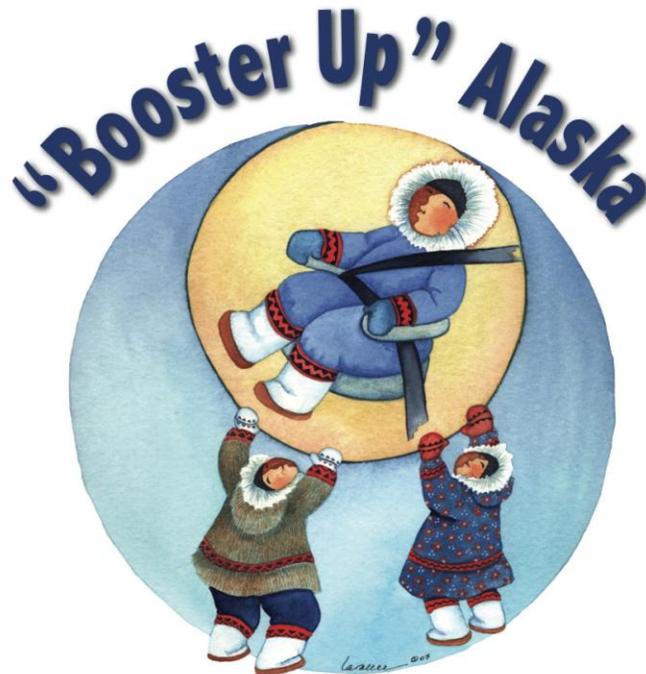


# Anchorage Booster Seat Use 2009-2010

*Observational Study of Child Passenger Safety Device Use  
Before and After Implementation of Legislation and a Multi-Media Campaign*



## Keep Kids in Booster Seats up to 4' 9"

Alaska Injury Prevention Center 929-3939  
Alaska Highway Safety Office 465-2446

**Sponsored by:** The Alaska Injury Prevention Center and  
The Alaska Highway Safety Office

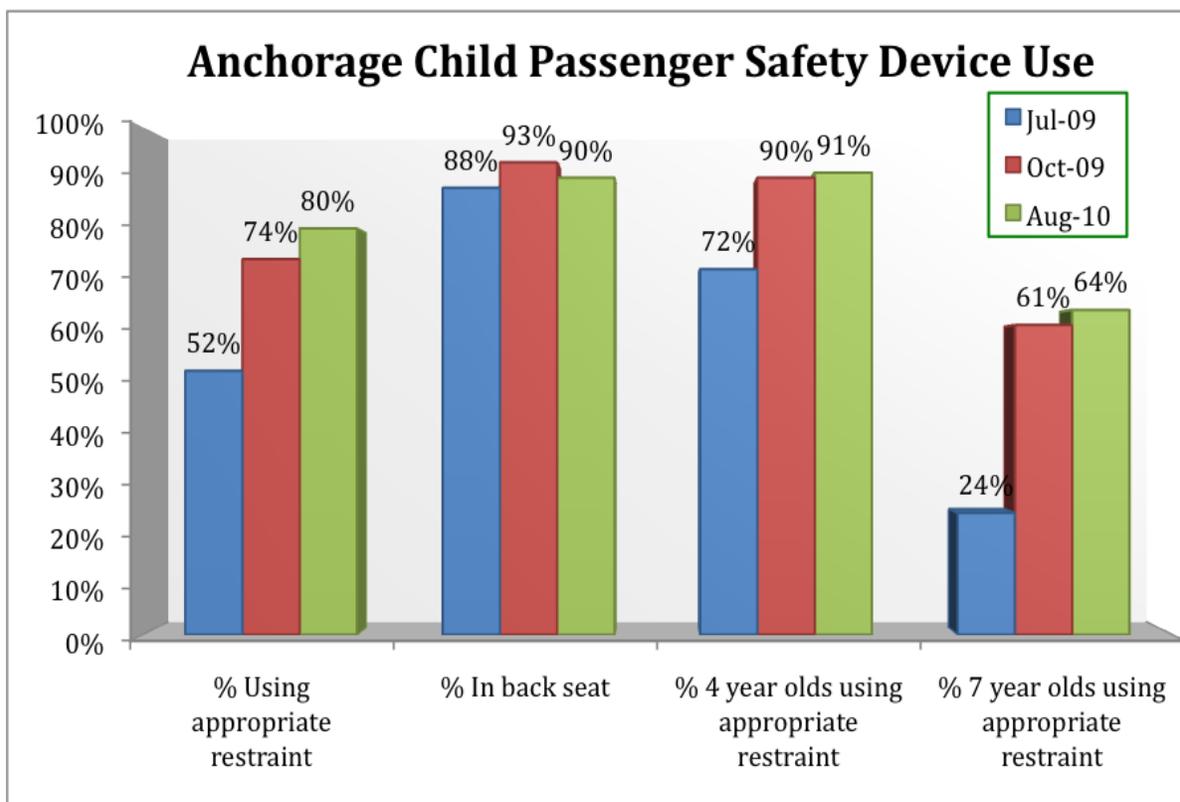
**Written by:** Marcia Howell and Beth Schuerman

# Anchorage Booster Seat Use 2009

*Observational Study of Child Passenger Safety Device Use  
Before and After Implementation of Legislation and a Multi-Media Campaign*

## Executive Summary

In 2009, Alaska passed a revision to its seatbelt law. The revision clarified the requirements for children under the age of 8 to be restrained in a “booster or car seat.”<sup>1</sup> The law became effective September 15, 2009. In July 2009, the Alaska Injury Prevention Center (AIPC), with multiple partners, conducted a pre legislation-observational study to determine a baseline measure of appropriate child passenger safety device (CPSD) usage for children ages 4 through 7 years old. The definition of an appropriate CPSD was based on the revised statute: “use of a car seat or booster seat using lap and shoulder belt by children ages 4-7 who were under 65 pounds and under 4’9” tall.” In October 2009 a second observational study was conducted after the revised law became effective and a multi-media campaign had been implemented. The post enactment-observations showed significant gains in appropriate use of child passenger safety devices for all children between the ages of 4 and 7. One year after the pre-observation, in August 2010, a follow-up observation was conducted. The follow-up results showed continued improvement in appropriately restrained children.



<sup>1</sup> Seat must meet or exceed the standards of the USDOT, and be used with the manufacturer's instructions.

### Summary of Findings

- The national estimate of correct child passenger safety device for children between the ages of 4 and 7 is 55%.
- As children in Anchorage get older, they are less likely to be safely restrained in a motor vehicle.
- The greatest increase in use of booster seats (167%) was for 7-year old children.

Pre Legislation Observations	1 Month Post Legislation Observations	11 Months Post Legislation Observations
<u>52%</u> were using appropriate child passenger safety devices.	<u>74%</u> were using appropriate child passenger safety devices.	<u>80%</u> were using appropriate child passenger safety devices.
-	<u>42% Increase</u>	<u>54% from Pre-legislation Levels</u>
-		
<u>88%</u> of the children were seated in the <u>back seat</u> .	<u>93%</u> of the children were seated in the <u>back seat</u> .	<u>90%</u> of the children were seated in the back seat.
	<u>6% increase</u>	<u>2% Increase from Pre-legislation Levels</u>
-		
<u>72%</u> of <b>4 years olds</b> using appropriate child passenger safety devices.	<u>90%</u> of <b>4 years olds</b> using appropriate child passenger safety devices.	<u>94%</u> of <b>4 years olds</b> using appropriate child passenger safety devices.
	<u>25% increase in 4 year olds</u>	<u>30% increase in 4 year olds from Pre-legislation Levels</u>
<u>24%</u> of <b>7 year olds</b> were using appropriate child passenger safety devices.	<u>61%</u> of <b>7 year olds</b> were using appropriate child passenger safety devices.	<u>64%</u> of <b>7 year olds</b> were using appropriate child passenger safety devices.
-	<u>154% increase in 7 year olds</u>	<u>167% increase in 7 year olds from Pre-legislation Levels</u>

## Background:

The degree to which children used appropriate child passenger safety devices was unknown in Alaska. Those who worked on the issue believed that use was lower than it could and should be. They also recognized that the seatbelt law in Alaska was ambiguous concerning use of car and booster seats and seatbelts for children less than 16 years old.

## Alaska Seat Belt Law Facts:

- May 1989: Alaska State Legislature passed a law requiring seat belt use by all occupants in a motor vehicle. Failure to wear a seat belt for anyone over 16 years of age became a secondary traffic violation.
- May 1, 2006: Alaska's primary seat belt law went into effect. The amended seat belt law made it a primary traffic violation. Primary seat belt law permits a law enforcement officer to stop a vehicle and issue a citation for a seatbelt violation even if it was the only violation observed.
- September 15, 2009: The Seat Belt Law revision, clarifying booster and car seat requirements, went into effect. The revision requires children older than 4 and younger than 8 years old, who are less than 57 inches in height and weigh 20-65 pounds to be properly secured in a booster or car seat.<sup>2</sup>

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### <sup>2</sup> **AS 28.05.095. Use of Seat Belts and Child Safety Devices Required:**

**Sec. 2.** AS 28.05.095(b) is amended to read:

(b) Except as provided in (c) of this section, a driver may not transport a child under the age of 16 in a motor vehicle unless the driver has provided the required safety device and properly secured each child as described in this subsection. A [IF THE] child

(1) less than one year of age or a child one year of age or older who weighs less than 20 pounds shall be properly secured in a rear-facing child safety seat that meets or exceeds [IS LESS THAN FOUR YEARS OF AGE, THE CHILD SHALL BE PROPERLY SECURED IN A CHILD SAFETY DEVICE MEETING THE] standards of the United States Department of Transportation and is used in accordance with the manufacturer's instructions;

(2) one or more years of age but less than five years of age who weighs 20 pounds or more shall be properly secured in a child restraint device that meets or exceeds the standards of the United States Department of Transportation and is used in accordance with the manufacturer's instructions;

(3) over four years of age but less than eight years of age who is less than 57 inches in height and weighs 20 or more pounds but less than 65 pounds shall be properly secured in a booster seat that is secured by a seat belt system or by another child passenger restraint system that meets or exceeds the standards of the United States Department of Transportation and is used in accordance with the manufacturer's instructions;

(4) over four years of age who exceeds the height or weight in (3) of this subsection shall be properly secured in a seat belt;

(5) eight years of age [FOR A CHILD SAFETY DEVICE FOR INFANTS. IF THE CHILD IS FOUR] but less than [NOT YET] 16 years of age who does not exceed the height and weight requirements in (3) of this subsection [THE CHILD] shall be properly secured in a child safety device approved for a child of that [AGE AND] size by the United States Department of Transportation or in a safety belt, whichever is appropriate for the particular child as determined solely by the driver.

### Multi-Media Campaign and Community-Wide Car Seat Checks:

The Alaska Injury Prevention Center (AIPC), with funding from the Alaska Highway Safety Office and State Farm Insurance, designed and implemented a multi-pronged public awareness campaign promoting the new Child Passenger Safety requirements. Prior to designing the campaign, AIPC conducted a focus group with parents of 4-7 year old children. Parents described being unsure of the legal requirements for booster seat use, described the difficulty of keeping their older children in booster seats but were genuinely interested in doing the right thing and keeping their children safe. With this information, and after reviewing the successes of similar campaigns, a media campaign was created which included a radio message<sup>3</sup> (aired 188 times on multiple radio stations) a TV ad<sup>4</sup> providing a clear interpretation of the legal requirements, in a lively and entertaining manner (aired 176 times on multiple channels) and a colorful and informative packet of information was developed and sent to 300+ Child Passenger Safety partners, child care providers, pediatricians, schools and other interested parties. Additionally, a press conference, hosted by Alaska Sales and Service GM dealership, Safe Kids and the State of Alaska Child Passenger Safety Program, was held, featuring a ceremonial signing of the bill by then Alaska Governor, Sarah Palin. Anchorage-based, city wide booster seat promotion events, with booster seats available for minimal donations, were held concurrently at 3 Anchorage Fire Department stations, in cooperation with Anchorage Fire Department, the Alaska Injury Prevention Center and Safe Kids Alaska.

### Methodology:

The Alaska Injury Prevention Center (AIPC) staff and volunteers conducted observations of child passenger safety practices of 4-7 year old children on 2 Saturdays and 2 Sundays, in June 2009 between 10am and 2pm at 5 Carrs/Safeway parking lots. The same methodology was replicated in October 2009 (post-observation) and in July, 2010 (1-year follow-up observation.) Beth Schuerman, the coordinator of the study, obtained permission from the stores on the corporate level and at each individual location. The specific store locations were chosen in order to observe a broad range of socio-economic children. Beth trained each observer on the methodology, safety protocols and use of the spreadsheet for recording data. The safety and methodology protocols are attached as Appendix A, and the spreadsheet is attached as Appendix B.

Observers watched for a caregiver to exit the store with at least one child who appeared to be between the ages of 3 and 8. The observer approached the caregiver after the child was secured in the car and asked the age, weight and height of the child. The observer then noted where in the car the child was seated, and the type of restraint that was used. The survey did not measure whether the child restraint or booster was correctly

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<sup>3</sup> “Attention caregivers of children 4-8 yrs old! It is now the law for children between the ages of 4 to 8 years old to be secured in a car seat or booster seat. A seat belt alone is not enough for these young children to be safe. Remember- booster seats for 4-8 year old- it's the law! New Booster Seat Law to be enacted on 9/17.”

<sup>4</sup> Booster seat PSA can be viewed on [You Tube](http://www.youtube.com/user/marciahowell#p/u/28/NQkks-NgWmY)  
<http://www.youtube.com/user/marciahowell#p/u/28/NQkks-NgWmY>

installed. Observers were all trained and provided with a script and spreadsheet for collecting data.

Observers recorded the reported age, gender, height and weight of the child, vehicle type (car, SUV/minivan or Truck) whether the child was in the front or back seat of the vehicle and what type of restraint system was used (none, lap belt only, lap and shoulder belts, car seat, no back booster seat with lap and shoulder belts, no back booster with lap belt only, high back booster with lap and shoulder belts and high back booster with only lap belt.) Of these, the car seat, and either a high or no back booster using both lap and shoulder belts were considered appropriate child passenger safety devices (CPSD).

Observers provided a NHTSA Booster Seat educational brochure (attached as Appendix A) to all participants. Instruction on correct usage was not provided. While difficult, this choice was made for several reasons. One reason was time constraints. To provide proper installation information would have added 20 minutes to each observation, significantly limiting the number of observations that could have been made. Alternatively, providing a shortened version of the information would have been inappropriate. And finally, the study did not have permission from the stores to conduct car seat checks in their parking lots, simply to observe usage of CPSD's.

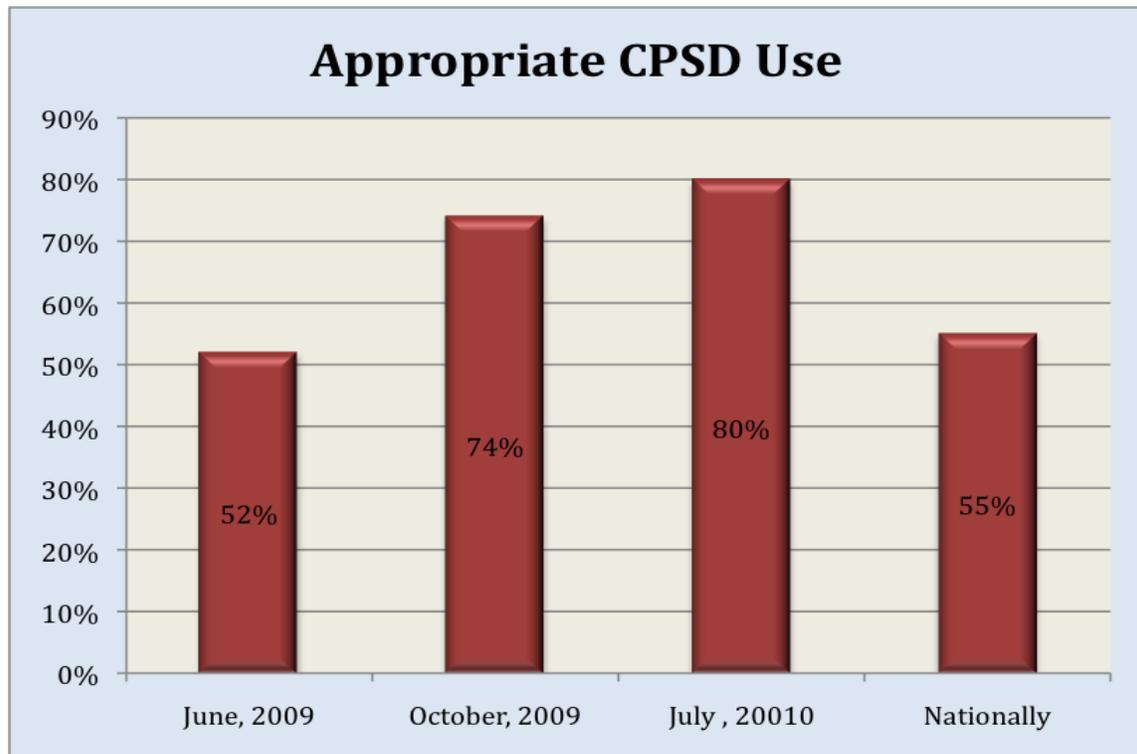
#### Analysis:

All data were initially entered into SPSS- version 17, and later PASW-version 18 (software name changed from SPSS to PASW) and then analyzed. One person coded the data and a second person reviewed the codes for accuracy. During the June 2009 observations, two hundred and forty two children were observed with 40% male (n=97) and 60% female (n=143).<sup>5</sup> During October 2009, 148 children were observed, with 44% male (n= 60) and 56% female (n=75.) In August, 2010 221 children were observed with an even split of 50% male and female. In all three observational periods, most children were seated in the back seat. In the July 2009, 88% were seated in the back seat, in October 2009 94% were in the back seat and in August 2010 90% of children were in the back seat. In July 2009, just over half of the children observed (52%) were appropriately restrained in either a car seat or a booster seat, utilizing both a shoulder and lap belt. In October 2009, this percent rose to 74%, an increase of 42%. After nearly a year, this rate was still on the rise at 80%.*(Graph 1)* Nationally, the National Survey of the Use of Booster Seats (nSUBS) estimates that 55% of children ages 4 through 7 are appropriately restrained.<sup>6</sup>

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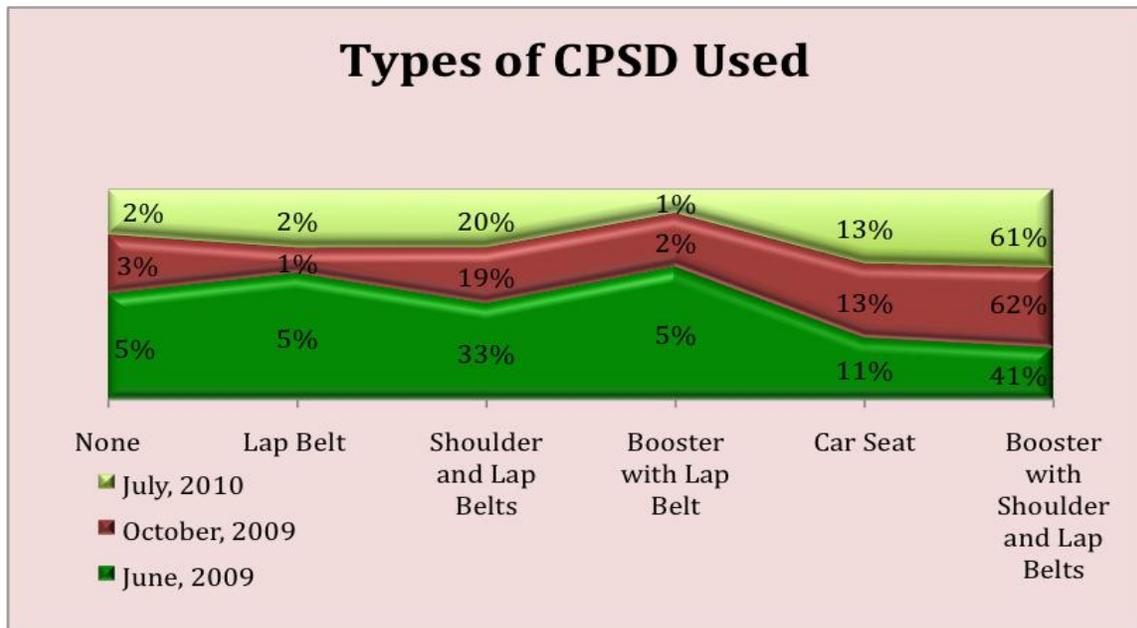
<sup>5</sup> Some of the categories had missing data, leaving some categories without all 242 observed cases.

<sup>6</sup> Traffic Safety Facts, Research Notes, NHTSA, DOT HS 811-121, May 2009; Booster Seat Use in 2008.



*Graph 1*

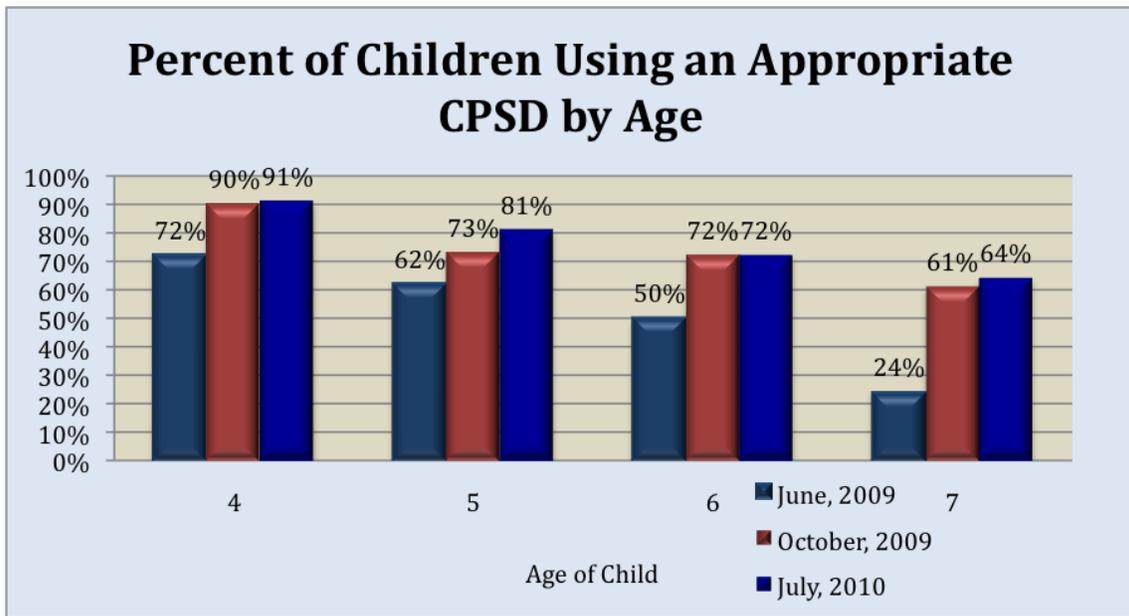
The most common inappropriate restraint observed were children using lap and shoulder belts without a booster or car seat (June 2009: 33%, October 2009: 19% and July 2010: 20%.) The next type of common misuse was children in either no seatbelt (June 2009: 5%, October 2009: 3%, July 2010: 3%) and finally, the least common form of mis-use was a child with only a lap belt (June 2009: 5%, October 2009: 1% and July 2010: 2%.) The most common method of fastening a child in a booster seats was use of a high back booster with lap and shoulder (June 2009: 25%, October 2009: 31% and July 2010: 36%) The second most common method was using a no back boosters with lap and shoulder belts (June 2009: 17%, October 2009: 31% and July 2010: 28%.) In the June 2009 observation, eleven percent of children between the ages of 4 and 7 were correctly seated in car seats. This percent rose slightly to 13% in October 2009 and remained there in the July 2010. (*Graph 2*)



*Graph 2*

The older the children, the more likely they were to be in the front seat, and with only a lap, shoulder, or lap and shoulder seat belts. Seventy-two percent of 4 year olds were properly restrained in June 2009. After the interventions, that number increased to 90% of 4-year old children and increased slightly to 91% in July 2010. Only 24% of 7-year old children were properly restrained in June 2009. That percent increased dramatically to 61% by October 2009 and to 64% in July 2010. (*Graph 3*) Nationally the numbers are slightly better than the pre-observations, but less than the post-observations in Alaska. “In 2008, 48 percent of children age 4 and 5 were restrained in booster seats. The booster seat use rate among 6- and 7-year-olds increased to 35 percent in 2008 from 25 percent in 2007.”<sup>7</sup>

<sup>7</sup> Traffic Safety Facts, Research Notes, NHTSA, DOT HS 811-121, May 2009; Booster Seat Use in 2008.



*Graph 3*

National Survey of the Use of Booster Seats (nSUBS) is the only probability-based nationwide child restraint survey that observes restraint use and obtains age by interview. However, the NSUBS found that in 2008, 43 percent of children in this age group were using booster seats (either high-backed or backless), 12 percent were restrained in child safety seats, 34 percent were in seat belts, and 11 percent were unrestrained. These results indicate that as many as 45 percent of children 4 to 7 in the United States were not being properly protected (34% in seat belts and 11% unrestrained). The 2008 NSUBS survey also found the following: In 2008, 48 percent of children age 4 and 5 were restrained in booster seats. The booster seat use rate among 6- and 7-year-olds increased to 35 percent in 2008 from 25 percent in 2007.

Conclusion:

The older children get, the less likely they are to be in a booster seat, and the more likely they are to be sitting in the front seat. The combined strategy of clarifying the requirements for safely restraining children in motor vehicles along with a multi-media social marketing campaign and public car seat check events has shown dramatic positive results. More children between the ages of 4 and 7 are now appropriately restrained, and this is especially true for the older children. A 2-year post intervention observation will be conducted to determine the long-term effectiveness of the prevention efforts. This will help to determine the need for a continued campaign, and to carefully target it for the greatest impact.

For more information, please contact Beth Schuerman at the Alaska Injury Prevention Center, Coordinator for the Booster Up Alaska efforts. 907-929-3939

## Appendix A

### **BOOSTER SEAT USE EVALUATION PROCEDURES**

1) Arrive at your scheduled location on time. Find the other scheduled volunteer at the main customer service desk. Wear the nametag and vest provided to you.

2) Notify the customer service desk that you will be in their parking lot conducting a Booster Seat Use observation with permission from the Carr's/Safeway office. (You have been provided with a letter of intent and the Carr's/Safeway authorization contact and telephone number.

3) Each of the two 'volunteers' should identify a store main entrance door to observe. You will be looking for caregivers EXITING the store with children in the 4yrs UP TO 8 yrs old age group. Measure yourself to determine where 4'9" height is, identify this height on the entrance door or some stationary object. Identify customers with this size (under 4'9") child and who is potentially over 4 yrs old. Wait until the identified shopper and child/children get secured into their vehicle.

4) Approach the adult in a friendly manner.

Hi, my name is \_\_\_\_\_, I work with Alaska Injury Prevention Center. May I ask you 3 quick questions regarding car seat safety?

Is the child with you between 4 and 8 years old? If yes, how old? Circle the number 4-5-6 or 7 on the form. If No say "thank you very much - here's some information regarding booster seats. The study is only regarding children under 8yrs old and older than 4.

Is the child under 65#? Circle Yes or No

Is the child under 4'9"? Circle Yes or No

Do not ask but note if the child is: Male or Female, whether the child is in the front or a back seat of the vehicle, what type of vehicle; Car - SUV/Van- or Truck, the ethnicity of the child.

Thank the adult and provide them with a booster brochure. Ask if you can give a sticker to the child (this is a good opportunity to get a better look at what type of restraint the child is using. Do not be invasive. Do not touch the child. Do not give Child Passenger Safety advice. Tell participants that there is contact information/website information on the handout if they would like more information about the study or about child passenger safety.

If there is more than one 4 to 8 yr old in the vehicle make a mark on the form, grouping the children together.

If they choose not to participate- mark "refusal" across that row of the form.

If you can't figure out what Restraint System category the child is using- make a notation on the back of the form- referencing the line number and the odd situation details. We'll try to figure it out later.

Do not use the words; RESTRAINT or SURVEY to the participants- both these words have negative connotations to many people.

It is suggested that you leave the clipboard in your car- some people may shy away from someone approaching them with to record information.

Thank you so much for your help! Beth's cell number is 244-1123 if you have any questions.

**Booster Seat Use Surveyors Check List of Supplies**

- Name tag
- Vest
- Schedule (\$40 stipend per shift)
- Training (Movie Ticket)
- Authorization –Safeway/Safeway office; Karen Lutez 339-7704
- Letter of Intent (explaining our purpose)
- Stickers for children
- Booster brochures for caregivers (with AIPC contact information)
- Observation forms
- Clipboard/pen

Appendix B

	Age (Circle One)	Weight Under 65#?	Height under 4'9"	Gender	Seating Position	Vehicle Type (circle one)	Restraint System	Ethnicity
	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck	See Key Below (#only)	below
1	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
2	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
3	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
4	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
5	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
6	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
7	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
8	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
9	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
10	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
12	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		
13	4 5 6 7	Yes No	Yes No	M F	Front Back	Car SUV/Van Truck		

Restraint System: Record only ONE system per 4 to 8 year old child

- 1) NONE
- 2) LAP ONLY SEAT Belt
- 3) SHOULDER/LAP SEAT BELT
- 4) CAR SEAT W/HARNESS  
(3pt, 5pt, tray shield, vest)
- 5) NO BACK BOOSTER W/SHOULDER LAP SEAT BELT
- 6) NO BACK BOOSTER W/LAP ONLY SEAT BELT
- 7) HIGH BACK BOOSTER W/SHOULDER LAP SEAT BELT
- 8) HIGH BACK BOOSTER W/LAP ONLY SEAT BELT
- 9) SHIELD BOOSTER

**Ethnicity**

- C Caucasian
- N native AK/Indian
- AA African amer
- PI pacific islander
- A Asian
- H Hispanic
- DK don't know

## When do you use a booster seat? After your child outgrows the child safety seat.

Children who have outgrown child safety seats should be properly restrained in booster seats until they are at least 8 years old, unless they are 4'9" tall.

National Highway Traffic Safety Administration



**REAR-FACING SEATS** in the back seat from birth to at least 1 year old and at least 20 pounds.



**FORWARD-FACING TODDLER SEATS** in the back seat from age 1 and 20 pounds to about age 4 and 40 pounds.

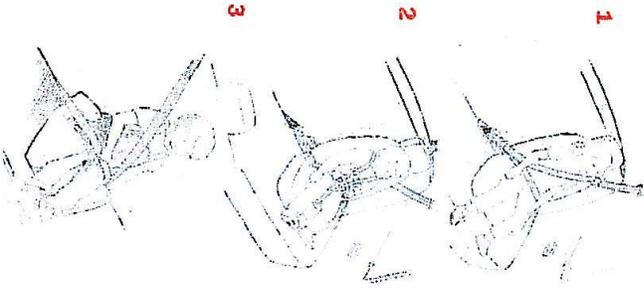


**BOOSTER SEATS** in the back seat from about age 4 to at least age 8, unless 4'9" tall.



**SAFETY BELTS** at age 8 and older or taller than 4'9". All children age 12 and under should ride in the back seat.

## TYPES OF BOOSTER SEATS YOU CAN USE



### HIGH-BACK BELT-POSITIONING BOOSTER SEATS

Two types of high-back belt-positioning booster seats are available. Both types "boost" your child up so the vehicle safety belt fits better.

- 1 One type provides head and neck support for your child if your vehicle seat back does not have a head rest. It must be used with the vehicle's lap/shoulder belt, never with the lap belt only.
- 2 The other, a combination seat, converts from a forward-facing toddler seat to a booster seat and comes equipped with a harness. This type can be used as a forward-facing toddler seat when your child is age 1 and at least 20 pounds to about age 4 and 40 pounds. When your child outgrows the toddler seat, remove the harness and use the seat as a booster seat with the vehicle's lap/shoulder belt.

### NO-BACK BELT-POSITIONING BOOSTER SEAT

- 3 This type also "boosts" your child up so the vehicle safety belt fits better. This booster seat is used with a lap/shoulder belt. It should only be used in vehicles with built-in head rests.

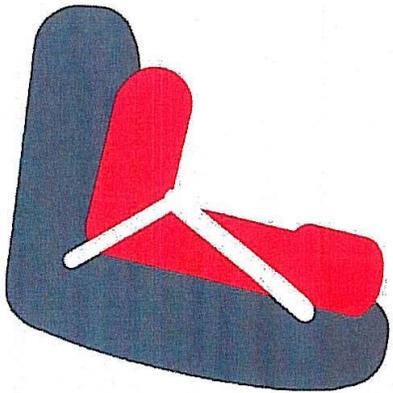
All booster seats are required by law to comply with the same safety standards as child safety seats. Your booster seat must have a label stating that it meets Federal motor vehicle safety standards.

## SAFETY TIPS FOR BOOSTER SEATS

- \* The shoulder belt should never be placed behind a child's back or under the arm. If this is done, your child could be seriously injured or killed in a crash.

Because many State laws only require children to be in a safety seat up to age 4 or so, many parents assume older kids are safe in just an adult safety belt. However, all children need to be restrained correctly whenever they ride in a motor vehicle - every trip, every time.





## WHY WE USE BOOSTER SEATS

Safety belts are not designed for children. Beginning at around age 4, many children are too large for toddler seats but too small for adult safety belts. A booster seat raises your child up so that the safety belt fits right – and can better protect your child. The shoulder belt should cross the child's chest and rest snugly on the shoulder, and the lap belt should rest low across the pelvis or hip area – never across the stomach area.

Need help with your booster seat? Visit a child safety seat inspection station near you.

To find one, go to <http://www.nhtsa.dot.gov/cps/cpsitting> or call 1-888-327-4236.

Booster seats are sold at toy stores, department stores, and other retail outlets.



For more information about booster seats and other child passenger safety issues, go to the National Highway Traffic Safety Administration (NHTSA) Web site at: [www.boosterseat.gov](http://www.boosterseat.gov) or call the DOT Vehicle Safety Hotline at 1-888-327-4236.



Local Contact Information [www.carsseatsak.org](http://www.carsseatsak.org)

AK Injury Prevention Center 929-3939

AK Division of Public Health IPEMS 289-3433



DOT HS 809 503  
September 2005

## A PARENT'S GUIDE TO BUYING AND USING Booster Seats

