the road, tracking the movement and position of other vehicles and watching for hazards.



Using a cell phone while driving is more dangerous than talking to passengers or listening to music.⁷

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Increasing Concerns

In-vehicle infotainment systems (touchscreens, infotainment options and other features) **divert driver attention** from the roadways.



Recommendations



Employers: Ban phone meetings and other communications with employees while they are driving.



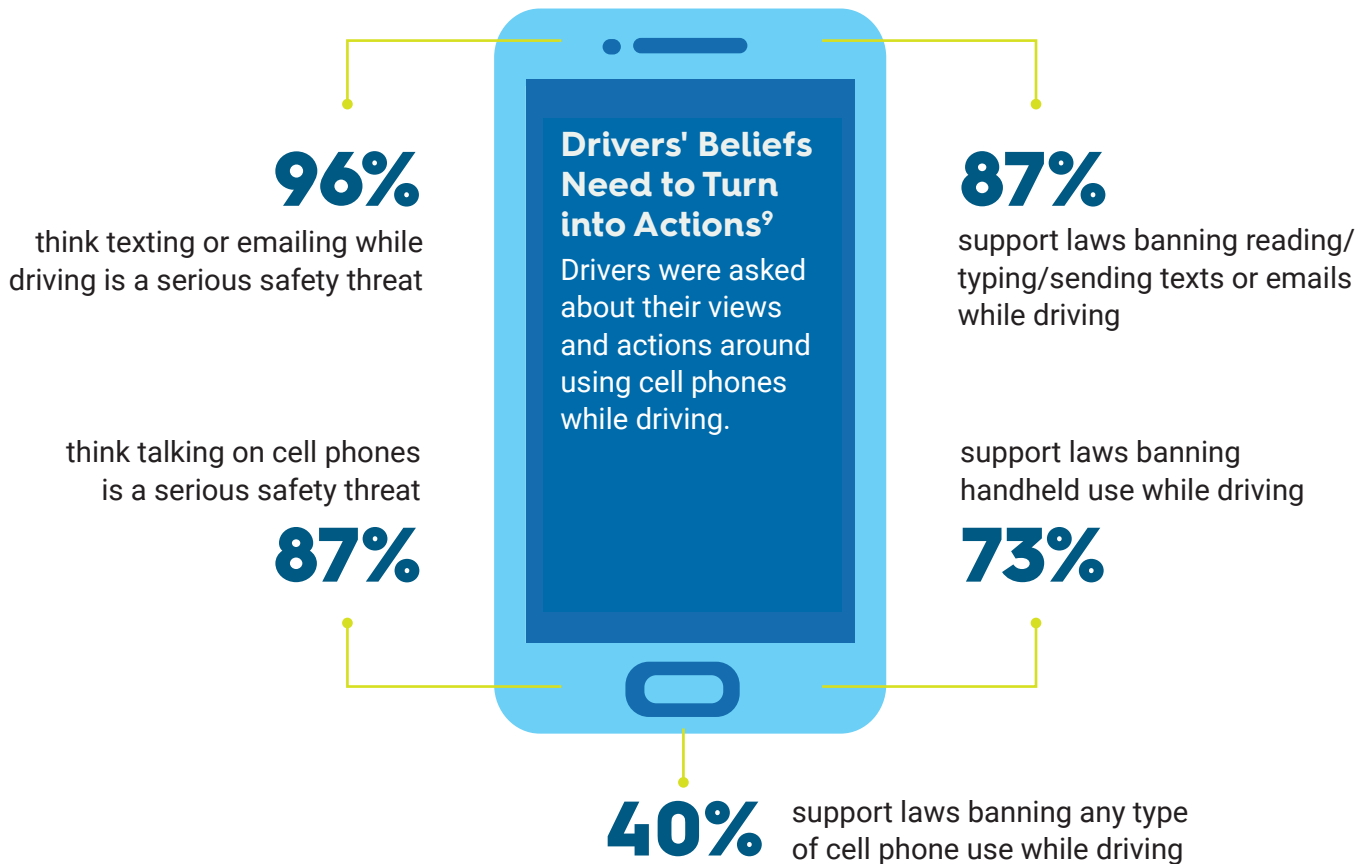
Manufacturers: Make interactive in-vehicle technology simpler and more intuitive so driver attention is not diverted from the primary task of driving.



Drivers: Do not use hands-free or handheld cell phones, voice command systems or interactive in-vehicle technology such as dashboard touchscreens while driving. More than a single touch or swipe can cause unsafe distractions.

Drivers think cell phone use is distracting ... for other people.

Cell phone use behind the wheel



Additional distracted driving resources from the National Safety Council:

nsc.org/roadtozero

nsc.org/driveithome

Cites:

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