

Distracted Driving is Impaired Driving

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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.

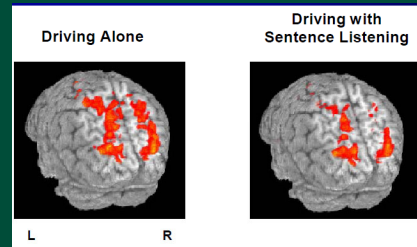


Brain Overload

- 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



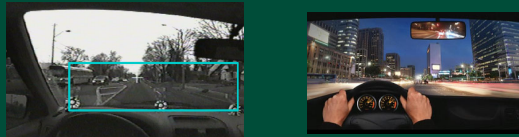
What a driver in a simulator saw when not using a phone.



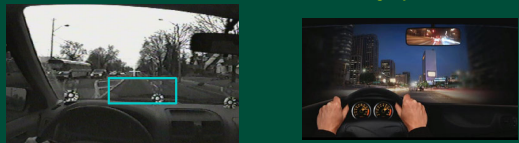
What the same driver saw while on a phone conversation.



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.



5 Things To Remember

1. All distractions are not the same: they have different levels of risk and crash involvement.
2. Cognitive distraction is real. It's not where your hands are, it's where your head is.
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, unless they reduce all cell phone use.
5. The number one driver distraction that causes the most crashes is cell phone use.



**How Do We Solve This Problem
of 1.6 million crashes/year
caused by cell phone use & texting?**



National Safety Council Strategies

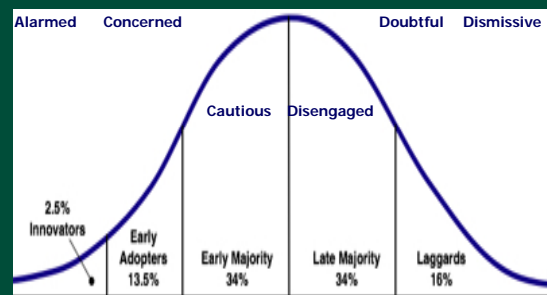
1. Education: Educate the public about the risks and crash involvement of cell phone use and the special risks of texting/email/internet use.
2. Build public awareness about the special risks of texting/email/internet use.
3. Legislation: Work with legislators to enact texting bans. Seek the first state to enact a total cell phone ban.
4. Business Policies: Work with employers to enact cell phone bans for all employee use.
5. Technology: Seek technology solutions.



**1. Education is very important,
but by itself,
does not change much behavior.**



Changing Behaviors



What We Learned From Seat Belts

- Millions of dollars in PSAs, education had almost zero impact. Seat belt use in 1981 before the first law was 14%.
- Laws increased use from 14% to 61% in 15 years.
- “Click it or Ticket” – high visibility enforcement – combined with more laws increased use from 61% to 84% in 10 years.



Education Strategy

- Conventional “awareness” education is important in building understanding, but has limited impact in changing behaviors.
- Business policies can be effective in changing behavior at work.
- Encourage business leaders and safety professionals to adopt “no cell phone use” as best practice in their organizations.
- Make it socially unacceptable to use a cell phone while driving.



**2. Strong Laws,
Actively Enforced,
Are Proven Effective
in Changing Behaviors.**

And the Public Supports Them.



Public Support for Laws

- 80% support bans on texting and emailing, 67% support restrictions on phone use, 53% support total bans.
- 82% of those who admit to using cell phones while driving say a law would change their behavior.



Current Legislative Landscape

- Handheld Cell Phone Bans for All Drivers
8 states & DC
- Ban on cell phone use by school bus drivers
17 states & DC
- Ban on cell phone use by novice drivers
20 states & DC
- Ban on text messaging by all drivers
30 states & DC
- Ban on text messaging by novice drivers
9 states



**3. The business community
is leading the way.**



Implications for Employers: Adopt Best Practices

- Allowing employees to conduct company business on cell phones while driving is to allow a 4x increase in crash risk.
- 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 driver negligent for talking on her cell phone and causing a fatal crash.

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

\$18 million - Holmes Transport was ordered by a judge to pay damages to a man left unable to walk or talk after a crash caused by one of their drivers distracted by a cell phone.



Engaging Business To Lead On This Issue



DistractedDriving.nsc.org



What Should Employers Do?

- **Personal Leadership** – stop using cell phones when driving & change your voice mail greeting.
- **Educate employees** about the issue and help them develop new social norms with friends, spouses, cab drivers.
- **Implement a policy** banning cell phone use while driving and enforce it wisely.
- **Monitor** compliance just as you would for any safety policy.
- **Measure** effectiveness and impact on crash reductions, productivity and customer service.



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.



Making our World Safer®

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