

Risks of Infant and Child Car Seats: Development of a Caregiver Guide

Christina M. Slifer, Ph.D.
BSN Candidate

Faculty Mentor: Rachel A. Joseph, Ph.D., CCRN



Objectives



- Define positional asphyxiation as it relates to car seat incline and child containment
- Highlight that perceived “comfort” measures when seated outside of vehicles (loosened straps, partially buckled clips) pose great risk of positional asphyxiation and strangulation
- List three opportunities whereby nurses can assess parent/guardian knowledge of car seat risks, proper vs. improper use, and safe usage

A CSS Tragedy



Child Safety Seats (CSS)



CPSC-reported deaths: April 2004 – December 2008

Table I. Hazards of sitting and carrying devices for children 2 years and younger (gender and age ranges for each device)

Device	No.	Male	Female	Unknown	% of total in study	Mean age at death, mo	Median age at death, mo	Age range
Car seats	31	14	16	1	66	9.7	9	1-24 mo
Slings	5	3	2	0	11	2	1	10 d to 5 mo
Swings	4	3	1	0	9	3.6	2.9	18 d to 8 mo
Bouncers	4	3	1	0	9	2.5	2.5	2-3 mo
Strollers	3	2	1	0	6	5.7	7	2-8 mo
Total	47	25	21	1		7.5	7	



Table reference: Batra, E.K., Midgett, J.D & Moon, R.Y. (2015). Hazards associated with sitting and carrying devices for children two years and younger. *The Journal of Pediatrics*, 167, 183-187.



Infant CSS: Safety Tips

Suitable CSS or child safety bed	Safest possible location in vehicle
Direction CSS faces	Correct installation (angle, straps, belt/LATCH)
Education/Technician verification	Attention to recalls



Infant CSS: Common Mistakes



Inappropriate CSS	Angle of incline too upright	Using aftermarket products
Straps too loose	Shoulder and/or crotch strap at wrong level	Straps incompletely buckled
Chest clip too high or low	Front-facing too soon	Puffy coats
Allowing child to sleep in CSS outside of car unsupervised	Placing CSS on couch, bed, countertop, etc.	Using expired, recalled CSS or CSS in MVC



Safe Car Seat Use Out of the Car

Always
Buckle
Correctly
Do NOT put on: 
Either put in  or on
Floor

Indicates risk of:  Strangulation, Asphyxiation and  Head Injury



Dedicated in memory of Shepard Dood #shepardswatchOK

Caregiver Guide Envisioned



General features:

- Targeting new parents in hospital and through pediatrician's office
- 7th grade reading level
- Cautions parents of sentinel events from positional asphyxiation
- Images of correct and incorrect child restraint: straps, buckles, prolonged (unsupervised) containment, CSS placed on high or insecure surfaces

Key information:

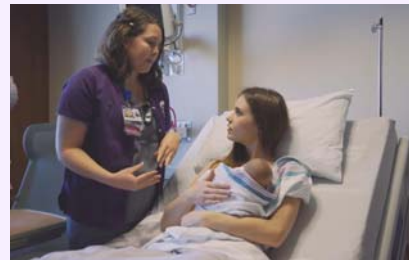
- Types of CSS
- Rear vs. Forward facing and typical weight limits

Helpful resources:

- List of local car seat inspection sites
- Links to websites with helpful information about safe CSS use
- <https://www.safekids.org/car-seat> and <http://thecarseatlady.com/about/>
- Link to 8 minute video detailing how to safely restrain a newborn in a rear-facing CSS:
- <http://thecarseatlady.com/buckling-baby-into-a-rear-facing-car-seat/>



Nurse's Role in Education and Assessment



Other Sitting and Carrying Devices



Table I. Hazards of sitting and carrying devices for children 2 years and younger (gender and age ranges for each device)

Device	No.	Male	Female	Unknown	% of total in study	Mean age at death, mo	Median age at death, mo	Age range
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Summary



- Define positional asphyxiation as it relates to car seat incline and child containment

Positional asphyxiation: when infants' and toddlers' heads fall forward in CSS and airways are occluded; DO NOT USE for routine sleep, unattended, or improperly

- Highlight that perceived "comfort" measures when seated outside of vehicles (loosened straps, partially buckled clips) pose great risk of positional asphyxiation and strangulation

Improperly tightened and fastened straps and clips increase the risks of position compromise and asphyxiation and strangulation

- List three opportunities whereby nurses can assess parent/guardian knowledge of car seat risks, proper vs. improper use, and safe usage

Frequent education and assessment are key to preventing these tragedies: during pregnancy, before discharge after birth, all pediatrician visits, school nursing

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Picture credits



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