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100-Car Naturalistic Driving Study Fact Sheet: Driver Inattention Analysis Fact Sheet



NOTE: For parameters and methods from the original 100-Car Study, please see the 100-Car Naturalistic Driving Study Fact Sheet.

Inattention Analysis Purpose

- To conduct an in-depth analysis of driver inattention using the driving data collected in the 100-Car Naturalistic Driving Study.
- To establish direct relationships between driving inattention and crash/near-crash involvement.

Two Calculations

- **Relative crash/near-crash risk:** defined as the increased risk for an individual driver to be involved in a crash or near-crash.
Population Attributable Risk Percentage: defined as an estimate of the percentage of crashes and near-crashes occurring in the general population that are occurring due to increased crash/near-crash risk associated with specific factors.

Method

Driver Inattention:

- Defined as one of the following:
 - Driver engagement in secondary tasks (e.g. eating, talking on a cell phone)
 - Moderate to severe driver drowsiness
 - Driving-related inattention to the forward roadway (e.g. glance to rear-view mirror)
 - Non-specific eye glance away from the forward roadway (e.g. inopportune glance away from forward roadway)

Discoveries

Risks

- Relative Risk Findings:
 - Driving drowsy increases an individual's near-crash or crash risk by four to six times.
 - Engaging in secondary tasks that require multiple steps or eye glances away from the forward roadway increases risk by two to three times.
 - Certain behaviors increased the risk of involvement in a near-crash or crash. Reaching for a moving objects increased risk nine times, looking at an external object 3.7 times, reading 3.4 times, applying makeup 3 times, and dialing a hand-held device 2.8 times. Talking or listening to a hand-held device increased risk by 1.3 times, but this result was not statistically different than normal driving.
 - Looking away from the forward roadway for long glances at inopportune moments increase crash risk by two times that of an alert driver.
- Population Attributable Risk Percentage Findings:
 - Driving while drowsy was a contributing factor for 22 to 24 percent of the crashes and near-crashes.

- Secondary-task distraction contributed to over 22 percent of all crashes and near-crashes.
- Some inattention-related activities had high risk increases but low population attributable risk percentages because of their infrequent occurrence (i.e. reading).
- On the other hand, other activities had high population attributable risk percentages but lower individual risk increases because of their frequent occurrence (i.e. talking on a wireless phone).
- Findings suggest a clear relationship between involvement in inattention-related crashes and near-crashes and engaging in inattention-related activities during normal driving. Those who frequently chose to engage in inattention-related activities in general are more often involved in inattention-related near-crashes and crashes.

Full report can be found at:

<http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/NRD/Multimedia/PDFs/Crash%20Avoidance/Driver%20Distraction/810594.pdf>