

Protecting Booster Age Children

Measuring Child Passenger Safety Efforts in a High Risk Population

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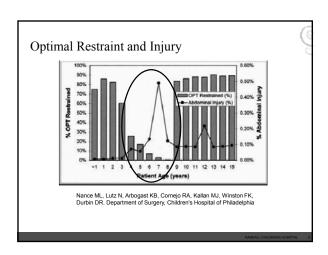
Objectives:

- Explain rates of appropriate restraint use among booster age children (typically 4-12)
- Explain car seat inspection usage rates in booster age children
- Identify real world consequences of improper belt fit
- Learn two ways to help parents make better choices (note, not BEST choices)

Background:

- Motor vehicle crashes are the leading cause of unintentional death and disability among children 4 years to 12 years of age in the United States.
- The occupant-related injury rate for 4 to 12 year olds was nearly TWICE that of children younger than 4 years old (317 per 100,000 children vs. 171 per 100,000 children younger than age 4)
- Booster seats have been shown to reduce the risk of serious injury by 45% in children aged 4-8 when compared with seat belt use alone.

How Are Kids Riding? Restraint use for children 4-7 National Survey on the Use of Booster Seats 2011 vs. 2013 100% 20% 40% 47% 48% 20% 25% 24% 10% 5% Car Seat Booster Seat Seat Belt Unrestrained



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The discrepancies in injury rates by age may be explained by lower observed rates of booster seat use in 4-7 year olds (41% to 47%) compared to the observed rates of car seat use for younger children (90% in children under age one and 83% in children 1 to 3)

> As the child ages and becomes MORE FRAGILE (ie- high risk of injury) we observe a significant <u>reduction</u> in appropriate restraint use.

Question:

With the high risk of injury from motor vehicle crashes in this particular age group, was the field of occupant protection focusing efforts on booster age children?



How Are We Doing??

We conducted an analysis of child passenger safety seat checklist forms from two Safe Kids coalitions in Michigan (2013) to identify restraint type upon arrival to car seat check events

		Overall N=4,435		Coalition 1 N=1,287		tion 2 ,148	p-value
Child Age Category	N	%	N	%	N	%	P<0.001
Unborn	1,028	23.2	387	30.7	641	20.4	
Less than 1 year	1,173	26.4	243	18.9	930	29.4	
1 to 3 years	1,417	31.9	387	30.1	1030	32.7	
4 to 7 years	643	14.5	213	16.5	430	13.7	
8 years and older	174	3.9	57	4.4	117	3.7	
Restraint on Arrival							P<0.001
Rear-Facing Carrier	1,788	40.3	480	37.3	1308	41.5	
Rear-Facing Convertible	454	10.2	134	10.4	320	10.2	
Forward-Facing	858	19.3	262	20.4	596	18.9	
Belt Positioning Booster	481	(10.8)	145	11.3	336	10.7	
Seat Belt	241	5.4	52	4.0	189	6.0	
No Restraint	613	13.8	214	16.6	399	12.7	

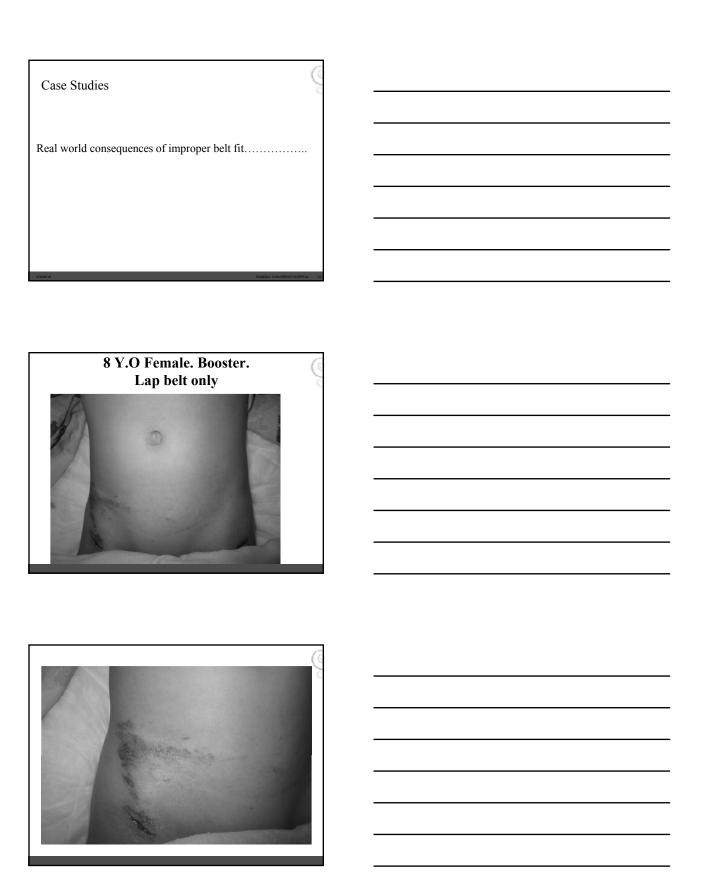
 Kroeker, et al. Car seat inspection among children older than 3 years: using data to drive practice in child passenger safety. J Trauma Acute Care Surg. 2015;79: S48YS54.

Study Revealed:

- Child safety seats for infants and young children were more commonly inspected than booster seats
 - > rear-facing carrier (40.3%)
 - > rear-facing convertible (10.2%)
 - > forward-facing (19.3%)
 - > booster seat (10.8%)
- Children age 4 and above were found to be in a sub-optimal restraint at least 30% of the time (defined as seatbelt or no restraint)
- Booster age children were more likely to have an inspection done at a one time event rather than an inspection station.

Conclusions

- Technician interactions with parents of older children may require more parental education and support of parental motivation for prolonged restraint use and less emphasis on the technical aspects of restraint installation.
- We have yet to understand how long behavior change lasts after an inspection.
 We do not know if the inspection continues to influence parental decisions surrounding premature transition to a booster seat or the vehicle seat.
- Technicians may benefit from skill development in areas of health behavior and health education in order to better understand parental choice surrounding booster seat use.



4 Y.O Male. Booster



4 Y.O Male. Booster



4 Y.O Male. Questionable Booster









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How Can We Motivate Parents?

NO

- Jargon (buttock-popliteal length, intercostal distance, clavicle, retractor, abdominal trauma, anterior superior iliac spine engagement, transition, projectile, after-market product)
- "This literally takes two minutes of your time. Isn't it worth it?"
- "This is easy", "This is important", "You should do this"
- "I can't talk to you about moving your child to a booster seat since it isn't best practice and they still fit in their harness seat"
- "Do you even care what happens to your child??"
- "Just hold that coffee cup over your child's face and drop it. That's what will happen if it becomes a projectile in a crash"
- Fear appeal- does <u>not</u> work for long term health behavior changes

How Can We Motivate Parents?

YES

- Plain language
- Collaborative
- Parent focused
- Compassionate
- LESS is more

Take Home:

- Child passenger safety efforts were not aligned with injury data and revealed an area for growth in child passenger safety programs.
- Low proportions of parents use car seat inspection stations for children in the booster seat age group. Parents of booster age children were more likely to visit an event.
- Evaluation of data from seat check forms exposed low rates of safety seat checks for booster age children.
- Technicians may benefit from evaluating their own programs to identify efforts in addressing this group of children that are suboptimally restrained.

Things to Consider.....

- Asking IF a child wears a seat belt does not get at the problem of incorrect belt fit
- Bigger and older DOES NOT equal safer. It equals LESS SAFE until the child can fit a seatbelt.
- Four to eight year old children are at TWICE the risk of injury due to improper restraint, yet these seat checks make up only 10% of our effort......



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THANK YOU!!