

Traffic Safety Facts

Research Note

Child Restraint Use in 2007 – Demographic Results

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Hispanic children under 13 years old have lower restraint use rates (use of child safety seats, booster seats, and seat belts) than non-Hispanic children. This result is from the National Survey of the Use of Booster Seats (NSUBS), the only probability-based nationwide child restraint survey that observes restraint use and collects race and ethnicity. The NSUBS is conducted by the National Center for Statistics and Analysis (NCSA) of the National Highway Traffic Safety Administration.

nic groups, and lower among African-American non-Hispanic children.

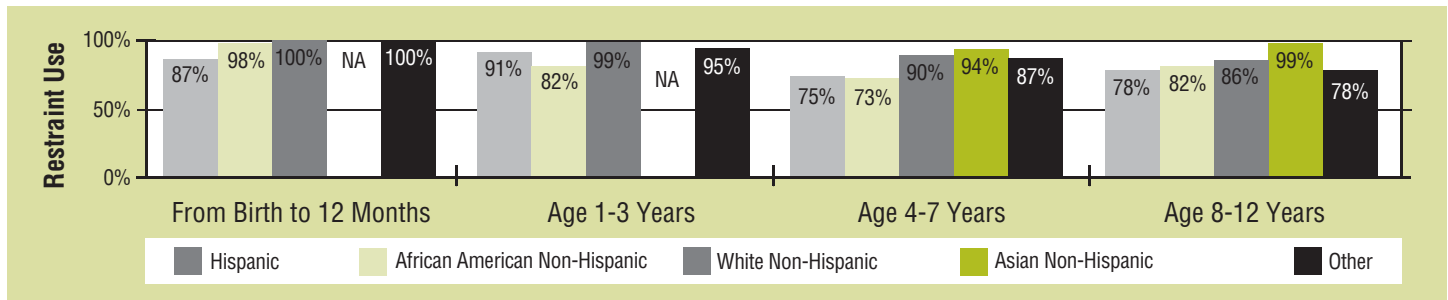
Other findings from the 2007 survey include the following:

- Although the pattern of use rates by race and ethnicity varied somewhat among the survey's age groups (from birth to 12 months, 1-3 years, 4-7 years, and 8-12 years), use rates tended to be higher among White and Asian non-Hispanic children, compared to other racial and eth-

- The survey found statistically similar use rates among boys and girls, except in the age range of 1 to 3 years, in which boys were restrained at higher rates (98%) than girls (93%).

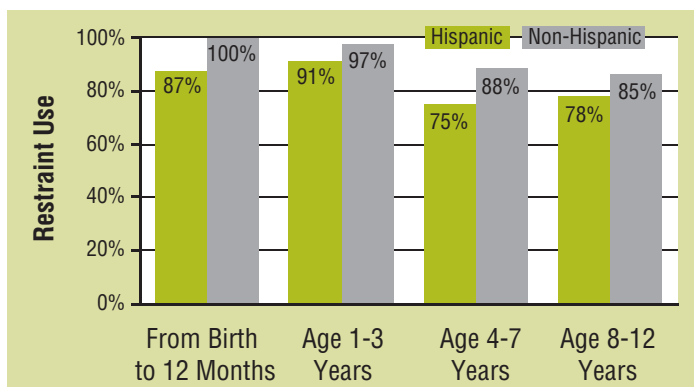
The survey found some decrease in restraint use from 2006 to 2007. For instance, the survey found a drop in restraint use among Hispanic 4- to 7-year-olds from 92 percent in 2006 to 75 percent in 2007. However, this could be due in part to improved training (in this second year of the survey) on what constitutes "use" for front-facing seats and booster seats, and might not reflect actual decrease in restraint use in this age group. See the Section "A Change to the 2007 Survey that Could Impact Results" on page 7 for more information.

Child Restraint Use by Age and Race / Ethnicity In 2007



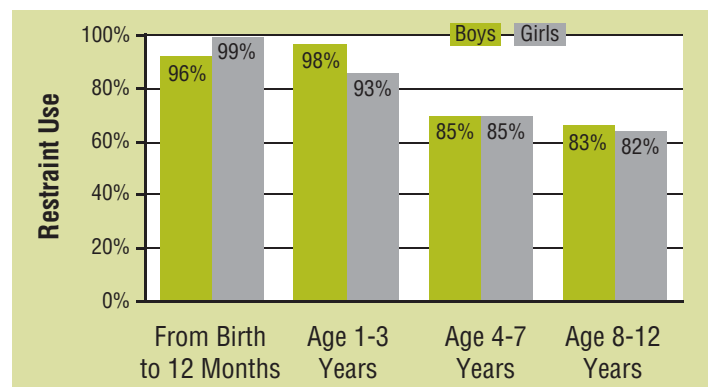
NA: Data not sufficient to produce a reliable estimate Source: National Survey of the Use of Booster Seats, NCSA / NHTSA, 2007

Child Restraint Use by Age and Hispanic Origin In 2007



Source: National Survey of the Use of Booster Seats, NCSA / NHTSA, 2007

Child Restraint Use by Age and Gender In 2007



Source: National Survey of the Use of Booster Seats, NCSA / NHTSA, 2007

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Restraint Use Among Children From Birth to 12 Months

Subgroup of Children From Birth to 12 Months ^{1,4}	2006		2007		2006-2007 Change	
	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Change in Percentage Points	Confidence in a Change in Use ⁵
All Children From Birth to 12 Months	99%		98%		-1	52%
Children Who Are						
Boys	98%	63%	96%	93%	-2	65%
Girls	99%	63%	99%	93%	0	40%
Children Who Are Reported to Be ⁴						
White Non-Hispanic	99%	54%	100%	96%	1	69%
Black or African-American Non-Hispanic	NA	NA	98%	63%	NA	NA
Asian Non-Hispanic	NA	NA	NA	NA	NA	NA
Other Non-Hispanic	NA	NA	100%	98%	NA	NA
Hispanic or Latino	99%	71%	87%	94%	-12	87%
Children Reported to Be ⁴						
Hispanic or Latino	99%	71%	87%	94%	-12	87%
Neither Hispanic nor Latino	98%	71%	100%	94%	1	83%
Children Whose Height ⁴ Is Between						
0 and 36 Inches	99%	0%	98%	98%	-1	53%
37 and 53 Inches	NA	NA	NA	NA	NA	NA
54 and 56 Inches	NA	NA	NA	NA	NA	NA
57 Inches or More	NA	NA	NA	NA	NA	NA
Children Who Weigh ⁴ Between						
0 and 19 Pounds	99%	66%	99%	95%	0	60%
20 and 40 Pounds	98%	66%	94%	95%	-4	72%
41 and 60 Pounds	NA	NA	NA	NA	NA	NA
61 Pounds or More	NA	NA	NA	NA	NA	NA
Children Surveyed at a						
Gas Station	94%	98%	98%	73%	4	86%
Fast-Food Restaurant	100%	95%	99%	81%	-1	90%
Day Care Center	100%	99%	97%	78%	-3	88%
Recreation Center	NA	NA	97%	57%	NA	NA

¹ Survey data was obtained on children age 12 and younger in passenger vehicles at a nationwide probability sample of gas stations, day care centers, recreation centers, and restaurants in five fast-food chains.

² Use of child safety seats (front- or rear-facing), booster seats, and seat belts. Restraint use is observed by trained data collectors prior to or just as the vehicle comes to a stop, except in the case of observation at fast-food drive-through lanes, where restraint use is observed prior to the vehicle reaching the drive-through window.

³ The level of statistical confidence that use in the occupant group (e.g., child occupants who are boys) is higher or lower than use in the corresponding complementary occupant group (e.g., child occupants who are girls). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100.0 percent.

⁴ Race, ethnicity, height, weight, and age of children are obtained by asking an adult occupant.

⁵ The degree of statistical confidence that the 2007 use rate is different from the 2006 rate. Confidence levels that meet or exceed 90% are formatted in boldface type.

Note: Decreases in restraint use from 2006 to 2007 could be due in part to improved training in the 2007 survey. For more information see "A Change to the 2007 Survey that Could Impact Results" on Page 7.

NA: Data not sufficient to produce a reliable estimate.

Source: The National Survey of the Use of Booster Seats, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Restraint Use Among Children Age 1 – 3 Years

Subgroup of Children Age 1-3 Years ^{1,4}	2006		2007		2006-2007 Change	
	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Change in Percentage Points	Confidence in a Change in Use ⁵
All Children Age 1-3 Years	97%		96%		-1	41%
Children Who Are						
Boys	98%	90%	98%	95%	0	22%
Girls	95%	90%	93%	95%	-2	43%
Children Who Are Reported to Be ⁴						
White Non-Hispanic	99%	75%	99%	100%	0	9%
Black or African-American Non-Hispanic	89%	99%	82%	100%	-7	83%
Asian Non-Hispanic	NA	NA	NA	NA	NA	NA
Other Non-Hispanic	NA	NA	95%	55%	NA	NA
Hispanic or Latino	93%	64%	91%	97%	-2	25%
Children Reported to Be ⁴						
Hispanic or Latino	93%	64%	91%	97%	-2	25%
Neither Hispanic nor Latino	98%	64%	97%	97%	-1	56%
Children Whose Height ⁴ Is Between						
0 and 36 Inches	97%	68%	96%	71%	-1	43%
37 and 53 Inches	95%	69%	94%	72%	-1	33%
54 and 56 Inches	NA	NA	NA	NA	NA	NA
57 Inches or More	NA	NA	NA	NA	NA	NA
Children Who Weigh ⁴ Between						
0 and 19 Pounds	NA	NA	96%	56%	NA	NA
20 and 40 Pounds	97%	75%	96%	69%	-1	55%
41 and 60 Pounds	91%	76%	97%	68%	6	74%
61 Pounds or More	NA	NA	NA	NA	NA	NA
Children Surveyed at a						
Gas Station	94%	62%	91%	94%	-3	53%
Fast-Food Restaurant	95%	71%	95%	57%	0	41%
Day Care Center	97%	90%	96%	79%	-1	37%
Recreation Center	99%	94%	99%	96%	0	10%

¹ Survey data was obtained on children age 12 and younger in passenger vehicles at a nationwide probability sample of gas stations, day care centers, recreation centers, and restaurants in five fast-food chains.

² Use of child safety seats (front- or rear-facing), booster seats, and seat belts. Restraint use is observed by trained data collectors prior to or just as the vehicle comes to a stop, except in the case of observation at fast-food drive-through lanes, where restraint use is observed prior to the vehicle reaching the drive-through window.

³ The level of statistical confidence that use in the occupant group (e.g., child occupants who are boys) is higher or lower than use in the corresponding complementary occupant group (e.g., child occupants who are girls). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100.0 percent.

⁴ Race, ethnicity, height, weight, and age of children are obtained by asking an adult occupant.

⁵ The degree of statistical confidence that the 2007 use rate is different from the 2006 rate. Confidence levels that meet or exceed 90% are formatted in boldface type.

Note: Decreases in restraint use from 2006 to 2007 could be due in part to improved training in the 2007 survey. For more information see "A Change to the 2007 Survey that Could Impact Results" on Page 7.

NA: Data not sufficient to produce a reliable estimate.

Source: The National Survey of the Use of Booster Seats, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Restraint Use Among Children Age 4 – 7 Years

Subgroup of Children Age 4-7 Years ^{1,4}	2006		2007		2006-2007 Change	
	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Change in Percentage Points	Confidence in a Change in Use ⁵
All Children Age 4-7	91%		85%		-6	91%
Children Who Are						
Boys	92%	56%	85%	53%	-7	90%
Girls	91%	56%	85%	53%	-6	83%
Children Who Are Reported to Be ⁴						
White Non-Hispanic	93%	67%	90%	97%	-3	46%
Black or African-American Non-Hispanic	74%	90%	73%	100%	-1	6%
Asian Non-Hispanic	96%	67%	94%	98%	-2	16%
Other Non-Hispanic	93%	61%	87%	59%	-6	36%
Hispanic or Latino	92%	51%	75%	88%	-17	93%
Children Reported to Be ⁴						
Hispanic or Latino	92%	51%	75%	88%	-17	93%
Neither Hispanic nor Latino	91%	51%	88%	88%	-3	51%
Children Whose Height ⁴ Is Between						
0 and 36 Inches	87%	87%	85%	50%	-2	22%
37 and 53 Inches	92%	88%	85%	68%	-7	96%
54 and 56 Inches	85%	67%	85%	52%	0	0%
57 Inches or More	93%	59%	96%	99%	3	35%
Children Who Weigh ⁴ Between						
0 and 19 Pounds	NA	NA	NA	NA	NA	NA
20 and 40 Pounds	94%	78%	84%	63%	-10	95%
41 and 60 Pounds	90%	70%	85%	67%	-5	79%
61 Pounds or More	89%	70%	83%	62%	-6	62%
Children Surveyed at a						
Gas Station	83%	92%	83%	70%	0	16%
Fast-Food Restaurant	91%	58%	87%	66%	-4	61%
Day Care Center	93%	93%	84%	61%	-9	86%
Recreation Center	92%	74%	89%	85%	-3	83%

¹ Survey data was obtained on children age 12 and younger in passenger vehicles at a nationwide probability sample of gas stations, day care centers, recreation centers, and restaurants in five fast-food chains.

² Use of child safety seats (front- or rear-facing), booster seats, and seat belts. Restraint use is observed by trained data collectors prior to or just as the vehicle comes to a stop, except in the case of observation at fast-food drive-through lanes, where restraint use is observed prior to the vehicle reaching the drive-through window.

³ The level of statistical confidence that use in the occupant group (e.g., child occupants who are boys) is higher or lower than use in the corresponding complementary occupant group (e.g., child occupants who are girls). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100.0 percent.

⁴ Race, ethnicity, height, weight, and age of children are obtained by asking an adult occupant.

⁵ The degree of statistical confidence that the 2007 use rate is different from the 2006 rate. Confidence levels that meet or exceed 90% are formatted in boldface type.

Note: Decreases in restraint use from 2006 to 2007 could be due in part to improved training in the 2007 survey. For more information see "A Change to the 2007 Survey that Could Impact Results" on Page 7.

NA: Data not sufficient to produce a reliable estimate.

Source: The National Survey of the Use of Booster Seats, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Restraint Use Among Children Age 8 – 12 Years

Subgroup of Children Age 8-12 Years ^{1,4}	2006		2007		2006-2007 Change	
	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Estimated Restraint Use ²	Confidence That Use Is High or Low in Group ³	Change in Percentage Points	Confidence in a Change in Use ⁵
All Children Age 8-12	84%		83%		-1	17%
Children Who Are						
Boys	82%	68%	83%	71%	1	24%
Girls	85%	68%	82%	71%	-3	50%
Children Who Are Reported to Be ⁴						
White Non-Hispanic	85%	72%	86%	88%	1	27%
Black or African-American Non-Hispanic	79%	65%	82%	56%	3	21%
Asian Non-Hispanic	65%	94%	99%	100%	34	100%
Other Non-Hispanic	NA	NA	78%	62%	NA	NA
Hispanic or Latino	84%	51%	78%	83%	-6	50%
Children Reported to Be ⁴						
Hispanic or Latino	84%	50%	78%	83%	-6	50%
Neither Hispanic nor Latino	84%	50%	85%	83%	1	24%
Children Whose Height ⁴ Is Between						
0 and 36 Inches	NA	NA	93%	93%	NA	NA
37 and 53 Inches	83%	60%	79%	94%	-4	48%
54 and 56 Inches	81%	67%	85%	70%	4	49%
57 Inches or More	86%	73%	86%	96%	0	13%
Children Who Weigh ⁴ Between						
0 and 19 Pounds	NA	NA	NA	NA	NA	NA
20 and 40 Pounds	NA	NA	44%	95%	NA	NA
41 and 60 Pounds	83%	56%	86%	86%	3	55%
61 Pounds or More	84%	52%	83%	52%	-1	19%
Children Surveyed at a						
Gas Station	81%	61%	81%	69%	0	2%
Fast-Food Restaurant	83%	54%	82%	56%	-1	5%
Day Care Center	86%	70%	83%	51%	-3	29%
Recreation Center	88%	74%	87%	88%	-1	10%

¹ Survey data was obtained on children age 12 and younger in passenger vehicles at a nationwide probability sample of gas stations, day care centers, recreation centers, and restaurants in five fast-food chains.

² Use of child safety seats (front- or rear-facing), booster seats, and seat belts. Restraint use is observed by trained data collectors prior to or just as the vehicle comes to a stop, except in the case of observation at fast-food drive-through lanes, where restraint use is observed prior to the vehicle reaching the drive-through window.

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⁴ Race, ethnicity, height, weight, and age of children are obtained by asking an adult occupant.

⁵ The degree of statistical confidence that the 2007 use rate is different from the 2006 rate. Confidence levels that meet or exceed 90% are formatted in boldface type.

Note: Decreases in restraint use from 2006 to 2007 could be due in part to improved training in the 2007 survey. For more information see "A Change to the 2007 Survey that Could Impact Results" on Page 7.

NA: Data not sufficient to produce a reliable estimate.

Source: The National Survey of the Use of Booster Seats, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Survey Methodology

The National Survey of the Use of Booster Seats obtains its data by sending trained data collectors to a probability sample of gas stations, day care centers, recreation centers, and restaurants in five national fast-food chains across the United States. The choice of these types of data collection sites stems from the necessity of observing restraint use from a close range in a slow-moving or stopped vehicle and the ability to conduct interviews with the drivers of stopped vehicles, combined with the desire to capture large numbers of children.

Data collectors approach passenger vehicles appearing to have child occupants under the age of 13, observe the restraint use of up to nine occupants in the first three rows of seats and conduct interviews to obtain the race and ethnicity of all occupants (obtained in compliance with OMB standards for such data) and the heights, weights, and ages of child occupants appearing to be under age 13. (The approximate ages of other occupants (expressed as an age range, such as 16-24 years), and the genders of all occupants, are subjectively assessed by the data collectors.)

In order to capture restraint usage before children unfasten the restraints, restraint use is observed by the data collectors prior to or just as the vehicle comes to a stop, except in the case of observation at fast-food drive-through lanes, where restraint use is observed prior to the vehicle reaching the drive-through window.

In order to reach as wide an audience as possible, the NSUBS uses some Spanish-speaking data collectors.

This (2007) is the second year for the NSUBS survey. The 2007 survey data is based on the observation of 14,000 occupants, 7,500 of whom were under age 13, in 4,800 vehicles at 38 day care centers, 134 fast-food restaurants, 218 gas stations, and 40 recreation centers nationwide. The survey interviews covered 6,560 children under age 13, including 330 infants under 1 year old, 1,494 children 1 to 3 years old, 2,471 children 4 to 7 years old, and 2,265 children 8 to 12 years old. The data was collected between July 19 and August 2, 2007 while the 2006 data was collected between July 17 and July 29, 2006.

Sites, Vehicles, Occupants, and Children Age 12 and Younger in NSUBS

Numbers of	2006	2007	Percentage Change
Data Collection Sites	390	430	9%
Vehicles Observed	3,500	4,800	38%
Occupants Observed	10,000	14,000	42%
Children Age 12 and Younger Observed	5,300	7,500	42%
Children Age 12 and Younger Interviewed*	4,400	6,600	48%

* Data obtained by interview with an adult occupant.

The 2007 survey yielded nearly a 50-percent increase in the number of occupants observed. This could be due in part to dropping certain questions from the occupant interviews, shortening the interview time per vehicle from about 5 minutes in 2006 to about 2 minutes in 2007, thus allowing for the collection of data on more vehicles per site. The increase in observations in 2007 could also be due to the addition of some sites to the survey and increased site participation rates.

The NSUBS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. See the NHTSA Technical Report referenced below for more information on these procedures, as well as for more information on the survey's data collection protocols.

The design of the survey, survey preparation activities, data collection, estimation, and variance estimation for the NSUBS were conducted by Westat, Inc., under the direction of the National Center for Statistics and Analysis in NHTSA under Federal contract number DTNH22-07-D-00057. The OMB clearance number for the NSUBS is 2127-0644.

What Do the Survey Results Tell Us? Are the Results Representative?

By design and necessity, the NSUBS survey data is obtained from a restricted set of site types, namely gas stations, day care centers, recreation centers, and restaurants in five fast-food chains. However the survey uses a probability sample of these site types, and so its results are representative of children who frequent these types of sites.

For instance, the survey result of 75-percent restraint use among 4- to 7-year-old Hispanic children means that among children in this age range who were taken by passenger vehicles to gas stations, day care centers, recreation centers, or fast-food restaurants in 2007, 75 percent were in seat belts, booster seats, or child safety seats. Whether or not the restraint use rate for children of this age group, race, and ethnicity who do not frequent these site types is comparable to the national average is an open question, and not one that the NSUBS (or any other available survey) can answer.

Definitions

The NSUBS supports NHTSA's multicultural initiative by providing critical data on restraint use by race/ethnicity. Race/ethnicity data in the NSUBS is collected in accordance with Federal standards set forth by the Office of the Management and Budget (OMB). Specifically, the following 10 race/ethnicity categories are employed in the survey data collection:

- Not Hispanic or Latino and
 - American Indian or Alaska Native
 - Asian

- Black or African-American
 - Native Hawaiian or Pacific Islander
 - White
- Hispanic or Latino and
- American Indian or Alaska Native
 - Asian
 - Black or African-American
 - Native Hawaiian or Pacific Islander
 - White

The NSUBS data collectors ask the adult occupants of vehicles to report the race and ethnicity of all occupants. (In particular, the race and ethnicity of children are as reported by adult occupants.) Respondents reporting themselves (or others) to be multiracial are recorded by the data collector as such.

Because of insufficient numbers of children observed in certain race/ethnic groups, we report the NSUBS data using the following five collapsed race/ethnicity groups:

- Hispanic or Latino
- White Non-Hispanic
- Black or African-American Non-Hispanic
- Asian Non-Hispanic
- Other Non-Hispanic (which comprises people not of Hispanic origin who are American Indian, Alaska Native, Native Hawaiian or Pacific Islander)

In the survey, a child considered to be “restrained” if the child meets any of the following five definitions:

Rear-Facing Child Safety Seat - The child occupant is in a seat that sits on top of the vehicle seat in such a way that the child faces the rear of the vehicle, and the harness straps are across the child’s front. The harness straps might be secured or not.

Front-Facing Child Safety Seat – The child occupant is in a seat that sits on top of the vehicle seat in such a way that the occupant faces the front of the vehicle, and with harness straps that are across the child’s front.

High-Backed Booster Seat - The child occupant is in a seat with a seat back that sits on top of the vehicle seat, and has a seat belt across the front of the child’s body, whether lap or lap/shoulder. No harness is in use.

Backless Booster Seat - The child occupant is sitting on a platform with no seat back that sits on top of the vehicle seat, and has a seat belt across the front of the child’s body, whether lap or lap/shoulder. No harness is in use.

Seat Belt – The child is sitting on the vehicle seat and the seat belt is across front of the body (includes lap belts).

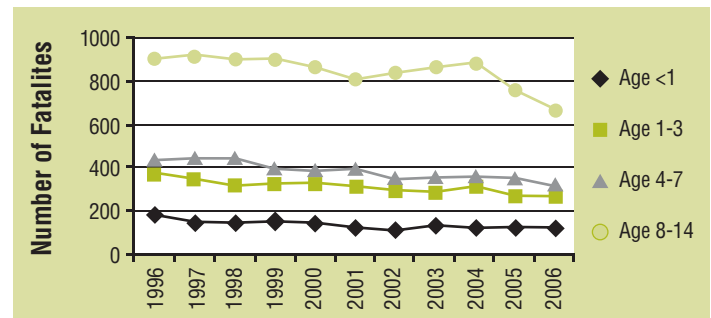
A Change to the 2007 Survey That Could Affect Results

The year 2007 constitutes the second year in which the NSUBS was conducted. In response to requests from data collectors after the 2006 survey, additional training was conducted on what constitutes “use” for front-facing seats and booster seats, particularly regarding that the harness or seat belt must be across the front of the child’s body. This improved training could have contributed to the decrease in restraint use among 4- to 7-year-olds in the 2007 survey, compared to the 2006 survey findings.

Progress in Reducing Child Fatalities

We note that child occupant fatalities have declined in the past decade, as demonstrated by NHTSA’s Fatality Analysis Reporting System (FARS). Booster seats, child safety seats, and seat belts provide key tools to achieve further fatality reductions.

Occupant Fatalities Among Children Age 14 and Under by Age Groups, 1996-2006



Source: Fatality Analysis Reporting System (FARS), NHTSA’s National Center for Statistics and Analysis, 1996-2006

For More Information

The NSUBS provides a rich data source for information on the restraint use of all children under age 13. In particular, the NSUBS provides the agency’s estimate of booster seat use among 4- to 7-year-olds and provides data on the premature graduation of children age 12 and younger to restraint types that are inappropriate for their height or weight. This publication is part of a series that presents overall results from the survey on these topics. Please see the companion publications “Booster Seat Use in 2007” and “Child Restraint Use in 2007—Use of Correct Restraint Types” for the latest data on these topics. Detailed information on the NSUBS survey design and analysis procedures are provided in the NHTSA Technical Report “The 2007 National Survey of the Use of Booster Seats— Methodology Report.” These publications will be available at the Web site <http://www-nrd.nhtsa.dot.gov/CMSWeb/ViewCatalogbyCategory.aspx> in 2007 or 2008.

Additional results related to demography and child restraints are provided by NHTSA's National Occupant Protection Use Survey, a survey that employs purely observational means (i.e., does not conduct interviews) to measure restraint use on the nation's roadways. Please see the publications "Seat Belt Use in 2006 – Demographic Results" and "Child Restraint Use in 2006" for the latest results in these topics. These are available at the above NHTSA Web page.

For more information on the campaign by NHTSA to increase child restraint use, see www.nhtsa.gov.

For information on the OMB standards for the collection of race and ethnicity data in government surveys, please see "Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, Federal Register Notice, Volume 62, Number 210, pages 58781-58790, October 30, 1997," available at www.omb.gov.



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