









Safety Connection

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SAFETY RESEARCH

-  **Effectiveness of Level Tools and Instruction on Optimal Ladder Setup.** A new Job-Site Safety Institute (JSI) [research project](#) conducted by the University of Utah looked to quantify the barriers of safe ladder setup and aimed to measure how leveling tools, instruction/training, and ground conditions influence ladder setup safety. Ladders slipping sideways or outward remains a frequent cause of falls, particularly impacting small contractors in residential construction. The research found that built-in ladder leveling tools improve safety, but worker behavior and training retention are barriers. Other key findings include: the need for ongoing training or new tools (e.g., active alerts) to reinforce safe ladder setup; sloped surfaces increase slip risk during ladder climbing, especially when transitioning on and off the ladder; and high-friction surfaces, such as stone pavers, are safer for ladder set up base, while muddy conditions elevate ladder slip risk.
-  **Virtual Reality (VR) and Haptic Feedback.** A new [study](#) by the University of Colorado looked at *Analyzing the Impact of Virtual Reality and Haptic Feedback on the Safety Skills of Construction Workers*. The experimental study with 221 construction workers found that VR paired with prerecorded safety training can improve hazard recognition, but also uncovered surprising results: the tested VR design reduced hazard recognition performance for some participants, and neither risk perception, tolerance, nor decision-making, showed significant gains. Haptic feedback as evaluated did not yield any meaningful gains.
-  **Eye-tracking technology enhances construction safety.** A [study](#) published in the American Journal of Safety Research provided a comprehensive review of the application of eye-tracking technology to improve construction safety. Workers' ability to maintain visual focus on critical areas of a construction site directly influences their capacity to recognize safety hazards and avoid accidents. The study demonstrates that eye-tracking technology has a significant effect on construction safety, offering a platform for quantifying hazard recognition ability and strategy, guidance for construction safety. However, the current lack of commercial applications and technical limitations restrict its use in construction safety.

CONSTRUCTION SAFETY TRENDS

-  **Construction Workers' Medical Expenditures.** CPWR - Center for Construction Research and Training [Data Bulletin](#) examined medical expenditures among construction workers by demographics, worker characteristics, insurance status, health status, and usual source of care. It shows that the average construction worker had a lower annual expenditure on healthcare than workers overall (\$5,400 versus \$8,300), however construction workers who were 55 or older, white, non-Hispanic, and female had on average higher annual expenditures than all construction workers, and that approximately 15% of expenditures among construction workers were out-of-pocket expenses.
-  **Heat Injuries and Illnesses among Construction Workers.** A CPWR [Data Bulletin](#) shows construction workers are disproportionately affected by heat stress. In 2023, the construction industry accounted for over one-third of heat-related fatal injuries in the U.S. Several other key findings show heat-related fatalities occur throughout the year, with the majority of deaths (71.4%) taking place during the summer and that Specialty Trade Contractors, such as carpenters, plumbers, painters, electricians, and laborers, made up the largest share of heat-related severe construction injuries reported to federal OSHA (55.2%) from 2015 to 2023.
-  **Distracted Driving Raises Crash Risk.** A new [report](#) from the Governors Highway Safety Association and Cambridge Mobile Telematics shows drivers who use their phones behind the wheel are 240% more likely to crash and urges public officials to support and advance predictive analytics to prevent traffic deaths before they happen, marking a fundamental shift in how road safety is approached. Key insights include: new analytics methods use physics and AI-based tools to analyze risky roadway behaviors that predict and prevent crashes; predictive risk tools can uncover solvable problems that traditional crash data might miss, such as faded paint, poor signage or obstructed sightlines; and modern data analytics allows for rapidly evaluating a safety intervention's effectiveness, such as hands-free laws.