

Distracted Driving is Impaired Driving

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If this was your company,
What would you do?



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What Is Distracted Driving?



Measuring The Risks of Distracted Driving

Epidemiology research

- Correlations of emergency room and cell phone records

Experimental and Laboratory studies

- Simulators
- Test tracks
- MRI brain scans

Naturalistic research

- Cameras in cars
- Eye tracking devices



Types of Driver Distractions

Visual – Eyes off road

Most are for short durations of 1-2 secs (billboards, dashboard glances, GPS maps, scenery). Low crash risk of 0-1.5x.

Mechanical – Hand off wheel

Most do not significantly affect driving (eating, drinking, tuning radio). Low crash risk of 0-1.6x.

Combinations of Visual & Mechanical

Moderately increased risk (handling or retrieving object, such as CD, mobile device, personal grooming). Crash risk of 0-3.8x.



Risks of Cell Phone Use

- More than 50 peer-reviewed research studies (epidemiological, experimental and naturalistic) have reported substantial negative effects of cell phone use on driving.
- Epidemiological studies define the risk of cell phone use while driving as a **4x** increased risk.



Why Are Cell Phones Higher Risk?

Cognitive Distraction – Mind off driving

Higher risk due to brain overload and selective attention.

Often exhibited through inattention blindness and tunnel vision, evidenced by decrements in speed, headway and response times.

Can impair driving for long periods.

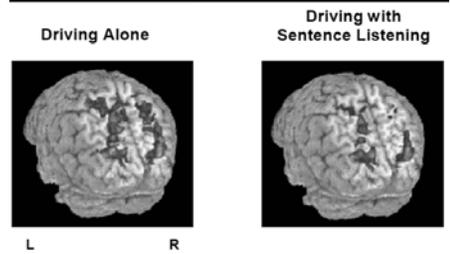


Brain Overload

- When people perform two cognitive tasks simultaneously (like driving and talking on a phone), a resource constraint exists in the brain, reducing the available resources for each individual task.
- The parietal activation associated with driving decreases by 37% with sentence listening.
- Brain imaging scientists liken this to plugging in an iron and a hairdryer at the same time, causing brownout.



Brain Overload



Selective Attention/ Switching

- When brains are overloaded by two cognitive tasks, people switch attention (without recognizing it) and make one task "primary" and the other "secondary".
- Cognitive attention to driving can become secondary to a phone conversation.
- When driving is a secondary task for the brain, driving becomes impaired. The impairment takes several forms, including inattention blindness and tunnel vision.



Inattention Blindness



What a driver in a simulator saw when not using a phone.

What the same driver saw while on a phone conversation.



Tunnel Vision



Frame of vision of drivers not using a phone.



Frame of vision of same drivers during phone conversations.



Driving Deficiencies While Using Cell Phones

1. Slower response times for all phone-related tasks.
2. Drivers do not appreciably compensate by giving greater headway/following distance or reducing speed.



Do Hands-Free Devices Reduce The Risk?

- More than 30 studies reported substantial negative effects of cell phone use on driving for hands-free and hand-held phones.
- Effects in reaction time, speed, headway and lateral lane position, for hand-held and hands-free phones.

WHY DO HANDS-FREE PHONES NOT REDUCE THE RISK?

BECAUSE THEY DO NOT REDUCE COGNITIVE DISTRACTION!



Are Passenger Conversations A Risk?

- Conversations with passengers are generally low risk, though there can be exceptions.
- Passengers provide collaborative problem-solving, shared situation awareness and active support of the driver by the passenger.
- A front seat passenger reduces the risk of a crash to 38% of that of a cell phone conversation.



Sources of Distraction

Combinations of Visual, Mechanical & Cognitive

Generally highest risks 3x-23x.

- Applying makeup 3.8x
- Reading 3.4x
- Reaching for a moving object 8.8x
- Turning around in seat 8.8x.
- Texting 8-23x.



Why Teens Are Highest Risk

- Teens are the most inexperienced drivers, with the highest crash rates of any group.
- Teens are the age group most engaged in the most distracting behaviors -- 36% of teens admit to texting while driving, compared to 15% of Gen X and 4% of boomers.
- Teens (along with many adults) over-estimate their driving skills and abilities and under-estimate the effect of distractions on their driving.



Translating Risk Into Crashes

- While some activities are higher risk than others, they do not necessarily cause more crashes, injuries or deaths.
- How many crashes occur due to a specific behavior is a function of the level of **risk** and the **prevalence** of the activity.

Risk: How risky is it?

Prevalence: How many people are doing it for what period of time?



Texting: Risk + Prevalence

- **Risk:** Increased risk of injury from texting while driving: 8x up to 23x.
- **Prevalence:** 1% of drivers at any one time are manipulating hand-held devices. The number texting is lower than that.
- **Result:** Minimum of 200,000 crashes, or 3% of all crashes, involve texting.



Cell Phone Use: Risk + Prevalence

- **Risk:** Increased risk of injury from using a cell phone while driving: 4x
- **Prevalence:** 11% of drivers at any one time, or more than 800,000 drivers, observed using hand-held devices. The number engaged in conversations is likely higher as hands-free is not measured in observation surveys.
- **Result:** 1.4 million crashes/year or 25% of all crashes, involve cell phone use.



What Causes More Crashes?



5 Things To Remember

1. All distractions are not the same: they have different levels of risk and crash involvement.
2. The principal risk with cell phone use while driving is cognitive distraction. "Hands on wheel, eyes on road" is insufficient for safety and does not represent best knowledge or best practice.
3. Texting is very high risk and teens are the highest-risk group.
4. Hands-free laws likely will not be effective in reducing risks or crashes.
5. The number one driver distraction that causes the most crashes is cell phone use.



Implications for Employers: Managing & Reducing Risk

- Allowing employees to conduct company business on cell phones while driving is to allow a 4x increase in crash risk.

Would the same employers allow workers to perform their jobs in ways that increased injury risk by 4x ?
- Employers must recognize the even higher risks associated with text messaging, reading and answering email while driving.



Implications for Employers: Increased Liability

\$21.6 million - A jury found a broker liable for talking on her cell phone and causing a fatal crash.

\$20.9 million - Company lost a personal injury suit resulting from an employee using a cell phone when a fatal crash occurred.

\$18 million - A transport company paid damages to a man left unable to walk or talk after a crash caused by a driver distracted by a cell phone.

\$5.2 million - A paper company employee was using her company-supplied cell phone when she rear-ended a vehicle.

\$2.5 million - A state paid its share of liability for a crash involving a state employee who was talking on her cell phone when she hit a tourist.

\$1.5 million - A City paid the victim of a crash involving a city worker who was using his cell phone while driving.



Elements of Safety Excellence

- Management Leadership & Employee Engagement
- Risk Management
- Safety Management Systems
- Measurement



Management Leadership & Employee Engagement

Leaders model behavior – stop using cell phones when driving & change your voice mail greeting.

Involve employees about the issue and help them develop new social norms with friends, spouses, cab drivers.



Risk Management

Understand the 4x risk of cell phone use.

Educate employees about the issue

Safety Management Systems

Implement a policy banning cell phone use while driving and enforce it wisely.

Monitor compliance just as you would for any safety policy.



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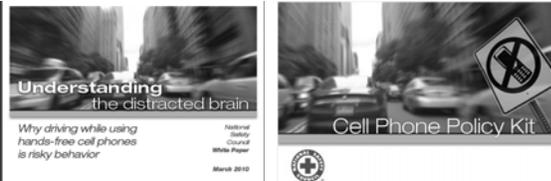


Measurement

Measure effectiveness and impact on crash reductions, productivity and customer service.



Resources for Employers Distracteddriving.nsc.org



Policy Implementation Plan

Week 1	Week 2	Week 3	Week 4
<i>Inform</i>	<i>Educate</i>	<i>Implement</i>	<i>Reinforce</i>
NSC Cell Phone Announcement	Frequently Asked Questions	Presentation Script for Policy Rollout	Tips for Distraction-Free Driving
Call to Action	Distracted Driving Top 10 List	Policy	Pocket Policy Card
Articles about the scientific facts of the issue.	Distracted Driving One Hour Training Course	Voice Mail Greeting	Safety Stuffer
Voice Mail to Employees	Pull Over Poster		Focus on Your Driving Poster



Employers Taking Action

*Survey of NSC Member Organizations
August, 2009*

- 469 of 2,004 participants (23%) have bans that include both hands-free and hand-held wireless communication devices.
- 36% of NSC members w/o policies have plans in the next 12 months to create policies.



Effects of Policies

- 71% of companies with policies have seen either an increase (10%) in productivity or no impact (61%).
- Only seven companies (1.5%) with policies reported a decrease in employee productivity.
- 22% of companies with policies reported decreases in employee crash rates and vehicle property damage.
- 65% have observed improvements or no impact on employee morale.



One Employer's Experience

*Survey of AMEC employees one year after
corporate cell phone driving ban.*

- 97 % agreed that talking on a cell phone impacts a person's ability to drive safely.
- 96% felt that responsible companies should discourage use of wireless communications while driving.
- 95% said they did not experience a decrease in productivity.
- 83% said they had reduced or quit using wireless devices while driving outside of work.



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