

Research in Action

A bimonthly e-newsletter from the Center for Injury Research and Prevention at The Children's Hospital of Philadelphia

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Congress Designates October 15-22 First National Teen Driver Safety Week

On September 5th, the U.S. House of Representatives unanimously passed a bill introduced by Congressman Charlie Dent (R-PA) establishing every third week in October as National Teen Driver Safety Week. An identical bill, introduced by Senator Bob Casey (D-PA), awaits approval in the U.S. Senate. Suzanne Hill, associate director for outreach and advocacy at the Center for Injury Research and Prevention, and representatives from The Children's Hospital of Philadelphia's Office of Government Affairs, were instrumental in getting the bill passed. "We hope the week will inspire dialogue within communities about the causes of and solutions to crashes, the leading cause of death for young people in the U.S.," says Hill.

Youth leaders from more than 40 states will convene in Washington, DC at a summit during National Teen Driver Safety Week to identify and promote interventions that they believe will reduce teen crash risk. Delegates will share recommendations with their communities and elected officials. The summit, which follows methods of service learning, also will provide implications for future research at the center sponsored by State Farm Insurance Companies®.

To draw attention to the issue of teen driver safety, The Children's Hospital of Philadelphia (CHOP) has created a community action curriculum called "Share the Drive". It offers a variety of ways for parents, teens, schools, and community groups to take action to help prevent teen driver crashes and injuries. Visit www.chop.edu/youngdrivers to find out more about National Teen Driver Safety Week, including ideas and materials to get something started in your community and the latest teen driver research.

Injury Center researchers and outreach staff have been traveling around the United States giving educational talks to physicians, community groups, parents, and legislators to raise awareness of teen driver safety and National Teen Driver Safety Week. They have presented at conferences, including Lifesavers, Women In Government (WIG), The American Driver and Traffic Safety Education Association (ADSTEA), Grand Rounds at CHOP, and several Parent-Teacher Association (PTA) meetings.

Giving Latinos A Boost With Child Passenger Safety

To help reduce the risk of injury to Latino children in car crashes, the Injury Research Center has partnered with State Farm®, Babies "R" Us®, and community-based injury prevention groups in five cities to launch the "Give A Boost" child passenger safety campaign. The campaign will educate parents about the effectiveness of booster seats in preventing injuries to 4 to 8-year-olds, who, according to the 2007 PCPS Fact and Trend Report, are at the greatest risk of being involved in car crashes. "The results of this research concern us because many Latino parents are skipping booster seats and placing their children directly into adult seat belts when they outgrow their car seats rather than transitioning them into belt-positioning booster seats," says Valerie Caraballo-Perez, RN, MSN, a pediatric emergency nurse and crash researcher. "Using a booster seat can mean all the difference between a parent's feelings of relief or regret following a crash."

Other integral parts of the "Give A Boost" program are:

Focus On: Matt Maltese, MS



Matt Maltese, MS, program manager for experimental biomechanics at the Center for Injury Research and Prevention, has been working to help design human pediatric crash-test dummies and associated criteria for adults for the past 15 years. A three-year veteran of the Center, Maltese spent 10 years in experimental biomechanics with the National Highway Traffic Safety Administration (NHTSA).

"Our hope is that one day we will be able to develop a crash-test dummy that is based on real child biomechanical data, not adult biomechanical data scaled down," Maltese explains. "This will then hopefully lead to restraint systems in vehicles that are designed for children to reduce morbidity on our nation's roads."

Maltese's team also is involved in several research studies measuring pediatric human volunteer responses in everyday activities. The goal of this research, he says, is that by examining how children move in low-level recreational and athletic activities, we will gain an understanding of how the parts of the body interact with each other. Then we can use computer models to extrapolate to the crash environment.

- A bilingual website with instructional videos and easy-to-understand information on choosing and installing the right car seat or booster seat for children of all ages
- Teaming up with Babies "R" Us® stores to offer 100,000 coupons for discounted car seats downloadable from the bilingual website
- Partnering with local Hispanic community groups in Dallas, Los Angeles, Miami, Phoenix, and San Antonio, including AVANCE chapters in San Antonio and Dallas; The Injury Prevention Program at Children's Medical Center Dallas; Injury Free Coalition for Kids of Miami; The Injury Free Coalition for Kids of Phoenix; The Los Angeles United School District; The Los Angeles SafeKids Coalition; Southwest Human Development; and The South Texas Injury Prevention and Research Center, to encourage use of the bilingual website and to distribute other educational materials
- Creating a "fotonovela," an adult Spanish-language illustrated story proven effective in educating the Latino population about health issues. Called "A Father's Regret," the fotonovela shares a family's story of a crash and how booster seats could have prevented injury. Download the fotonovela.

For more information on the "Give A Boost" campaign, contact us.

Center Leaders Honored for Pioneering Injury Prevention Research

Flaura Koplin-Winston, MD, PhD, founder and co-scientific director of the Center for Injury Research and Prevention, recently received the 2007 John M. Eisenberg Patient Safety and Quality Award for Individual Achievement from the National Quality Forum (NQF) and the Joint Commission. Dr. Winston was awarded this prestigious honor for her tireless efforts to prevent traffic injuries in children through applied research and outreach. Dr. Winston is the co-principal investigator for Partners for Child Passenger Safety (PCPS) and director of the Center for Child Injury Prevention Studies (CCHIPS). She also is an attending physician at CHOP and an associate professor of pediatrics at The University of Pennsylvania School of Medicine. As a leading expert on child passenger safety, Dr. Winston has provided valuable input to many national organizations, including the Institute of Medicine; the National Highway Traffic Safety Administration; the Maternal and Child Health Bureau; the National Institutes of Health; the Centers for Disease Control and Prevention; and the U.S. Product Safety Commission.

Dennis R. Durbin, MD, MSCE, co-scientific director of the Center for Injury Research and Prevention, will receive the 2007 Samuel Martin Health Evaluation Sciences Research Award from The University of Pennsylvania School of Medicine on November 14, 2007. Dr. Durbin was chosen by his peers for this honor, which cites a recipient's body of work in health sciences research. His research involving Partners for Child Passenger Safety (PCPS), along with the entire Injury Center Research Team, has helped to reduce injury and death from motor vehicle crashes. Dr. Durbin also is an emergency medicine attending physician at CHOP and an associate professor of pediatrics and epidemiology and director of the research section of emergency medicine at The University of Pennsylvania School of Medicine.

Dr. Winston and Dr. Durbin, the Center's co-scientific directors, also will be honored by the American Academy of Pediatrics (AAP) section on injury, violence, and poison with its 2007 Fellow Achievement Award on October 29th. The internationally-known experts on child passenger safety and injury prevention will receive the award at the AAP National Conference and Exhibition in San Francisco. Since establishing the PCPS study with State Farm®, their research findings have helped to improve safety design, establish regulatory procedures, and enact legislation to help dramatically reduce child traffic injury and death.

Validating Acute Stress Measures in Children

Building on prior research findings, the Child and Adolescent Response to Injury and Trauma (CARIT) program at the Center for Injury Research and Prevention is conducting a multi-center study involving 400 children to validate a measure of acute traumatic stress in children. The measure will be given in both English and Spanish to children living in Philadelphia, Miami, and Los Angeles who have experienced a traumatic event,

PCPS Releases 2007 Fact & Trend Report

Partners for Child Passenger Safety (PCPS), a Center research initiative funded by State Farm® and the world's largest study of children in car crashes, released its 2007 Fact and Trend Report on September 24th. For the first time, PCPS has been able to include crash-related information specific to Latino children. According to the report among Latino children, those ages 4 to 8 are the most likely to be injured in a crash. They also are the least likely to be properly restrained for their age and size. About 71 percent of 5-year-olds used a car seat or booster seat; but by age 6, that number was reduced by half. By age 8, only 11.5 percent of Latino children were using a booster seat. Motor vehicle crashes are the number one cause of death and acquired disability for Latino children in the U.S.

Grant Awarded

The Center for Pediatric Traumatic Stress (CPTS), co-directed by Nancy Kassam-Adams, associate director of behavioral research for the Center for Injury Research and Prevention, is conducting a four-year project (Sept. 2007 to Sept. 2011) funded by the Substance Abuse and Mental Health Services Administration (SAMHSA) as a Category II (Treatment and Service Adaptation) Center in the National Child Traumatic Stress Network. The project primarily focuses on training health care providers about pediatric traumatic stress (PTS) from medical events. This Center's work complements and builds on injury center research and outreach regarding injury and traumatic stress. CPTS was founded in 2002 at CHOP as a multidisciplinary treatment development center within the National Child Traumatic Stress Network.

Preventing Violence

Spearheaded by Joel A. Fein, MD, MPH, director and principal investigator, the Philadelphia Collaborative Violence Prevention Center (PCVPC) brings together academic institutions and community-based organizations to conduct violence prevention. Through a cooperative agreement with the Centers for Disease Control & Prevention (CDC), CHOP, Temple University, Drexel University, and the

such as injury, fire, or natural disaster.

CIRP Reaches Out to the World

A new study examining booster seat use in China, to be conducted by researchers from the Center for Child Injury Prevention Studies (CChIPS), will begin in Beijing later this fall. To be carried out by researchers from the Center for Injury Research and Prevention, The Monash University Accident Research Centre (MUARC), and the Chinese Centers for Disease Control, the study will investigate parents' attitudes and beliefs about booster seats (child restraints) and the optimum way to promote child passenger safety in China. CChIPS is a consortium of companies and federal agencies working with university faculty and students to conduct industrially relevant research in the field of pediatric injury prevention. Funded by the National Science Foundation (NSF) and memberships from its industry advisory board (IAB), CChIPS is currently conducting seven other studies, all involving pediatric traffic injury prevention.

Nancy Kassam-Adams, PhD, associate director for behavioral research at the Center for Injury Research and Prevention and co-director of the Center for Pediatric Traumatic Stress (CPTS) at CHOP, recently traveled to Singapore to train psychosocial workers at the KK Women and Children's Hospital on how to use her team's tool kit to identify children and parents at risk of developing medical pediatric traumatic stress (PTS). One of the hospital's members, Li Jen Tan, is now a visiting researcher here at CHOP's injury research center. Kassam-Adams' cutting-edge research focuses on how children and parents deal with traumatic medical events, such as injury or other emergencies, and how healthcare providers can help families cope with these events.

Kristy Arbogast, PhD, associate director of field engineering for the Center of Injury Research and Prevention and research assistant professor in the division of emergency medicine at the University of Pennsylvania School of Medicine, presented her findings on pediatric biomechanics and child passenger safety to the Japanese Society of Automotive Engineers in May. Arbogast's research has been widely published and primarily focuses on determining the biomechanical tolerance to injuries for children across the developmental spectrum. Armed with this data, she is working with the injury center team to develop effective tools to study child injury and interventions to prevent or reduce the severity of injury from motor vehicle crashes.

Building A Better Dummy

The biomechanical engineers at the Center for Injury Research and Prevention are performing ongoing research to measure how children respond to the forces of a crash and to estimate their bodies' tolerance to various types of injury. The team uses field investigation, computational engineering, and lab biomechanics in their studies. Led by Kristy Arbogast, PhD, associate director of field engineering, the group plans to use its future data to help the auto industry create an improved pediatric crash-test dummy. Although the pediatric crash-test dummy is the best tool auto manufacturers have to estimate whether their vehicle and child safety seat designs will protect children, "the first designs were scaled down from adult dummies," says Arbogast. "But we know kids are not just smaller than adults; they're put together differently."

Working with faculty and students at Rowan University's Mechanical Engineering and Exercise Science departments, Injury Center engineers are using a bumper-car ride and another seated simulation with youth volunteers to measure how different segments of the body move at various levels of velocity and acceleration. The movement is being tracked by external sensors on participants' heads, necks, and spines. Researchers also are visiting crash sites to better understand how children receive abdominal injuries. These findings will help the team develop insights into a smarter pediatric crash-test dummy and also help educate parents about the proper use of restraints based on their children's size and age.

Beyond Physical Injury

Injury center researchers are working with injured children and their families in developing a state-of-the-art interactive website to help prevent traumatic stress after an injury. To be called www.aftertheinjury.org, the educational site is currently being tested and plans to go live sometime next year. Created by Flaura Koplin Winston, MD, PhD, founder and co-scientific director of the Center for Injury Research and Prevention, and Nancy Kassam-Adams, PhD, associate director of Behavioral Research for the Injury

University of Pennsylvania, PCVPC has joined forces with the Philadelphia Area Research Community Coalition (PARCC). They perform Community Based Participatory Research (CBPR) to reduce the frequency and impact of youth violence in West and Southwest Philadelphia. PCVPC's aim is to enhance the capacity for community members and community-based organizations to engage in youth violence prevention efforts. PCVPC partners are committed to not only determining which interventions are most effective, but also to ensuring that these programs can be sustained in local communities. For more information on PCVPC, please contact Ayana Bradshaw, MPH, at 267-426-2255 or pcvpc@email.chop.edu.

Support Our Center

The dedicated doctors, researchers, and outreach professionals at the Center for Injury Research and Prevention at CHOP are fighting to save the lives of children of all ages. But we need your help. To make an on-line donation, please visit The Children's Hospital of Philadelphia Foundation Donation Page and select "Center for Injury Research and Prevention" in the drop-down menu. You also may telephone the CHOP Foundation at 267-426-6500. For more information on our research and programs, please visit www.chop.edu/injury.

Research Sponsors Wanted

Our center is performing cutting-edge research on injury prevention in children. Doctors and researchers at the Center for Injury Research and Prevention partner with industry and academia to determine ways to prevent injuries and to effectively cope when injuries do occur. If you are interested in sponsoring our research, please call Karen Matthews, the center's administrative director, at 215-590-3118.

Resources for Educators

Free to use for non-profit education purposes

New Collection of Child Passenger Safety Illustrations
Partners for Child Passenger Safety

Center and the co-director of the Center for Pediatric Traumatic Stress (PTS), the website development is funded by a three-year Targeted Issues grant from the Emergency Medical Services for Children (EMSC) Program.

Center Engineer Receives Leadership Award

Jessica Steps Jermakian, DSc, field engineering project manager for the Center for Injury Research and Prevention, was recently chosen to attend the annual Eno Transportation Foundation's Leadership Development Conference. An active member of Women's Transportation Seminar (WTS), Jermakian spent a week in Washington, DC at the conference honing her skills to help translate her group's research into effective policy at the national and international level. She also met key transportation safety policymakers, including Norman Mineta, former U.S. Secretary of Transportation, from whom she received her program certificate.

Recent Publications and Presentations from the Injury Center

- Maltese MR, Locey CM, Jermakian JS, Nance MN, Arbogast KB (2007). Injury Causation Scenarios in Belt-Restrained Nearside Child Occupants. *Stapp Car Crash Journal*, Vol. 51 (October).
- Senserrick TM, Kallan MJ, Winston FK. Child Passenger Injury Risk in Sibling Versus Non-Sibling Teen Driver Crashes: A US Study. *Injury Prevention*. June 2007; 13:207-210.
- P. Jain, Y. Ghati, R. Menon. Feasibility Study of SIMon in Predicting Head Injuries in Children. External Website. Proceedings Digital Human Modeling for Design and Engineering Conference, Seattle, Washington, 2007-01-2483, June 2007.
- R. Menon, Y. Ghati, P. Jain. MADYMO Simulation Study to Optimize the Seating Angles and Belt Positioning of High Back Booster Seats. 20th International Technical Conference on the Enhanced Safety of Vehicles (ESV), Lyon, France, June 2007.
- Winston FK, Erkoboni D, Xie D. Identifying Interventions that Promote Belt-Positioning Booster Seat Use for Parents With Low Educational Attainment. *J Trauma*. 2007 Sep; 63 (3 Suppl): S29-38.
- Senserrick TM, Brown T, Marshall D, Quistberg DA, Dow B, Winston FK. Risky Driving By Recently Licensed Teens: Self-reports and Simulated Performance. Paper for the 4th International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Stevenson, Washington, July 9-12, 2007.
- Senserrick TM, Brown T, Quistberg DA, Marshall D, Ahmad O, and Winston FK. Validation of Simulated Assessment of Teen Driver Speed Management On Rural Roads. Paper submitted for review to 51st Annual Scientific Conference of the Association for the Advancement of Automotive Medicine (AAAM), Melbourne, Australia, October 14-18, 2007.

(PCPS) recently developed a series of 37 illustrations for educational use. These clear and concise drawings are perfect for brochures, slides, and handouts and are available with captions in both English and Spanish.

The Center for Injury Research and Prevention Family of Websites

- The Center for Injury Research and Prevention (www.chop.edu/injury)
- Partners for Child Passenger Safety -English language (www.chop.edu/carseat)
- Partners for Child Passenger Safety- Spanish language (www.chop.edu/asientos_infantiles)
- Keeping Young Drivers Safe (www.chop.edu/youngdrivers)