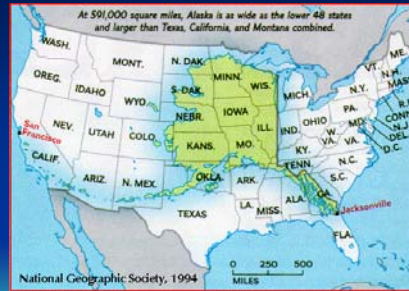


# Bringing a "Booster" To Child Passenger Safety in Alaska

Presented by  
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 State of AK, DPH-IPEMS

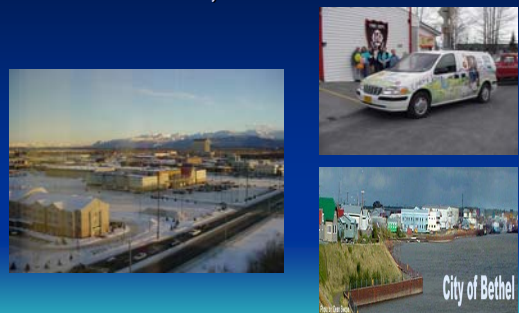
## Alaska is Big



## Beautiful



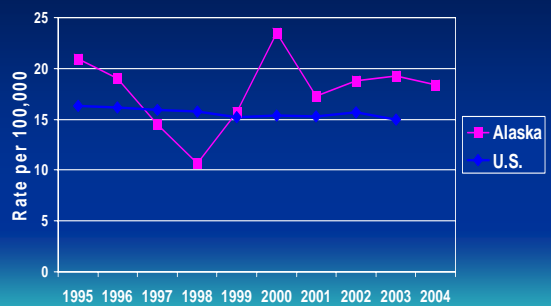
## Alaska is diverse, Urban, Rural & Bush



## Non-Fatal Injuries 1997-2001, Age 0-19

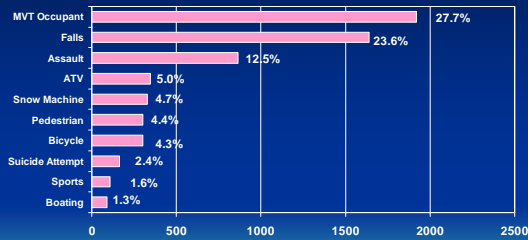
Injury Cause	Number	Percent
FALLS	2,283	25.6 %
MV OCCUPT	1,216	13.6 %
OFF-RD MV	903	10.1 %
SPORTS	548	6.1 %
BICYCLE	539	6.0 %
POISONING	473	5.3 %

## Motor Vehicle Crash Death Rates 1995-2004



## Brain Injury Hospitalizations (1994-2003)

### Top Ten



Total for 10 years is 6,937

Alaska Trauma Registry

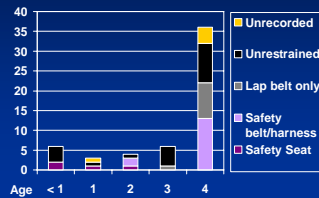
## The Alaska Trauma Registry (ATR)

- most recent summary from 2001-2004 identifies 55 children from birth through eight year of age, seriously injured in MV crashes on a state road system
- All required admission to a hospital, of which three died and one two-year-old victim's injuries resulted in quadriplegia. Only four of the 55 injured children were recorded to have been restrained properly in the recommend child restraint at the time of injury - and none of the four mentioned were properly restrained.

Alaska Trauma Registry

## Motor Vehicle Crash Injuries to Alaskan children, Age 0-8, 2001-2004

55 children were in crashes causing serious injuries – including three deaths and one two-year old with quadriplegia. Only four of the 55 were recorded to have been properly restrained in the recommended child safety seat.



Alaska Trauma Registry

Age	# injured	Restrained in CSS	Unrestrained	?
>1	6	2	4	0
1yr	3	1	1	1
2yr	4	1	2 safety belt/harness 1 unrestrained	
3yr	6		1 lap belt 5 unrestrained	
4-8 yr	36		12 safety belt/harness 9 lap belt 10 unrestrained	4
total	55			

Alaska Trauma Registry

## FARS Children Restraint Use 2000-2005

### 0 to 1 years old.

- 1(2000), no airbag deployment, sb/childseat not used, right side front seat.
- 1(2005), airbag not available, child safety seat used, middle rear seat

### 2 to 4 years old:

- 1(2000), no airbag deployment, child was in rear right seat, lap belt only
- 1(2000), no airbag deployment, child in right rear seat, child safety seat used improperly.
- 1(2001) no airbag deployment, child in front seat middle, lap belt
- 1(2004), child was in enclosed passenger area of a mini van. This case was interesting because the vehicle was left running, child went into vehicle to get something, vehicle rolled out of driveway and once onto a roadway the child was thrown out and run over. Per FARS HQ reporting rules, we kept this fatal.

### 5 to 8 years old:

- 1(2001) airbag deployed, front right side seat, no restraint used
- 1(2001) no airbag deployment, not available this seat, was rear left seat, lap belt.
- 1(2003) no airbag deployment, not available this seat, right rear seat, no restraint used.

AK DOT-OHS FARS

## AS 28.05.095. Use of Seat Belts and Child Safety Devices Required

(a) Except as provided in (c) of this section a person

(1) 16 years of age or older may not occupy a motor vehicle while being driven unless restrained by a safety belt; and

(2) may not operate a motor vehicle unless restrained by a safety belt.

(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. If the child 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 for a child safety device for infants. If the child is four but not yet 16 years of age, 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 28.05.095. Use of Seat Belts and Child Safety Devices Required

If the child is four but not yet 16 years of age, 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.

## A PARENT'S PRIMER 4 GROWING UP SAFE It's a four-stage process.

- 1) REAR-FACING INFANT SEATS
- 2) FORWARD-FACING TODDLER SEATS
- 3) BOOSTER SEATS
- 4) SAFETY BELTS

**REMEMBER: All children age 12 and under should ride in the back seat.**

## Infant & RF Convertible

Use a rear-facing car seat until your child is at least age 1 and 20 lbs. Even better is to keep your child in your rear-facing car seat longer if the seat has higher weight and height limits



## Toddlers



Use a forward-facing car seat (convertible or combo seat) until the harness no longer fits, usually at forty pounds

## The missing stage

Use a booster seat with the vehicle lap **and** shoulder safety belts until your child passes the 5 Step Safety Belt Fit Test



## The 5-Step Test

1. Does the child sit all the way back against the auto seat?
2. Do the child's knees bend comfortably at the edge of the auto seat?
3. Does the belt cross the shoulder between the neck and arm?
4. Is the lap belt as low as possible, touching the thighs?
5. Can the child stay seated like this for the whole trip?

If you answered "no" to any of these questions, your child needs a booster seat to make both the shoulder belt and the lap belt fit right for the best crash protection. Your child will be more comfortable, too!

The back seat is the safest part of the car for all passengers.

\*SafetyBeltSafe U.S.A. P.O. Box 553, Altadena, CA 91003

JAMA. 2003 Jun [Durbini DR, Elliott MR, Winston FK.](#)  
**Belt-positioning booster seats and reduction in risk of injury among children in vehicle crashes.**

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**CONTEXT:** Although more than a dozen states have ratified laws that require booster seats for children older than 4 years, most states continue to have child restraint laws that only cover children through age 4 years. Lack of booster seat effectiveness data may be a barrier to passage of stronger child restraint laws. **OBJECTIVES:** To quantify the association of belt-positioning booster seats compared with seat belts alone and risk of injury among 4- to 7-year-old children and to assess patterns of injury among children in booster seats vs seat belts. **DESIGN, SETTING, AND POPULATION:** Cross-sectional study of children aged 4 to 7 years in crashes of insured vehicles in 15 states, with data collected via insurance claims records and a telephone survey. A probability sample of 3616 crashes involving 4243 children, weighted to represent 56 593 children in 48 257 crashes was collected between December 1, 1998, and May 31, 2002. **MAIN OUTCOME MEASURE:** Parent report of clinically significant injuries. **RESULTS:** Injuries occurred among 1.81% of all 4- to 7-year-olds, including 1.35% of those in seat belts and 0.77% of those in belt-positioning booster seats. The odds of injury, adjusting for child, driver, crash, and vehicle characteristics, were **59% lower for children aged 4 to 7 years in belt-positioning boosters than in seat belts** (odds ratio, 0.41; 95% confidence interval, 0.20-0.86). Children in belt-positioning booster seats had no injuries to the abdomen, neck/spine/neck, or lower extremities, while children in seat belts alone had injuries to all body regions. **CONCLUSION:** Belt-positioning booster seats were associated with added safety benefits compared with seat belts to children through age 7 years, including reduction of injuries classically associated with improper seat belt fit in children.

Publication Types: Research Support, Non-U.S. Gov't PMID: 12783914 [PubMed - indexed for MEDLINE]



<http://www.chop.edu/>

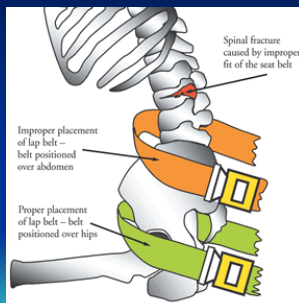
A belt-positioning booster seat raises your child up so that your vehicle's lap-shoulder belt is properly positioned across your child's chest and hips.

[Partners for Child Passenger Safety](#) has shown that the use of belt-positioning booster seats lowers the risk of injury to children by nearly 60 percent compared to the use of seat belts alone.

## seat belt syndrome

A lap belt should be as snug as possible and at least touching the upper thighs. In this position the crash forces will be loaded on the hips. If the lap belt is too loose, the occupant can "submarine" under the lap belt.

In a crash, seat belt syndrome occurs if a lap belt is worn over or rides up on the abdomen rather than the hipbones causing injuries to the lower spine and organs such as spleen, liver and intestines.



## How Safety Belts Prevent Injury

1. Prevent ejection
2. Load crash forces on the strongest parts of the body
3. Spread crash forces over a wide area of the body
4. Allow the body to slow down gradually
5. Protect the head, neck, and spinal column



## CIREN Crash Data Seattle0906

## Community CPS Check-Ups



## Free Child Passenger Inspection Sites at your Anchorage Fire Dept 267-5045

Station 1  
122 E. 4th Ave.  
(4th & Barrow)

Station 3  
1100 Airport Heights Rd.

Station 5  
Spenard & McRae

Station 7  
Jewel Lake & W. 88th

Station 8  
6151 O'Malley Rd

Station 9  
1148 Huffman Rd Station 10  
Top of Rabbit Creek Rd.

Station 12  
New Seward & Dimond

Station 15  
11301 Southport Dr.

Station 4  
Tudor & McInnes

Station 6  
DeBarr & Patterson

Station 11  
Bottom of Eagle River Rd.

Station 14  
4501 Campbell Airstrip Rd.

## Alaska Injury Prevention Center



3701 E. Tudor Rd.,  
Suite 105  
Anchorage, AK  
99507  
907-929-3939

Monday - Friday 9 a.m.  
to 2 p.m.

## CPS Resources

**NHTSA**  
**Contact Info**  
1-888-327-4236



*Safe Kids Alaska*  
*Sara-Penisten-Hurd*  
261-3194

AIPC  
Peggy Hayashi  
561-3939

State of AK, DPH-IPEMS  
Gordon Glaser 269-3433

## Four Key Safety Points

- Restrain your child on **every trip, every time.**
- Keep your child in the **back seat.**
- Use the **best safety restraint** for your child's size.
- Use the child safety seats and belts **correctly.**

