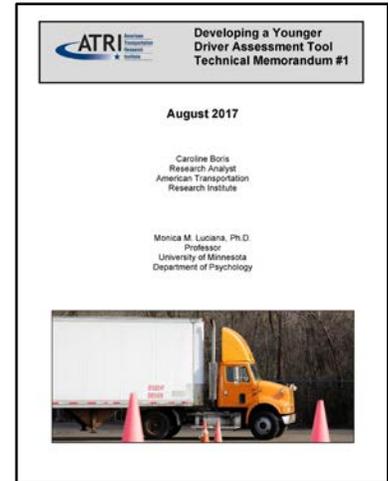


Research Identifies Multiple Characteristics that May Identify Safe Younger Drivers



The American Transportation Research Institute (ATRI) recently released the phase one findings of research investigating the potential for developing a Younger Driver Assessment Tool – one that would identify younger drivers who exhibit many of the same characteristics as safe, mature commercial drivers.

The report presents a summary of research on the crash risk associated with specific driver traits and the relationship between identified traits and driver age. It concludes that while driver age is related to crash risk, the relationship is both complex and confounded by secondary variables. The research concludes that safety outcomes may be improved by selecting drivers with a specific set of personality, health and cognitive characteristics. The research was conducted in conjunction with Dr. Monica Luciana, Professor of Psychology at the University of Minnesota.



Driver Age and Experience. The relationship between driver age and crash risk is well established – middle-age drivers typically have lower crash rates than young or elderly drivers. Researchers hypothesize the elevated crash risk of younger driver is the result of differences in perception, cognition, overestimation of driving skill, and the failure to understand potential consequences and adjust actions accordingly. Inexperience also contributes to the elevated crash risk of younger drivers, but is difficult to separate driving inexperience and other age-related factors.

Personality. Personality traits are individual differences in patterns of thought, behavior, and emotion that are consistent across time and context. Personality traits identified as having a relationship with driver safety include:

- *Low measures of agreeableness and conscientiousness* as measured by five-domain personality models. Individuals low in agreeableness may be described as suspicious and argumentative and individuals low in conscientiousness may be described as careless and impulsive. While maturation of these traits may occur, the relative rank of an individual among peers is unlikely to change.
- *Impulsivity*, regardless of age, is associated with risky driving behaviors and elevated crash risk. Impulsivity typically peaks in adolescence or young adulthood.
- *Sensation-Seeking* is the willingness to take physical, social, legal, or financial risks in the pursuit of novel, complex, or intense experiences or sensations. Sensation-seeking typically peaks in adolescence or young adulthood. High measures of sensation-seeking are associated with elevated crash risk.
- *Aggression* is related to an individual's disposition rather than incomplete development. Aggression is associated with elevated crash risk.

Health. Unlike personality and cognition, health factors generally favor young drivers. Health factors related to crash risk include fatigue/sleep disorders, attention-related disorders, substance use and emotional instability. Fatigue and sleep disorders are thought to be major contributors to crash risk, but the relationship is difficult to prove due the difficulty of objectively measuring driver fatigue. Attention-related disorders such as ADD and ADHD are typically considered childhood disorders. Attention-related disorders are associated with higher citation and crash rates, but may also overstate the effect of attentional disorders on crash risk since these are typically younger individuals with little driving experience. Elevated crash risk associated with substance use is widely recognized. Mental health

Request the full report online at TruckingResearch.org or contact ATRI at ATRI@trucking.org for more information. The American Transportation Research Institute (ATRI) is the trucking industry's 501(c)3 not-for-profit research organization.

conditions, which typically emerge in late adolescence or early adulthood, may affect driving through sleep disturbances impacting alertness, inattention affecting driving abilities, or medication side effects.

Cognition. Executive function, which regulates planning, inhibition, and behavioral flexibility, continues development into the mid-20s. While young individuals are capable of adult-level decision making, this is frequently different than what is observed in daily life. Driving requires executive functions for attention, multi-tasking, and quick reactions.

The next phase of ATRI's research will involve assembling the relevant measures of the identified predictive factors and conducting a beta test of the Assessment Tool on a small sample of both veteran and entry-level drivers. Results of the beta test will determine if a larger scale study is warranted.

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ATRI's primary mission is to conduct transportation research with an emphasis on the trucking industry's essential role in a safe, efficient, and viable transportation system.



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