UI Study Finds Significant Shifts Occurring in Distracted Teen Driving

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UI STUDY FINDS SIGNIFICANT SHIFTS OCCURRING IN DISTRACTED TEEN DRIVING

Teens crash at a much higher rate than adults, with distractions found as a factor in nearly six out of ten moderate-to-severe teen driver crashes. In the largest naturalistic study of teen driver crashes to date, vehicle safety researchers at the University of Iowa analyzed thousands of naturalistic driving video and audio clips to identify the types of crashes teens are most frequently involved in, along with the distractions or activities competing for their attention. The results showed significant shifts in certain distracted driving behaviors, including increases in rear-end crashes associated with teens operating/looking at cell phones. New technologies like automatic emergency braking will help reduce or prevent these crashes in the future.

THE PROBLEM OF DISTRACTED TEEN DRIVING

Proportionally more than any other age group, teens involved in fatal crashes are reported to have been distracted at the time of the crash. Distractions vary widely, with the most prevalent behaviors including attending to passengers, cell phone use, and attending to something inside the vehicle. Inexperience, overconfidence, social pressures, a tendency to underestimate risk, and more frequent engagement in risky behavior are just a few of the factors confronting teen drivers today.

Determining what activities teens are engaging in before a crash occurs is not a simple task. Previous research has largely relied on survey and crash data. However, while helpful, this information has many limitations, as surveys relying on self-reporting and police reports are limited to officer, driver, passenger, or witness accounts. Naturalistic data, on the other hand, provides researchers with an unbiased view inside the vehicle during the critical seconds leading up to a crash.

In this new study, researchers with the University of Iowa used in-vehicle video recorders to supply naturalistic data, providing them with invaluable information regarding the behavioral and environmental factors present in a crash. With the analysis of these videos, researchers sought to identify the types of crashes teens are most frequently involved in, as well as the distractions or competing activities. The results show changes in the ways cell phones are used, from talking to texting, with trends suggesting further research be conducted.

KEY FINDINGS:

- **Increase** in rear-end crashes, corresponding with national data trends
- **Significant change** in the way cell phones are being used, with a shift from talking to operating/looking at phones
- **Increases** in:
  - Average time a driver’s eyes were off the forward road
  - Duration of longest glances away
  - Reaction time
  - Percentage of rear-end crashes in which the driver had no reaction prior to crash
- **Significant reduction** in both road departure and loss of control crashes
- **Significant increase** in passenger seatbelt use

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<th>Almost 60% of teen crashes involve driver distraction</th>
<th>In 2015, 92% of teens owned cell phones, 76% of which were smartphones¹</th>
<th>While driving: 70% of teens have talked on a cell phone</th>
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<td></td>
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<td>42% have read a text or e-mail</td>
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<td></td>
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<td>32% have typed or texted²</td>
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Distracting Behaviors
In general, results maintained that, over time, an average of nearly 60% of all crashes contained some type of potentially distracting behavior in the six critical seconds leading up to a crash. And while the proportions fluctuated, researchers found that the most common distractions found in past studies remained the most common: drivers attending to passengers, cell phone use, and attending inside the vehicle.

Cell Phones
Results did not show a significant increase in cell phone use over the period of the study. However, researchers did find a significant change in the way phones were being used. Among crashes involving any type of cell phone use, the prevalence of operating/looking at a cell phone increased significantly compared to talking/listening.

Specifically among rear-end crashes, researchers found an increase in the time drivers’ eyes were off the road, durations of longest glances away, reaction times, and the percent of rear-end crashes in which the driver had no reaction prior to the crash. In contrast, there was a significant reduction in the proportion of road departure crashes while drivers used a cell phone, potentially suggesting that more drivers are choosing to check messages or text at times they perceive to be safer.

As our appetite for mobile information continues to increase, we need to continue examining driving behaviors so that we can better educate drivers, inform policy makers, and aid in the design of vehicle technologies and safety systems.

- Cher Carney, UI Vehicle Safety Researcher

Case for Future Research
Of particular importance is the significantly steady increase in rear-end crashes involving teen drivers. Rear-end crashes are most often caused by following too closely and/or responding late due to inattention or distraction. While it is possible teens have started following closer, it is more likely that distraction has led to an increase in eyes off the road and slower reaction times, resulting in an increase in the proportion of rear-end crashes.

While causality cannot be inferred in this study, the resulting trends suggest that more research be conducted in the area of cell phone use with specific regard to how and when teens are choosing to engage in this behavior, whether it is truly causing an increase in rear-end crashes, and whether existing technologies can be effective in mitigating these crashes.

More Information
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