

Cell Phones & Driver Distraction



Today's Focus

- What is the scope of the problem of cell phone use while driving?
- What are the nature and magnitude of the risk?
- How do the distractions from cell phone use compare to other driver distractions?
- What are the implications for employers ?



Scope of the Issue

- 257 million people in the U.S. are cell phone subscribers (*CTIA, April 2008*)
- The linkage of cell phones to crash involvement is increasing. A 1999 study noted cell phone use was responsible for 1.2% of crashes. A 2003 report placed that at 5.2%. A 2006 study put it at 8-9%. (*Stutts, et al.; AAA; Virginia Tech*)
- 73% of motorists admit talking on cell phones while driving and 19% admit text messaging while driving. (*Nationwide Insurance*).
- Two-thirds of teens admit to text messaging while driving (compared to 16% of all cell phone users). (*Zogby*)



Measuring The Risk

- Studies correlating crashes with cell phone records found drivers using cell phones were 4x more likely to be involved in injury crashes. *(Insurance Institute for Highway Safety)*
- Simulator studies report cell phone users are 4x more likely to be in a crash. *(Strayer, U. of Utah)*
- Two epidemiological studies of 699 and 456 drivers independently found a 4x increase in crashes with people using cell phones. *(Redelmeier & Tibshirani; McEvoy, et al)*



Cell Phone Use: Effects on Driving

- Poor driving performance while conversing on a cell phone is confirmed in numerous studies, indicating cognitive rather than physical distraction. (*Patten, et al; Strayer, et al*)
- Drivers talking on cell phones have “inattention blindness” and fail to see up to half of the information in the driving environment. (*Strayer, et al*)
- Impairments occur from both hand-held and hands-free units; active engagement in conversation raises the impairment. (*Strayer*)
- The risk of cell phone use and slower reaction times are similar to the risks and reaction time associated with driving with a .08 BAC (*Redelmeier & Tibshirani; Strayer*)



Cell Phones vs. Other Distractions

- All distractions are not equal in their influence on crashes. Motorists engage in many activities (reading, eating, conversing with passengers, etc.) that have different levels of distraction and crash involvement. (*Stutts, et. al; AAA*)
- Cell Phone conversations are more distracting than radio broadcasts, books on tape, recorded conversations and passengers. (*Strayer*)
- Certain distractions (apply makeup, turn around in the seat, reach for a moving object, reading) have higher crash risks than talking on a phone. However, their lower frequency of occurrence makes their involvement in crashes and near-crash events less than that of cell phones. (*Virginia Tech*)





DID YOU HEAR
ABOUT THAT NEW STUDY
THAT SAID EVEN HANDS-FREE
CELL PHONES ARE
DANGEROUS?

I'M PROBABLY
NOT EVEN SUPPOSED
TO BE TALKING
TO YOU RIGHT NOW...

JEFF
KJERBA
2001
CHARL WOODHEAD

Cell Phone vs. Passenger Conversations

- Cell phone conversations have more navigation errors and fewer references to traffic than passenger conversations. Passengers provide collaborative problem-solving, shared situation awareness and active support of the driver by the passenger. (*Strayer*)
- A front seat passenger reduces the risk of a crash to 38% of that of a cell phone conversation. (*Virginia Tech*)



Hand-Held vs. Hands-Free

- Hand-held use increases crash risk during dialing. Dialing increases missed signals, reduces reaction time and increases mental workload. (*Virginia Tech*)
- Conversations are less distracting than dialing, but endure much longer, which leads to greater crash involvement from conversations than from handling of phones. (*Virginia Tech*)
- No difference in interference to a driver from a conversation with a hands-free or hand-held device. (*Strayer*)



Other Factors

- The content of a conversation, age of the driver and conditions outside the vehicle are significant factors in the magnitude of the distraction from cell phones. *(Tomros & Boling)*
- Multiple tasks or distractions are the most demanding. A ringing phone produces a particular hazard in conjunction with other tasks, such as interacting with music or navigation systems, high speed, or following another car. *(Landsdown, et al)*



Special Risks for Young Drivers

- Young drivers (under age 20) are most likely to be involved in distraction-related crashes. (Stutts, et al. AAA Foundation)
- Young drivers are more likely to be in a crash involving distraction. (*Virginia Tech*)
- Teen drivers are most willing to engage in distracting tasks, while adult drivers more often avoid them. (*Virginia Tech*)
- Teen driving performance is more greatly affected, including reaction times, lane position, appropriate speed and judgment. (*Virginia Tech*)



Can We Learn To Be Safer Drivers Using Cell Phones?

- Drivers modify behavior to accommodate phone use, such as pausing conversations or slowing down (*Shinar, et al*)
- Drivers learn over time. An experimental math operation over the phone, for example, proves distracting the first time, but performance later stabilizes. (*Shinar, et al*)
- Older drivers have the poorest rates of performance and learning. In some cases, novice teen drivers actually perform better and learn faster to deal with distractions. (*Virginia Tech*)



Implications for Employers

- Recognize the higher risks of crashes for employees conducting company business conversations on cell phones while driving.
- Because dialing the phone and reading are higher-risk activities, even greater risks may be associated with text messaging, and with reading and answering email.
- Employers are being sued for liability associated with crashes involving employees conducting company business on cell phones.
- Assess whether to allow employees to use phones and other electronic devices while driving. If phone conversations are allowed, should sensible restrictions be established?



Thank You!

Questions, comments, citations

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