

## Behind the Wheel at Work



### NIOSH Center for Motor Vehicle Safety

*Behind the Wheel at Work* is a quarterly eNewsletter bringing you the latest news from the NIOSH Center for Motor Vehicle Safety.

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## Distracted Driving

What's the science behind cognitive distraction? Are cell phones the main cause of distracted driving crashes? What should you include in a distracted driving policy? Let's explore answers to these distracted driving questions.

### Update on the Coronavirus Disease 2019 (COVID-19) Response

While the NIOSH Center for Motor Vehicle Safety will continue to share valuable safety information in our quarterly Behind the Wheel at Work eNewsletter, you can stay up to date on the COVID-19 response in real time on the [COVID-19 webpage](#) or sign up for the [COVID-19 newsletter](#).

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## Keep Your Mind on Driving



Driving requires our full attention, and distractions get in the way. Three types of distraction affect our ability to drive safely: visual, manual, and cognitive. Visual distractions, such as reading a text message, and manual distractions, such as reaching for items in the vehicle, might be easier to recognize and understand, as they involve taking your eyes off the road and hands off the wheel. In this article, we focus on cognitive distractions, which affect your ability to be fully engaged in driving, even when your hands are on the wheel and you're watching the road.

### Cognitive Distraction

**Cognitive distractions** take your mind off driving. According to Dr. David Strayer, an expert on

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distracted driving, cognitive distraction occurs “when attention is withdrawn from the processing of information necessary for the safe operation of a motor vehicle.”<sup>[1]</sup> Cognitive distractions can be triggered by people, objects, or events – or they can simply be random thoughts. Examples include arguing with a passenger, thinking about your next appointment, and talking on the phone – even if it’s hands-free. Hands-free phones are just as distracting as handheld phones.

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## The Facts

- **Our brains have a limited capacity for attention.** Any non-driving task we perform while behind the wheel reduces the amount of attention available to us for detecting and reacting to potential hazards on the road. The less attention we give to driving, the greater the chance we will be involved in a crash. <sup>[2]</sup>
- **We may think we’re successfully multitasking while driving and using a cell phone, but that’s not the case.** In fact, we’re not performing any task to our full ability. Our brains are switching back and forth between tasks, and this doesn’t happen immediately. Although this switch may take only fractions of a second, it causes delays in reaction and braking which can lead to crashes. After the brakes are applied, a vehicle traveling 40 mph goes another 120 feet – about 8 car lengths. If your brain is in the process of switching tasks when you need to react quickly, your vehicle will travel several additional car lengths before it stops. <sup>[2]</sup>
- **Cognitive distraction can also impair your vision of the road and surrounding areas.** Research has shown that drivers who are using cell phones may be looking at but failing to see up to 50% of the information in their driving environment. Usually, the driver’s “field of view” is narrowed to what is directly in front of them. As a result, the missing 50% of information may include a stop sign, a stopped vehicle, or a child. <sup>[2]</sup>

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## The Research

- A national study of over 3,500 U.S. drivers’ actual on-the-road behaviors over 3 years found that at any given time, 52% of drivers were distracted in some way. In 68% of the crashes that led to injury or property damage, some type of distraction was present. <sup>[3]</sup>
- A review of 342 studies found overwhelming evidence that all kinds of distraction impair driving ability. This review also found that the use of a hands-free phone was just as likely to lead to impaired driving ability as the use of a handheld phone. In other words, although hands-free phones presumably reduce both manual and visual distraction, cognitive distraction remains and leads to serious impairment. <sup>[4]</sup>
- A NIOSH study reported that across 70 companies, having a full ban on the use of mobile equipment while driving was significantly associated with a lower percentage of fleet vehicles being involved in a collision. <sup>[5]</sup>
- Research shows that different types of non-driving activities are associated with different levels of cognitive distraction:
  - Some activities, such as listening to the radio or an audiobook, are not very distracting.
  - Other activities, such as talking with a passenger or talking on a handheld or hands-free cell phone, are associated with moderate levels of cognitive distraction.
  - Using a speech-to-text system to send and receive text or e-mail messages creates a relatively high level of cognitive distraction. The data suggest that a rush to use voice-based interactions in the vehicle may have unintended consequences that adversely affect traffic safety. <sup>[1]</sup>



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## Prevent Cognitive Distraction

Results from research can be used to craft science-based policies to prevent cognitive distraction while driving. Employers can establish and implement a distracted driving policy that specifically prohibits the use of both handheld and hands-free cell phones for texting, talking, placing, or

answering calls while the vehicle is in operation. Keep reading for more steps to develop a full distracted driving policy

[1] [Measuring Cognitive Distraction in the Automobile](#)  

[2] [Understanding the distracted brain: Why Driving While Using Hands-Free Cell Phones is Risky Behavior](#)  

[3] Dingus TA, Guo F, Lee S, et al. Driver crash risk factors and prevalence evaluation using naturalistic driving data. *Proceedings of the National Academy of Sciences*. 2016;113(10):2636-2641.

[4] Atchley P, Tran AV, Salehinejad MA. Constructing a publically available distracted driving database and research tool. *Accident Analysis & Prevention*. 2017;99, Part A:306-311.

[5] Vivoda JM, Pratt SG, Gillies SJ [2019]. The relationships among roadway safety management practices, collision rates, and injury rates within company fleets. *Saf Sci* 120:589-602.

## Safety Tip



As part of your distracted driving policy, consider checking employees' cell phone records any time they are involved in a crash. [Research](#) has shown that companies that do this have significantly lower crash rates.

## How to Develop a Distracted Driving Policy



A policy to reduce distracted driving in your workforce is a critical part of a motor vehicle safety program. Successful implementation of a policy demonstrates commitment to the safety of your workforce, helps prevent distraction-related crashes, and can help manage your organization's liability in the event of a crash.

As you develop your policy, think about each of the elements in the following checklist. Not all may apply to your organization.

### Who will we involve in developing the policy ?



As with any occupational safety initiative, support from the highest levels of your company is critical to success. If high-level leaders visibly commit to the policy and follow it themselves, everyone in the company is more likely to accept the policy. Involving unions and safety committees from the beginning will also increase the chances of worker buy-in.

### Who will the policy cover?



A distracted-driving policy covers everyone in the company, including executives and managers. Companies that employ contract or temporary workers should consider whether the distracted driving policy will apply to those workers. Many companies require that contractors follow the same motor vehicle safety policies as their directly-hired employees. If this is the case, the distracted driving policy also applies to them.

### Which vehicles will be covered?



For highest levels of safety and reduced liability, the policy should cover all of the following: vehicles leased or purchased for company business, including authorized personal use of those vehicles; employees' personal vehicles driven on company business; motor pool vehicles; vehicles leased or purchased by contractor companies; and rental vehicles.

### What devices will the policy cover?



Here, it helps to be as specific as possible. Based on research on the dangers of cognitive distraction, the policy should prohibit the use of both handheld and hands-free cell phones for texting, talking, placing, or answering calls while the vehicle is in operation. The policy applies regardless of who owns the device: the company or the worker. Many companies also prohibit in-vehicle use of other devices such as tablet computers, programming of GPS and navigation systems, or interaction with any system that requires manual or voice interaction.

### Will emergency use be permitted?



Most company policies allow cell phones to be used in emergencies. Specify that the vehicle must be safely parked to do so.

### What other exceptions, if any, will be permitted?

This may depend on the type of work. For example, law enforcement agencies rely on in-vehicle mobile data terminals to

check motor vehicle records and retrieve data, and other first responders have similar needs. Distracted driving policies for first responder agencies should incorporate specific guidelines to account for their special operating situations.



**What are employees expected to do once the policy is in place?**



Many policies include instructions to employees that will help support the prohibition of cell phone use (e.g., placing the device in the trunk of the vehicle while driving, and recording a voice message that lets callers know you are driving and will respond when it is safe to do so).

**What administrative actions will support the policy?**



Many companies include safety performance as part of supervisors' periodic evaluations. Success in implementing a distracted driving policy could be a component of that evaluation. Organizational units that develop innovative ways to promote the new policy might receive special recognition. Consider checking employee cell phone records any time they are involved in a crash. [Research](#) has shown that companies that do this have significantly lower crash rates.

**Will we use technology to monitor compliance with the policy?**



Technology can help monitor compliance with the distracted driving policy. Phone apps that automatically block incoming calls are used by many companies. In addition, many companies use [in-vehicle monitoring systems \(IVMS\)](#) as a driving improvement tool. IVMS with video cameras can identify cell phone use that occurs with risky driving behaviors such as hard braking and lane departure, offering a tool for effective driver coaching.

**What are the consequences for violating the policy?**



Clear communication and follow-through are key here. However, there is no single approach that will work for all companies. Some companies apply progressive discipline as the number and severity of violations increase. In other companies, any violation of the distracted driving policy is grounds for dismissal.

**How will we prepare to roll out the policy?**






Set the stage for the new policy well in advance of the planned implementation date. Frequent communication and a positive tone are essential. Educational campaigns, group discussions, and awareness training can all help promote acceptance of the policy before it is implemented. In addition to giving an orientation to the new policy, these activities might also be used to inform employees that distracted driving covers more than use of cell phones and other devices: it also includes reaching for dropped objects, eating and drinking, and grooming.

**How will employees acknowledge that they have read and understand the policy?**





Employees should acknowledge that they have read and understood the policy. This process might be part of activities to inform employees about the policy. The acknowledgment should be placed in employees' training or personnel records.

**What resources will help me develop and implement a policy?**

- National Safety Council (NSC): The [NSC Safe Driving Toolkit](#)  includes numerous tools to support development and implementation of a distracted-driving policy.
- Network of Employers for Traffic Safety (NETS): NETS offers a [distracted driving module](#)  as part of its Drive Safely Work Week campaign materials.
- ANSI Z15.1 standard: [ANSI Z15.1 - 2017](#)  is a national fleet safety management standard that includes requirements for distracted-driving policies.

## Quiz Resources

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NSC [2015]. [Employer Liability and the Case for Comprehensive Cell Phone Policies](#)  

NHTSA [2020]. [Research note: Distracted driving 2018](#) 



## Myth or Fact?



Can you tell the difference? Take the quiz.

IIHS/HLDI. [Distracted Driving: Cellphone use by drivers](#)  
✦

Dingus TA, Guo F, Lee S, et al. [2016]. Driver crash risk factors and prevalence evaluation using naturalistic driving data. *Proceedings of the National Academy of Sciences* 113(10):2636-2641.

## Reduce Crash Risks During These Distracting Times



In an [earlier issue](#) of *Behind the Wheel at Work*, we focused on journey management, defined as a planned and systematic process of reducing transportation-related risks within a company's operations. During the reopening of businesses, adopting journey management principles can protect the health of your workforce in addition to reducing the risk of crashes and injuries.

### How does journey management apply?

**Question the need for travel.** In recent months, business travel has decreased significantly, and many people are working from home. As economic activity resumes, companies can consider whether business needs can be met if employees continue to drive less. Some workers, such as truck drivers and first responders, need to commute to their worksite or be on the road during the workday. However, it's possible that work from home will become the norm for some types of jobs and that employers will continue to take advantage of the capacity for virtual work.

**Reduce risks associated with necessary travel** by combining trips, combining loads, and identifying the shortest safe routes.

### What are the benefits?

- Fewer crashes and injuries because of fewer miles being driven
- Lower fleet operating costs
- Reduced environmental impacts of driving
- Less time spent driving and more time engaged in work tasks
- Less burden on the healthcare system from fewer crash-related injuries

### If driving is unavoidable, what should employers consider?

Distracted driving and speeding continue to put workers at risk.

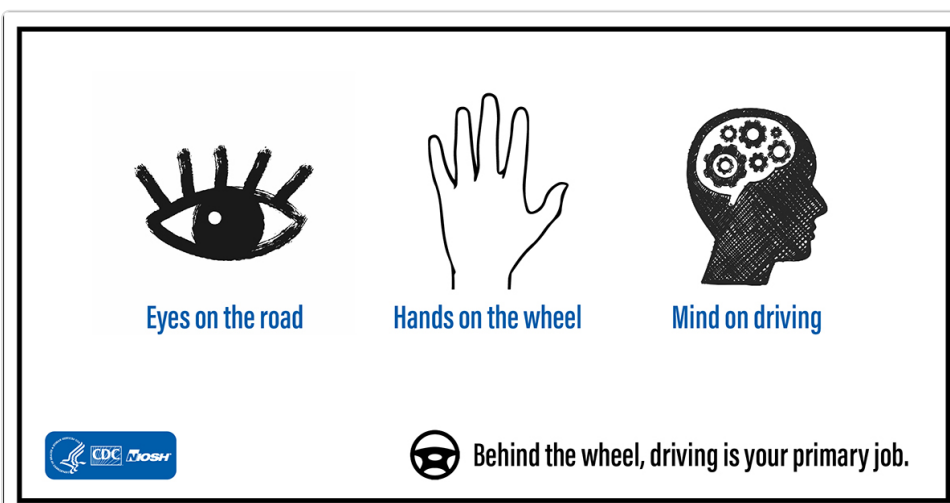
**Distracted driving:** Today, many drivers are coping with new sources of cognitive distraction that can divert their attention from their primary job of driving. We worry about keeping our families safe and healthy, we miss the family and friends we can't see right now, and we wonder whether our lives will ever go back to normal. Any of these concerns can pre-occupy us while we're driving, so it's even more important to eliminate other potential sources of distraction. Employers should remind workers who drive to avoid distractions and follow the company's policies on distracted driving.

living.

**Speeding:** A study from California found that after stay-at-home measures were put in place, road traffic crashes and fatalities decreased by 50%. This study also compared average speeds on a sample of roads to average speeds at the same time last year. Average speeds on a number of these roads, especially on interstates and freeways, were significantly higher this year. This is probably the result of decreased congestion due to significantly less traffic on these roads. It's important for employers to stress that workers must drive within the speed limit. Research consistently links higher speeds to more severe crashes and more deaths.[6]

[6] Special Report (Update): Impact of COVID19 Mitigation on Numbers and Costs of California Traffic Crashes [PDF](#) [Link](#)

## Images to Promote Focused Driving



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