



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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Partnering With Ford Motor Co. to Save Children's Lives

Bioengineers at the Center for Injury Research and Prevention are working with Ford Motor Co. in developing a simulated child abdomen that fits into the standard crash test dummy designed for the average 6-year-old. For years researchers have known that the abdomen is the second most commonly injured body part, after the head, in seat-belted children. With this new insert, safety engineers at vehicle manufacturing companies can now precisely measure the risk of abdominal injury in children ages 4 to 8. Researchers from the University of Virginia, Wayne State University, and Takata Corp., the Japanese auto restraint manufacturer, also participated in the three-year research project. Ford will share the prototype at a Society of Automotive Engineers committee meeting this month, the first step in making it available to the entire auto industry. Kristy Arbogast, PhD, associate director of field engineering for the Center, was featured in a front-page article that appeared in the *Philadelphia Inquirer* for her team's work on the project. (Read the article.)

Promoting Occupant Protection at the Auto Show

Computational engineers from the Center were on hand at The Philadelphia Auto Show in early February to help visitors safely experience driving under various conditions using a vehicle and simulator donated to the Center by the Automobile Dealers Association of Greater Philadelphia's CARING for Kids Foundation. This generous \$50,000 donation will allow CIRP researchers to study teen driving behavior under varying conditions, including inclement weather, sharp turns, and driving while intoxicated. The findings from this research will help develop protocols to validate this portable simulator technology for potential use in assessing driving skills, teaching driving skills, and evaluating the effectiveness of driver training. On Kids' Day, the last day of the show, certified car safety technicians and educators from the Center showed parents how to correctly position their children in various

child restraints and provided educational handouts on child passenger safety rules and regulations.

Medicaid Paper Released

Findings from a unique study conducted by Injury Center researchers were published in the January 16, 2008 issue of the journal *Ambulatory Pediatrics*. The study shows that distributing car safety seats among economically disadvantaged children could be as cost-effective as long-established federal vaccination programs. The paper is significant because it also offers insights for state and national lawmakers involved in setting future healthcare policy, particularly for those interested in exploring programs with a greater focus on preventive care for children. UPI, ABC.com, and various policy newsletters covered the study. Limited pilot testing of the proposed Child Restraint Systems (CRS) program at the state or community level is the recommended next step in evaluating its "real world" applicability, effectiveness, and cost savings. (Read the press release)

Center Receives Grant for Pediatric Traumatic Stress Research

On February 1, Flaura Winston, MD, PhD, founder and co-scientific director of the Center for Injury Research and Prevention, accepted a \$50,000 grant from The Verizon Foundation, the philanthropic arm of Verizon Communications Inc. The grant money will be used to help prevent traumatic stress in children after an injury. Researchers at the Center are working with injured children and their families to develop effective screening tools and interventions that can be integrated into hospital trauma care. They are creating a state-of-the-art interactive Web site that will provide parents with easy access to credible information, tips, and practical tools to help support their injured children's emotional recovery. In prospective studies of children's and parents' reactions to traffic crashes and other medical emergencies, Center researchers have found that most families experience at least a few acute stress disorder (ASD) symptoms within the first month after injury. Six months later, 1 in 6 of them still has clinically significant symptoms. (Read the press release)



40 Days of Non-Violence

On January 14, the Philadelphia Collaborative Violence Prevention Center (PCVPC) hosted a press conference at The Children's Hospital of Philadelphia on behalf of Congressman Chaka Fattah (D-PA), former Philadelphia Mayor Rev. Dr. W. Wilson Goode, Jr., and the Corp. for National Community Service to launch the "40 Days Of Non-Violence: Building the Beloved Community" initiative. The initiative honors Dr. Martin Luther King Jr.'s vision of a "beloved community" of peace and brotherhood, marking the 40th year since his assassination. The press conference highlighted the work of medical, vocational, mentoring, research, preventive, and activity-based programs designed to end youth violence in Philadelphia. Through this 40-day program, 40 or more of Philadelphia's most effective anti-violence initiatives will take center stage, and citizens will be encouraged to volunteer to assist with the ongoing effort to curb youth violence in the city. Using the expertise of its partners, PCVPC created "40 Tips for 40 Days" evidence-based ideas for preventing violence, as part of the initiative.

Hewitt Named to CPS Board

Focus On: Rajiv A. Menon, PhD



In his 10 years of service with the Center for Injury Research and Prevention, Rajiv Menon, PhD has worn many hats, including chief administrator and computational engineering core leader. But his mission of helping researchers and auto manufacturers develop better cars for increased occupant safety has never wavered.

As the Center's Associate Director of Computational Engineering, Menon and his team create multidimensional computer models that replicate children's kinematics in crash simulations. Using real world results from field investigation as well as the injury biomechanics field, the models promote a better understanding of injury mechanisms and increased new safety technology testing. "Our findings on the mechanisms of injury and child kinematics also help Center researchers quantify both the physical impact of trauma for children and the effects of safety and prevention measures," says Menon.

Now his passion has come full circle with a new project that will move his group's focus "into the future." Using computational models of existing child restraint products, Menon and his team plan to show child restraint manufacturers that their products can be adapted to work safely in both the European and American market—where safety standards vary. "Kids are kids," explains Menon. "Although Europe and the U.S. may have different safety regulations, one design can be used safely on both continents."

Menon is excited with this prospect because more of these manufacturers' budgets can hopefully then be spent on researching how to create safer child restraints instead of on manufacturing and marketing two different versions of products for both markets.

A widely-published principal investigator of child safety computational simulation research, Menon earned his PhD in Mechanical Engineering from Wichita State University. Besides his day-to-day duties of managing engineering research projects, he also directs the Center's Student Education and Training program. Serving as mentor to Drexel University students who gain "real world" experience in a cooperative learning environment, Menon helps them develop their research and project management skills. With his guidance and support, several of these students have gone on to join the Center or doctoral programs around the world. "It's very rewarding to see these students develop," he says. "I like interacting with them and seeing them grow as members of the CIRP team."

Resources for Educators

Free to use for non-profit education purposes

Collection of Child Passenger Safety Illustrations Partners for Child Passenger Safety (PCPS) recently developed a series of 37 illustrations for educational use. These clear and concise drawings are perfect for

Tracey Hewitt, MS, CHES, coordinator for Outreach and Advocacy at the Injury Center, recently joined the National Child Passenger Safety Board. Hewitt was elected by her peers to help the Board provide program direction and technical guidance to states, communities and organizations to maintain a credible, standardized child passenger training and certification program.

In the News

Kristy Arbogast, PhD, the Center's associate director of field engineering, shared her views on side-impact improvements to child restraints in an article that appeared in the *Wall Street Journal* on December 13, 2007. (Read the article)

Fact Sheets Now Available

The Center for Injury Research and Prevention recently updated its Fact Sheets. These 10 four-color sheets give a detailed overview of the Center, its people, and each research core.

New Web site

The Philadelphia Collaborative Violence Prevention Center (PCVPC) recently launched its Web site. Part of the Center for Injury Research and Prevention, the PCVPC performs community-based participatory research to reduce the frequency and impact of youth violence in Philadelphia.

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.

Recent Publications from the Injury Center

- Goldstein J, Winston FK, Kallan M, Branas C, and Schwartz JS. Comparative Cost-Effectiveness of a Medicaid-Based Child Restraint System Disbursement and Education Program and the Vaccines for Children Program. *Ambulatory Pediatrics*. Jan. 16, 2008.
- Hutchens L, Senserrick T, Jamieson P, Romer D, and Winston FK. Teen Driver Crash Risk and Associations With Smoking and Drowsy Driving. *Accident Analysis and Prevention*. Feb. 2008.

brochures, slides, and handouts and are available with captions in both English and Spanish.

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.

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)