

## **Detection of road hazards by novice teen and experienced adult drivers.**

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Affiliation: Virginia Tech Transportation Institute, 3500 Transportation Research Plaza, Blacksburg VA 24061 USA, [cklauer@vtti.vt.edu](mailto:cklauer@vtti.vt.edu) , 540-231-1564.

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Previous laboratory and simulator research has indicated that hazard detection skills and abilities are less developed among novice drivers compared with experienced adult drivers. Novices tend to miss some relevant cues and may be less able to process important elements in the environment while driving. As was found with other research methods, it was hypothesized that novices would have lower hazard detection skills and will react less appropriately to hazards than older and more experienced drivers. Three hazard perception scenarios were simulated on a test track and data were collected on newly licensed teen drivers (within 2 weeks of licensure) and a comparison group of adults. The scenarios included a hidden stop sign, hidden pedestrian, and hidden pedestrian with lane closure (this last included a text-messaging task). Discrete quantitative performance metrics were evaluated for this analysis, including: 1) Did the participant glance at the potential hazard (e.g., stop sign, pedestrian)? 2) Did the participant stop (for the stop sign scenario)? 3) Did the participant show signs of indecision, caution, or awareness (for all hazards)? Significant differences between teen drivers and more experienced adult drivers were found in a combined hazard detection analysis. Results indicate that the adult drivers observed hazards and demonstrated overt recognition of hazards more frequently than the teen drivers. Results indicated that a large portion of teen drivers failed to disengage from peripheral task engagement in the presence of hazards. The results will later be compared to naturalistic data for the same set of drivers to see whether these test track results are predictive of real-world behavior.