

Looking Back on Rear-Facing Car Seats: Are We Making Progress?

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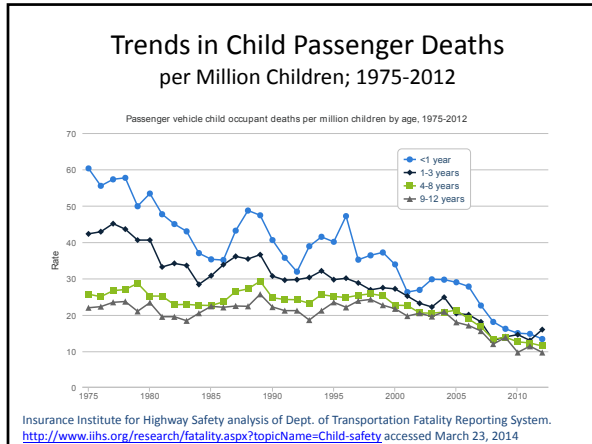
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Outline

- Why child passenger safety matters
- How guidelines have changed
 - Focus on the switch from rear-facing to forward-facing
- When do parents transition children from rear-facing to forward-facing car seats
- What is the relationship between child age, size, and rear-facing weight limits for U.S. car seats





Injuries Remain a Problem

For every **1** child that dies there are...

- 25** hospitalizations
- 925** treated in ER
- Many** more treated in doctors' offices

In 2005, injuries that resulted in death, hospitalization or an ER visit cost nearly \$11.5 billion in medical expenses.

SOURCES: Web-based Injury Statistics Query and Reporting System (NISQARS), CDC, 2009; National Health Interview Survey, 2009 data release, CDC; National Center for Health Statistics.

CRASH CASE

Changing Body Proportions



16 Month Old



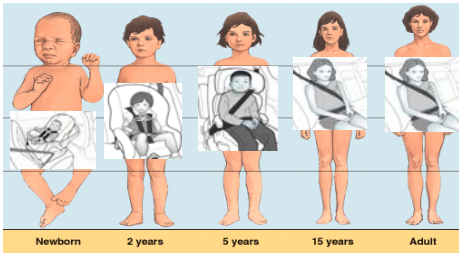
6 Year Old



Teen

<http://www.boneclones.com/KO-193-P.htm>

Passenger Safety Needs and Child Development



Newborn

2 years

5 years

15 years

Adult

5 pounds	20 pounds	30 pounds	40 pounds	50 pounds	60 pounds	70 pounds	80 pounds
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Retired Guidelines – American Academy of Pediatrics 2002

Rear-Facing Car Seat to 1 year and 20 pounds

Forward-Facing Car Seat to 4 years and 40 pounds

Booster Seat to 8 years and 80 pounds

2002 AAP Guidelines – Selecting and using the most appropriate car safety seats for growing children.

5 pounds	20 pounds	30 pounds	40 pounds	50 pounds	60 pounds	70 pounds	80 pounds
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Updated Guidelines – American Academy of Pediatrics 2011

Infant-only or convertible child safety seat used rear-facing until 2 years of age or until they reach the highest weight or height limit allowed by the seat manufacturer

The safest place in a vehicle for all children is in the rear seat.

Convertible or combination child safety seat used forward-facing for as long as possible [children 2 years of age and older (or those less than 2 years old who have outgrown their seat's rear-facing weight or height limit)]

Booster seat for all children whose weight or height is above the forward-facing limit for their child safety seat until the vehicle lap and shoulder belt fits properly

2011 AAP Guidelines for Child Passenger Safety – Policy Statement originally published online March 21, 2011

Images for child safety seats used with permission from the Children's Hospital of Philadelphia Center for Injury Research and Prevention

Looking Back on Rear-Facing Car Seats: Surveying US Parents in 2011 and 2013

Michelle L. Macy, MD, MS; Amy T. Butchart, MPH; Dianne C. Singer, MPH; Achamyeloh Gebremariam, MS; Sarah J. Clark, MPH; Matthew M. Davis, MD, MAPP

– Published online: January 6, 2015

Objectives

- To determine the age at which US parents first turn their child's car seat to face forward
- To calculate changes between 2011 and 2013
- To assess which sources of information parents use for that decision

Methods



- 2 separate cross-sectional web-based surveys
- Nationally representative panel of US parents
- Parents of children ≤ 4 received questions

- Survey weighted analyses
 - Descriptive and chi-square statistics

<http://mottnpch.org/>

Methods - Timeline



Variables

- Parent report of age (in categories) that child’s car seat first faced forward

- Sources of information to make decision
- Demographic characteristics
 - Parent sex, age, race, education, family income
- Family lives in a state where the law in 2011 and 2013 mentioned car seat direction
 - AL, AK, CO, CT, IA, LA, NM, OR, SC, TN, VT, WI

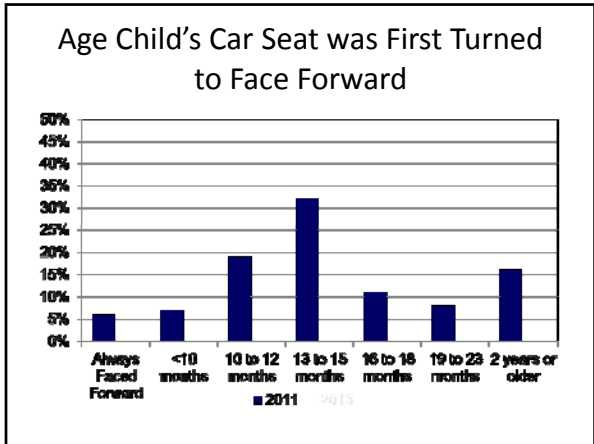
Results

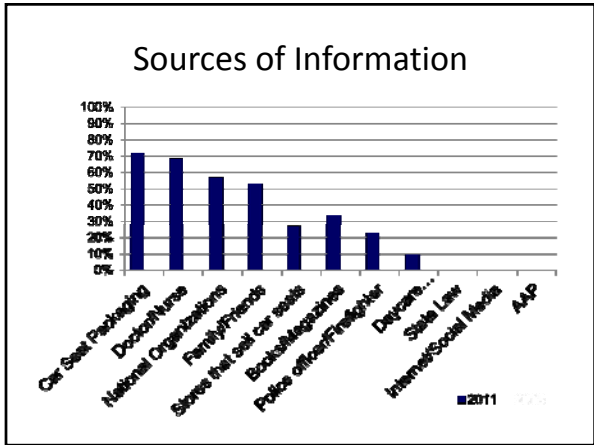
- 526 parent respondents in 2011

- 541 parent respondents in 2013
 - More than 90% of parents provided the age that their child first rode in a forward-facing car seat

Demographic Characteristics

	2011 N = 495	2013 N = 521
Male Parent	45%	50%
Parent <30 years old	39%	38%
Non-Hispanic White	57%	65%
Non-Hispanic Black	13%	9%
Hispanic	23%	18%
Non-Hispanic Other	7%	7%
High school or less	38%	33%
Family income <\$30,000	27%	20%
Lives in state where law mentions car seat direction	15%	11%





Discussion

- Most parents reported turning their child's car seat to face forward around 1 year
- Car seat packaging information and clinicians were leading sources of information
- No consistent relationships between turning child's car seat to face forward at 1 year and demographics or sources of information

Limitations

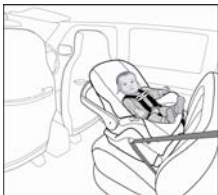
- Social desirability bias
- Recall bias
- Fixed-response list of information sources
- Response bias

Conclusions

- More needs to be done to encourage parents to prolong rear-facing car seat use
- Discussions should begin early in the first year
- A number of information sources influence a parent's decision to turn their child's car seat

Rear-Facing Car Seats

Infant-Only/Infant Carrier



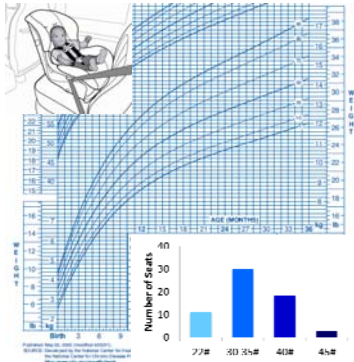
Convertible



GENERAL REAR-FACING CAR SEAT FIT TIPS

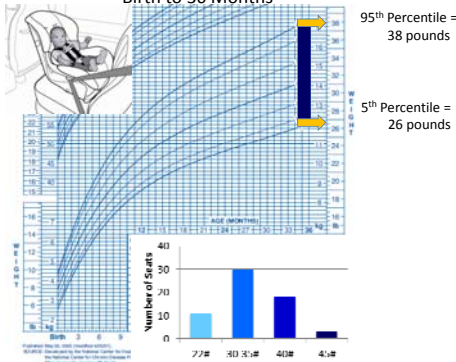
- Harness strap fed through slots that are **AT OR BELOW** the top of the child's shoulder
- Child's head should be at least 1 inch below the top of the car seat shell
- Child must be under the rear-facing maximum weight limit

Rear-Facing Weight Limits of Car Seats on the U.S. Market in 2012



Growth Chart – Weight for Age

Birth to 36 Months



Take-Away Message

- Parents turn children to face forward earlier than recommended, often around 1 year
- Even heavy 3 year olds can be rear-facing by weight limits of some seats on the U.S. market
- More can be done to prolong rear-facing car seat use in the U.S.
