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Research *in* Action

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Teen Seat Belt Use Falters in Secondary Enforcement States



A study released today in the *American Journal of Public Health* reports significantly higher teen seat belt use in states with primary enforcement seat belt laws. Teens who live in states with primary laws were 12 percent more likely to buckle up as drivers and 15 percent more likely to buckle up as passengers compared to teens who live in states with secondary enforcement laws. A primary seat belt law allows an officer to stop a vehicle and issue a citation simply for not wearing a seat belt. A secondary seat belt law only allows for a citation to be issued if the vehicle is stopped for a primary violation, such as speeding. The study was conducted by The Children's Hospital of Philadelphia (CHOP) and funded by State Farm®.

Teen drivers in the learner's permit stage reported similar seat belt use regardless of whether their state has a primary or secondary enforcement law (88% and 87%). However, significant declines in belt use were reported among teens with provisional and unrestricted licenses in states with secondary enforcement laws, while belt use held steady for teens in primary states across the stages of licensure (unrestricted licenses: 82% primary vs. 69% secondary).

"This study suggests that if state laws do not reinforce the importance of seat belt use, as teens progress through the licensure process, they may be less motivated to buckle up, placing them at much higher risk of being injured or killed in a crash," says Dennis R. Durbin, MD, MSCE, co-author of the study and co-scientific director at CHOP's [Center for Injury Research and Prevention \(CIRP\)](#).

The study examined a nationally-representative sample of 3,126 high school students that drive and found 82 percent say they regularly wear seat belts as drivers and 69 percent report regularly buckling up as passengers. Among specific groups of teens, those reporting the lowest use of seat belts include rural residents, African-Americans, those with low grades or attending lower-socioeconomic school districts, and drivers of pickup trucks. However, seat belt use among these groups was higher in states with primary enforcement laws. "This shows that stronger seat belt laws help narrow safety disparity gaps," says J. Felipe Garcia-Espana, PhD, co-author of the study and a researcher at CIRP.

The researchers also stress that parents should always set the example by wearing their seat belt as a passenger and as a driver and insist that their teens do, too. In the event of a crash, buckling up can mean the difference between life and death.

[Read the press release.](#)

[Take a closer look at the study findings.](#)



Laudable Progress in Teen Driver Safety



Miles to go, a new teen driver safety report by The Children's Hospital of Philadelphia (CHOP) and State Farm®, charts significant progress in teen driver safety between 2005 and 2010. During this time, the number of teen drivers that died in crashes declined 46 percent – from 2,399 to 1,305 deaths. The number of their passengers that died also declined 41 percent, from 1,777 to 1,022. In 2010, 1,849 fewer teen drivers and their passengers perished in crashes as compared to 2005.

"A 46 percent reduction in teen driver fatalities in crashes is a significant public health achievement for those in traffic safety," says Dennis R. Durbin, MD, MSCE, lead author of the report and co-scientific director for the [Center for Injury Research and Prevention \(CIRP\)](#).

The report also highlights the role state-specific policy may play to further reduce teen crash fatality rates. The strength of a state's Graduated Driver Licensing (GDL) law is tied to its teen crash-related death rate. Rates among states range from a low of 3.9 deaths per 100,000 teens in Massachusetts to a high of 29.1 per 100,000 teens in Montana in 2010. The average annual fatality rate of all 50 states was 9.5 deaths per 100,000 teens. Five states—Arizona, Connecticut, Massachusetts, New Jersey, New York, and Rhode Island—have maintained rates of less than 10-crash-related deaths per 100,000 teens since 2005-06. All five have comprehensive GDL laws.

The authors recommend that many of the states with teen crash fatality rates above the national average close gaps in their GDL policy to reduce fatality rates. They also suggest utilizing evidence-based programs aimed at increasing seat belt use, reducing distractions, and teaching key driving skills, such as speed control and hazard detection, in keeping teens safe on the road.

[Download and share the report.](#)

[Watch a brief video from the report's main author explaining the findings.](#)



Congress Takes A Closer Look at Brain Injury



On March 19th, Flaura Winston, MD, PhD, founder and scientific co-director of [the Center for Injury Research and Prevention at CHOP](#), testified as one of four invited witnesses at a Congressional hearing in Washington, DC. The hearing, "A Review of Efforts to Prevent and Treat Traumatic Brain Injury," aimed to review the prevalence of traumatic brain injury (TBI), types of TBI treatment, and legislative efforts to improve treatment programs. Dr. Winston's remarks put a special emphasis on pediatric TBI and the importance of prevention of these often avoidable injuries in children.

"Each day, more than 125 of our nation's children are hospitalized or die from traumatic brain injury. Car crashes, sports, falls and child abuse are the likely causes – largely preventable events at great cost to families and to society. Therefore, as a nation, I propose that our primary success metric should be annual reductions in pediatric brain injuries," she testified.

Dr. Winston's testimony, presented before the Subcommittee on Health of the Energy and Commerce Committee in the House of Representatives, described pediatric brain injury and recommended a public health framework to reduce the number and severity of these injuries. This involves investment in basic and translational research that informs: (1) TBI prevention strategies; (2) national models for timely and proficient acute TBI care within hours or days post- injury; and (3) recovery from TBI and reintegration of TBI victims into society.

"I was honored to testify in front of Congress and to represent the perspective of researchers and health care providers throughout The Children's Hospital of Philadelphia Healthcare Network and Research Institute. The majority of research in this area has focused on adult brain injury, but a focus on TBI in children is needed," Dr. Winston explains. "Although it was once believed that the immature brain is more resilient than that of an adult, recent data show that this is untrue, especially for the youngest children who have the worst outcomes."

She ended her testimony with one final thought: "The average medical cost for a child hospitalized for TBI is \$40,000. That's a lot of helmets."

Access a video of the Congressional hearing and a PDF of Dr. Winston's testimony [here](#).



Video Highlights Family's 'New Normal' After Prom Night Crash



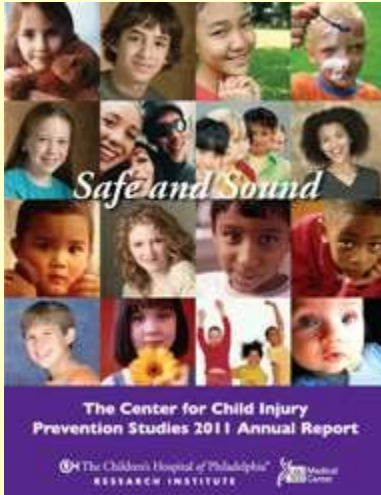
While coming home from her junior prom two years ago, Alex Mullen, now 19, was involved in a crash and suffered a [traumatic brain injury \(TBI\)](#). After a dim prognosis and two months of not speaking, moving, or even chewing on her own, she “woke up” and the family began to find their "new normal."

According to *Miles to go*, a new teen driver safety report from researchers at The Children’s Hospital of Philadelphia (CHOP), from among more than 55,000 teen drivers and their passengers seriously injured each year in 2009-10, 30 percent suffered injuries to the head, including skull fractures and traumatic brain injuries. These injuries can have a significant lifelong impact on teens and their families, as the Mullen family is experiencing. Their journey of recovery and resilience is inspiring.

[Watch this video about the Mullen family’s remarkable story.](#)
[Read *Miles to go*, a new teen driver safety report from CHOP.](#)



Join the 12th Annual Advances in Child Injury Prevention Conference



Next month, the [Center for Child Injury Prevention Studies \(CChIPS\)](#) will bring together child safety professionals from industry, government, and research organizations at the Advances in Child Injury Prevention (ACIP) Conference in Plymouth, Michigan. The Conference, which begins May 16th with a golf outing and reception and continues May 17th with presentations and discussion, provides participants with a forum to discuss the latest traffic safety and biomechanics research for children and adolescents.

"The ACIP Conference has an informal format that sets it apart from other research conferences. The group discussions after each presentation are meant to facilitate collaboration across child injury stakeholders. This process fosters new research ideas and, ultimately, the advancements needed to help prevent child injury," says Kristy Arbogast, PhD, co-director of CChIPS.

ACIP presenters include representatives from The Children's Hospital of Philadelphia, The Ohio State University, the University of Michigan Transportation Research Institute, and the National Highway Traffic Safety Administration. Topics that will be covered include concussion, injury risk in seat belt restrained occupants, child restraint system installation errors, naturalistic study of children in cars, dynamic comparison of anthropomorphic test devices (ATDs), and pediatric biomechanics. The 2012 Conference is sponsored by Honda R&D Americas Inc., Toyota Motor North America Inc, Takata Corp., Britax Child Safety Inc., DTS, and Chrysler.

Download more information on the 2012 ACIP Conference [here](#).

Registration is open until May 14th. To register for the ACIP Conference, [contact Meredith Kearney](#).

Interested in the latest CChIPS news? [Download the 2011 Annual Report, released today](#).



Keeping Kids Safe in Cars – Continuing An International Collaboration



During a March visit to Chalmers University in Goteborg, Sweden, Kristy Arbogast, PhD continued CIRP's almost four-year collaboration with Swedish industry and academic and government researchers to improve the safety of the rear seat for child occupants. Dr. Arbogast, CIRP's director of engineering, has served as co-investigator throughout the lifespan of the project.

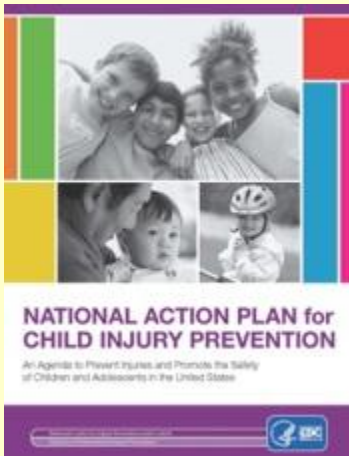
During the trip, she met with fellow scientists from Autoliv, Volvo, and Saab at SAFER, the Vehicle Safety Research Center at Chalmers University. The team reviewed analytical methods for comparing data between anthropomorphic test devices (ATDs) and real children in emergency braking and swerving maneuvers, initiated collaboration around pediatric head injury biomechanics involving helmets of youth hockey players equipped with sensors, and began planning for the next stage of research on rear seat occupant protection. "The similarities between SAFER's approach of linking industry with academia and government and CIRP's Industry/ University Cooperative Research Center, [CChIPS](#), are striking," Dr. Arbogast says. "Working together allows both groups to expand the reach of our research. It's truly an honor to work side by side with the Swedes, who have long been leaders in keeping children safe on the roads."

In keeping with CIRP's emphasis on training and mentorship, Dr. Arbogast has served as an advisor to Marianne Andersson, a PhD student from Chalmers University: "Marianne's research on a computational approach to understanding rear seat occupant protection in side impact crashes has contributed to this collaborative research effort. I was happy to be present in Sweden as she successfully defended her dissertation on this research."

For more information on CIRP's international engagement, please visit our [Decade of Action for Road Safety webpage](#).



CDC Focuses on Pediatric Injury with New Study/Resources



According to the latest report released by the Centers for Disease Control and Prevention (CDC) on April 16th, although the injury death rate among children has dropped nearly 30 percent over the last decade, injury remains the No. 1 cause of death for kids. The CDC also reports that in 2009, more than 9,000 children lost their lives as the result of unintentional injury in the United States. To help address the problem of child injury, CDC has partnered with more than 60 stakeholders, including the [Center for Injury Research and Prevention](#), to develop a *National Action Plan for Child Injury Prevention (NAP)*. The *NAP* is designed to raise awareness about child injury and its effects on our nation, highlight prevention solutions by uniting stakeholders around a common set of goals and strategies, and mobilize a national, coordinated effort to reduce child injury.

"As a researcher and medical practitioner, I see firsthand how common child injuries are and the impact they have on children and their families," says Flaura Winston, MD, PhD, founder and scientific co-director of CIRP. "We are so pleased to be able to contribute to *NAP* and join with CDC and other organizations to help mobilize the injury prevention community. Although the drop in the pediatric injury death rate over the past decade shows great progress, there is still much work to be done."

[Click here to download the NAP.](#)

To learn more about child injury prevention and CIRP's areas of emphasis, [click here](#).

Recent Center Presentations

Belwadi A. Comparative Performance of CRS Installed on the C/FMVSS 213 Bench and Vehicle Seats in Simulated Frontal Crashes - Experimental and Finite Element Based Analysis. 22nd Annual Research Poster Day. The Children's Hospital of Philadelphia. Philadelphia, PA. February 22, 2012.

Belwadi A. Hyperthermia Technology Evaluation with Pediatric Volunteer Subjects. 22nd Annual Research Poster Day. The Children's Hospital of Philadelphia. Philadelphia, PA. February 22, 2012.

Durbin DR. Teen Driver Safety: Understanding Teen Perspectives. Pediatric Emergency Medicine Conference. Orlando, FL. February 16, 2012.

Durbin DR. Updated Child Passenger Safety Recommendations from the American Academy of Pediatrics. John Templeton Conference on Pediatric Trauma. Philadelphia, PA. March 2, 2012.

Durbin DR. Let's Talk- Teen Driver Safety. Pennsylvania Chapter of the American Academy of Pediatrics Statewide Chapter Webinar and Teleconference. April 11, 2012.

Hildenbrand, AK. A Mixed-methods Assessment of Coping With Pediatric Cancer. Midwest Regional Conference in Pediatric Psychology. Milwaukee, WI. April 27, 2012.

Marsac ML. The Cellie Cancer Coping Kit: Acceptability, Feasibility, and Initial Outcomes. Midwest Regional Conference in Pediatric Psychology. Milwaukee, WI. April 26, 2012.

McGinley AD. General Pediatric and Emergency Medicine Providers' Self-Reported Practices and Attitudes Surrounding Concussion Management. 22nd Annual Research Poster Day. The Children's Hospital of Philadelphia. Philadelphia, PA. February 22, 2012.

Winston FK. A Review of Efforts to Prevent and Treat Traumatic Brain Injury. Congressional Hearing. Washington, DC. March 19, 2012.

Winston FK. Injury Science REU: Inaugural Year. National Science Foundation Engineering Education Awardees Conference. Washington, DC. March 5, 2012.

[View CIRP's extensive library of published papers here](#)