IN THE SAFETY ZONE

CChIPS | Center for Child Injury Prevention Studies

The Center for Child Injury Prevention Studies (**CChIPS**) is a National Science Foundation (**NSF**) funded Industry/University Cooperative Research Center (**I/UCRC**). Its dual research sites at The Children's Hospital of Philadelphia (**CHOP**) and The Ohio State University (**OSU**) focus on child injury prevention.

EH The Children's Hospital *of* Philadelphia®

O The Ohio State University

2005

CChIPS is founded at CHOP through NSF funding.

Five research projects are funded focusing on child occupant protection.

The Industry Advisory Board (IAB) is formed with six founding members representing the insurance, automotive, and restraint industries.



Five research areas are defined:

(1) injury biomechanics, mechanisms, and tolerance;(2) technological solutions;

(3) human behavior related to safety technology;
(4) safety promotion/education;

 (5) evaluation of safety devices or behavior modification programs

Researchers collaborate with founding CChIPS IAB member TK Holdings Inc., Rowan University, and University of Virginia to develop a low-speed human volunteer sled to test pediatric subjects.



Industry Event: The need for real world evidence of best practice recommendations for child restraints prompt CHOP and IAB founding member State Farm Mutual Automobile Insurance Company to continue to collect data on children in crashes through the Partners for Child Passenger Safety (PCPS) surveillance system. When data collection concludes in 2007, data is obtained on 875,000 children involved in 600,000 crashes. (1997-2007)

CChIPS Research: Multiple groundbreaking studies guide new vehicle and restraint designs, laws, regulations, and programs around child passenger safety. (\leftarrow 2007 \rightarrow)

Industry Event: National Highway Traffic Safety Administration (NHTSA) conducts research and development on a new FMVSS 213 bench. (2008)

CChIPS Research: A three year line of research assesses the ability of the regulatory sled test to mimic actual vehicle crashes. (2011 \rightarrow)

An External Investigator policy is created, allowing qualified researchers from other institutions to pursue essential research through CChIPS. This policy introduces OSU to CChIPS.

The Young Driver Research Initiative (YDRI) is established as a research and outreach alliance of CHOP and State Farm Mutual Automobile Insurance Company.

CChIPS is awarded Phase II NSF I/UCRC funding for its next five years of operation, and OSU is established as CChIPS' second academic site.

A driving simulator is purchased at CHOP, expanding the capability to conduct CChIPS research in behavioral science and human factors.

CHOP is awarded an Injury Science Research Experiences for Undergraduates (REU) site from NSF.

The IAB grows to 12 member companies.

Industry Event: NHTSA conducts the National Child Restraint Use Special Study, observing the use of child restraint systems (CRS) and booster seats for child passengers up to 8 years old. (2011)

CChIPS Research: A line of research analyzes various CRS misuse conditions and potential implications for injury. (2011 \rightarrow)

CChIPS Research: CChIPS research investigates the potential benefit of extending rear-facing recommendations to children over age 1. (2006 —>) *Industry Event:* Increasing motorization in global fleets leads to a dramatic increase in child injuries. (2009)

CChIPS Research: In a collaboration with the Beijing CDC and Monash University, researchers study a campaign aimed at improving booster seat use in China. (2010)



Industry Event: 49 U.S. child vehicular heat stroke deaths are reported – 1.5 times more than the previous year and the most in over a decade. (2010)

2010

CChIPS Research: CChIPS produces a NHTSA-funded report on the evaluation of technologies designed to prevent children from being left behind in hot cars. (2012)

CChIPS Research: Investigators study injury mechanisms for children involved in side impact crashes. (2006 \rightarrow)

CChIPS Research: An analysis of injury causation scenarios for rear-seated, CRS-restrained children in side impact crashes is conducted. (2008 \rightarrow)

Industry Event: Air bag innovations spur further refinement of side impact air bags into the rear seat of motor vehicles. (— 2011—)

CChIPS Research: CChIPS studies side curtain air bags' interaction with CRS-restrained child occupants. (2013 →)

Industry Event: The American Academy of Pediatrics updates its best practice recommendation to keep toddlers in rear-facing CRS until at least age 2. (2011)

CChIPS Research: The comfort levels of children near 2 years old in rear-facing vs. forward-facing CRS are studied. (2012 —)

Blog

The launch of the *Research in Action* blog allows CChIPS to share news, events, and commentary with stakeholders, research peers, health policymakers, and the media.

CChIPS Research: CChIPS' analyses

enumerate most common serious crash scenarios and establish linkage between electronic health records and state motor vehicle records for teen drivers. (2013 —)

Industry Event: The National Safety Council releases a new report that includes a decal requirement in its Graduated Driver Licensing framework. (2014)

Industry Event: NHTSA proposes an update to FMVSS 213 to add a side impact protection test for CRS and a new crash test dummy, the Q3s, for use in the test. (2014)

CChIPS Research: CChIPS verifies and informs improvements in the biofidelity of child crash test dummies. (< 2014 \rightarrow)

Industry Event: 48 states require CRS and booster seat use to at least age 6; 17 states have widely varying rear seat requirements for children. (2012)

CChIPS Research: In a collaboration with Monash University, innovative data collection and analysis methods are used to observe and quantify the naturalistic positions of child occupants in cars. (2012 \rightarrow)

CChIPS Research: Using CRS digitization tools, researchers respond to Center-identified common need for better vehicle-to-CRS fitment. (2012 \rightarrow)

Industry Event: Advanced Automatic Crash Notification (AACN) systems become more prevalent in guiding trauma triage. (2013)

CChIPS Research: CChIPS delineates AACN algorithms for predicting child injury severity. (2013 →)

OSU's Injury Biomechanics Symposium celebrates its 10th year of student development in the field.

CChIPS expands its digital presence by revamping its main website, and OSU launches its consumer-focused child passenger safety site.



CChIPS is awarded Phase III of its NSF I/UCRC grant, providing continued funding through 2020.

The IAB is comprised of 22 members including the largest US auto insurer, the top 5 auto manufacturers, 2 of the top 3 juvenile product manufacturers, the only ATD manufacturer, the US auto safety regulatory agency, and the US national aviation authority.





To learn more about the over 100 projects in CChIPS' research portfolio, please see our website! cchips.research.chop.edu