

January 31, 2003

Study: Drivers Using Cell Phones Experience 'Inattention Blindness'

A new study in the February/March 2003 issue of the National Safety Council's *Injury Insights* describes new research that explains, specifically, how cell phone conversations while driving become a potentially dangerous distraction.

The study, by researchers David Strayer, Frank Drews and William Johnston at the University of Utah, titled "Cell Phone Use Can Lead to Inattention Blindness Behind the Wheel", shows that conversing on cell phones while driving disrupts the driver's attention to the visual environment, leading to what the authors call "inattention blindness", or the inability to recognize objects encountered in the driver's visual field.

In a previous study reported in the August/September 2001 issue of *Injury Insights*, the same authors found that conversing on cell phones while driving can lead to significant decreases in driving performance. The study found that driver distractions due to cell phone use can occur regardless of whether hand-held or hands-free cell phones are used, and that cell phone conversations create much higher levels of driver distractions than listening to the radio or audio books. The authors suggest that banning hand-held devices, but permitting hands-free devices in motor vehicles is not likely to significantly reduce driver distractions associated with cell phone conversations.

The new study, conducted at the University of Utah, used 20 participants in controlled, simulated driving conditions. Utilizing a PatrolSimII+ driving simulator from GE I-Sim, a city-driving scenario was used and a number of digital images of real-world billboards were positioned in the driving scene in clear view as the participants drove past them. An eye-tracking device was used to determine whether or not the participants fixated on each billboard. Afterwards, participants were given a surprise recognition memory test to determine incidental memory of billboards. One-third of the billboards were presented in the driving but not conversing (single-task) condition, 1/3 were presented in the driving and conversing on a hands-free phone (dual-task) condition, and 1/3 were used as control stimuli in an incidental memory task, not presented in the driving scenarios.

The authors suggest that even when participants are directing their gaze at objects in the driving environment, they may fail to "see" them when they are using a cell phone because attention is directed elsewhere. The data also suggests that legislative initiatives that restrict hand-held devices but permit hands-free devices are not likely to eliminate the problems associated with using cell phones while driving. The problems are attributed in large part to the distracting effects of the phone conversations themselves, which direct attention away from the external environment and towards an internal, cognitive context associated with the phone conversation.

"This study sheds additional light on the subject of driver distraction and its causes," says Alan C. McMillan, President of the National Safety Council, "and it underscores once again that a driver's primary obligation is to give his or her full attention to operating the motor vehicle

safely. More research is needed to help us fully understand the impact of cell phones and other electronic devices on driver distractions and motor vehicle safety."

The issue of driver distractions caused by cellular phones becomes increasingly important as cell phone use becomes more prevalent in American life. According to studies conducted by the National Highway Traffic Safety Administration (NHTSA), some form of driver distraction is a contributing factor in 20 to 30 percent of all crashes. The Cellular Telecommunications and Internet Association estimates that there are currently 134.5 million cellular phones in operation in the United States, and a recent NHTSA survey found that nearly 75 percent of drivers reported using their phone while driving. A NHTSA observational study released in 2001 estimated that 500,000 drivers of passenger vehicles (cars, vans, sport utility vehicles and pickups) are talking on hand-held cell phones during any given daytime moment throughout the week.

The two studies featured in Injury Insights are part of a larger research project conducted by the University of Utah researchers. The results of the larger project, including the study described in this issue of Injury Insights, will be published in the March 2003 issue of The Journal of Experimental Psychology: Applied

National Safety Council