

Drivers on Cell Phones are as Bad as Drunks

Utah Psychologists Warn Against Cell Phone Use While Driving



Three years after the preliminary results first were presented at a scientific meeting and drew wide attention, University of Utah psychologists have published a study showing that motorists who talk on handheld or hands-free cellular phones are as impaired as drunken drivers.

"We found that people are as impaired when they drive and talk on a cell phone as they are when they drive intoxicated at the legal blood-alcohol limit" of 0.08 percent, which is the minimum level that defines illegal drunken driving in most U.S. states, says study co-author Frank Drews, an assistant professor of psychology. "If legislators really want to address driver distraction, then they should consider outlawing cell phone use while driving."

Psychology Professor David Strayer, the study's lead author, adds: "Just like you put yourself and other people at risk when you drive drunk, you put yourself and others at risk when you use a cell phone and drive. The level of impairment is very similar."

"Clearly the safest course of action is to not use a cell phone while driving," concludes the study by Strayer, Drews and Dennis Crouch, a research associate professor of pharmacology and toxicology. The study was set for publication June 29 in the summer 2006 issue of *Human Factors: The Journal of the Human Factors and Ergonomics Society*.

The study reinforced earlier research by Strayer and Drews showing that hands-free cell phones are just as distracting as handheld cell phones because the conversation itself – not just manipulation of a handheld phone – distracts drivers from road conditions.

Human Factors Editor Nancy J. Cooke praised the study: "Although we all have our suspicions about the dangers of cell phone use while driving, human factors research on driver safety helps us move beyond mere suspicions to scientific observations of driver behavior."

The study first gained public notice after Strayer presented preliminary results in July 2003 in Park City, Utah, during the Second International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design. It took until now for the study to be completed undergo review by other researchers and finally be published.

Key Findings: Different Driving Styles, Similar Impairment

Each of the study's 40 participants "drove" a PatrolSim driving simulator four times: once each while undistracted, using a handheld cell phone, using a hands-free cell phone and while intoxicated to the 0.08 percent blood-alcohol level after drinking vodka and orange juice. Participants followed a simulated pace car that braked intermittently.

Both handheld and hands-free cell phones impaired driving, with no significant difference in the degree of impairment. That "calls into question driving regulations that prohibited handheld cell phones and permit hands-free cell phones," the researchers write.

The study found that compared with undistracted drivers:

- Motorists who talked on either handheld or hands-free cell phones drove slightly slower, were 9 percent slower to hit the brakes, displayed 24 percent more variation in following distance as their attention switched between driving and conversing, were 19 percent slower to resume normal speed after braking and were more likely to crash. Three study participants rear-ended the pace car. All were talking on cell phones. None were drunk.
- Drivers drunk at the 0.08 percent blood-alcohol level drove a bit more slowly than both undistracted drivers and drivers using cell phones, yet more aggressively. They followed the pace car more closely, were twice as likely to brake only four seconds before a collision would have occurred, and hit their brakes with 23 percent more force. "Neither accident rates, nor reaction times to vehicles braking in front of the participant, nor recovery of lost speed following braking differed significantly" from undistracted drivers, the researchers write.

"Impairments associated with using a cell phone while driving can be as profound as those associated with driving while drunk," they conclude.

Are Drunken Drivers Really Less Accident-Prone than Cell Phone Users?

Drews says the lack of accidents among the study's drunken drivers was surprising. He and Strayer speculate that because simulated drives were conducted during mornings, participants who got drunk were well-rested and in the "up" phase of intoxication. In reality, 80 percent of all fatal alcohol-related accidents occur between 6 p.m. and 6 a.m. when drunken drivers tend to be fatigued. Average blood-alcohol levels in those accidents are twice 0.08 percent. Forty percent of the roughly 42,000 annual U.S. traffic fatalities involve alcohol.

While none of the study's intoxicated drivers crashed, their hard, late braking is "predictive of increased accident rates over the long run," the researchers wrote.

One statistical analysis of the new and previous Utah studies showed cell phone users were 5.36 times more likely to get in an accident than undistracted drivers. Other studies have shown the risk is about the same as for drivers with a 0.08 blood-alcohol level.

Strayer says he expects criticism "suggesting that we are trivializing drunken-driving impairment, but it is anything but the case. We don't think people should drive while drunk, nor should they talk on their cell phone while driving."

Drews says he and Strayer compared the impairment of motorists using cell phones to drivers with a 0.08 percent blood-alcohol level because they wanted to determine if the risk of driving while phoning was comparable to the drunken driving risk considered unacceptable.

"This study does not mean people should start driving drunk," says Drews. "It means that driving while talking on a cell phone is as bad as or maybe worse than driving drunk, which is completely unacceptable and cannot be tolerated by society."

University of Utah Cell Phone Research

Previous research by Strayer, Drews and colleagues include:

- A 2001 study showing that hands-free cell phones are just as distracting as handheld cell phones.
- A 2003 study showing that the reason is "inattention blindness," in which motorists look directly at road conditions but don't really see them because they are distracted by a cell phone conversation. And such drivers aren't aware they are impaired.
- A 2005 study suggesting that when teenagers and young adults talk on cell phones while driving, their reaction times are as slow as those of elderly drivers.

The University of Utah psychologists conducted the alcohol study because a 1997 study by other researchers evaluated the cell phone records of 699 people involved in motor vehicle accidents and found one-fourth of them had used their phone in the 10 minutes before their accident – a four-fold increase in accidents compared with undistracted motorists.

Those researchers speculated there was a comparable risk from drunken driving and cell phone use while driving. So Strayer and Drews conducted a controlled laboratory study. The study included 25 men and 15 women ages 22 to 34 who were social drinkers (three to five drinks per week) recruited via newspaper advertisements. Two-thirds used a cell phone while driving. Each participant was paid \$100 for 10 hours in the study.

The driving simulator has a steering wheel, dashboard instruments and brake and gas pedals from a Ford Crown Victoria sedan. The driver is surrounded by three screens showing freeway scenes. Each simulated daylight freeway drive lasted 15 minutes. The pace car intermittently braked to mimic stop-and-go traffic. Drivers who fail to hit their brakes eventually rear-end the pace car. Other simulated vehicles occasionally passed in the left lane, giving the impression of steady traffic flow.

Each study participant drove the simulator during three sessions – undistracted, drunk or talking to a research assistant on a cell phone – each on a different day.

The simulator recorded driving speed, following distance, braking time and how long it would take to collide with the pace car if brakes were not used. The study was funded by a \$25,000 grant from the Federal Aviation Administration – which is interested in impaired attention among pilots – and by Strayer's and Drews' salaries. The Utah Highway Patrol loaned the researchers a device to measure blood-alcohol levels.

Driving While Distracted: A Growing Problem

The researchers cited figures from the Cellular Telecommunications Industry Association indicating that more than 100 million U.S. motorists use cell phones while driving. The National Highway Transportation Safety Administration estimates that at any given moment during daylight hours, 8 percent of all drivers are talking on a cell phone.

"Fortunately, the percentage of drunk drivers at any time is much lower," Drews says. "So it means the risk of talking on a cell phone and driving is probably much higher than driving intoxicated because more people are talking on cell phones while driving than are driving

drunk." The main reason there are not more accidents is that "92 percent of drivers are not on a cell phone and are compensating for drivers on cell phones," he adds.

Cell phone use is far from the only distraction for motorists. The researchers cite talking to passengers, eating, drinking, lighting cigarettes, applying makeup and listening to the radio as the "old standards" of driver distraction.

"However, over the last decade many new electronic devices have been developed, and they are making their way into the vehicle," the researchers write. "Drivers can now surf the Internet, send and receive e-mail or faxes, communicate via a cellular device and even watch television. There is good reason to believe that some of these new multitasking activities may be substantially more distracting than the old standards because they are more cognitively engaging and because they are performed over longer periods of time."