


Car Seats and Infant Sleep: Safety, Science, and Soothing




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 NHSTA Region 2 Child Passenger Safety Conference

Objectives

- Identify the American Academy of Pediatrics Safe Sleep Guidelines for infants, birth to age one;
- Describe why parents report that infants sleep better in a car seat than in a crib;
- Review the risk factors of infants sleeping in car seats;
- Explain how infant sleep patterns develop biologically;
- Implement the strategies reviewed with the families you support, so that families have a better understanding of infant sleep and safety.

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American Academy of Pediatrics

American Academy of Pediatrics  Safe Sleep Guidelines (October 2011)

- ❖ Back to sleep for every sleep
- ❖ Use a firm sleep surface
- ❖ Room-sharing without bed-sharing is recommended
- ❖ Keep soft objects and loose bedding out of the crib
- ❖ Avoid overheating
- ❖ Supervised, awake tummy time is recommended
- ❖ Media and manufacturers should follow safe-sleep guidelines in their messaging and advertising.

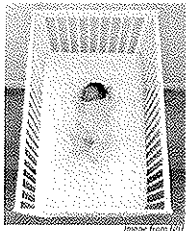


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SIDS- the Triple Risk Model

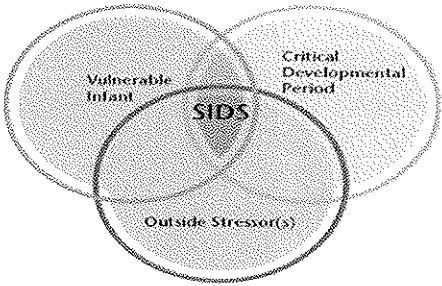




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American Academy of Pediatrics

American Academy of Pediatrics  www.aap.org

"Car seats and other sitting devices are not recommended for routine sleep at home or in the hospital, particularly for young infants."

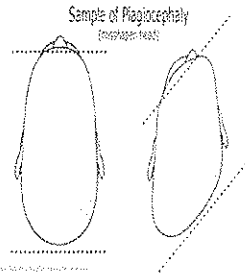
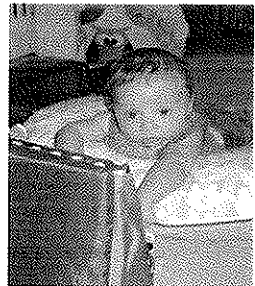


- ❖ Average young infant spends 5.7 hours/day in a car seat or similar sitting device
- ❖ Multiple concerns about using sitting devices as a usual infant sleep location:
 - ❖ gastroesophageal reflux
 - ❖ positional plagiocephaly
 - ❖ upper airway obstruction and oxygen desaturation
 - ❖ injuries from falls resulting from car seats being placed on elevated surfaces

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Positional Plagiocephaly

Sample of Plagiocephaly (onepage=best)

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Upper Airway Obstruction and Oxygen Desaturation

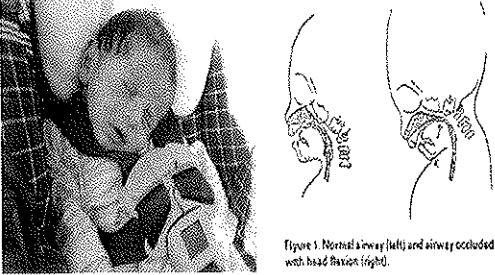



Figure 1. Normal airway (left) and airway occluded with head flexion (right).

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Images from the car seat baby

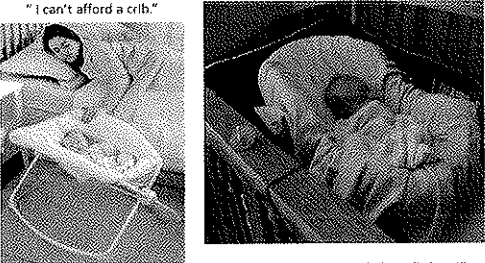
Injuries from Falls



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Why are parents sleeping their babies in car seats?

"I can't afford a crib."




"It's the only place my baby will sleep!"

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Why are parents sleeping their babies in car seats?

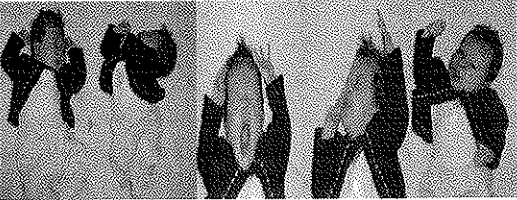
- ❖ Grandparents/ other caregivers aren't aware of safety recommendations for sleep, or car seats
- ❖ According to the 2011 American Community Survey, an estimated 2.7 million grandparents are the primary caregivers to their grandchildren
 - ❖ When asked, "What is the best position for a baby to sleep in?" 33 percent of respondents chose "on the stomach," 23 percent, "on the side," and 43.8 percent, "the back."
 - ❖ When asked about correct car seat positioning, 24.5 percent responded that a 27 pound, 9 month-old child should be facing forward, and yet the AAP recommends that children remain in a rear-facing car seat until age 2.



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Why do babies sleep "better" in car seats than in cribs?

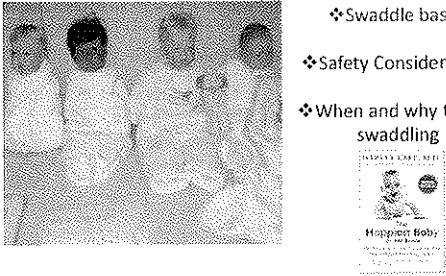
- ❖ Young babies have the moro reflex. It causes them to startle and wake when in a light sleep cycle.
- ❖ Young babies do not have REM paralysis, so they move while they are sleeping. These movements can wake them, too.
- ❖ Feels like being held.



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Swaddling helps reduce the moro reflex and movement

- ❖ Swaddle basics
- ❖ Safety Considerations
- ❖ When and why to stop swaddling




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Infant Sleep Biology and Expectations

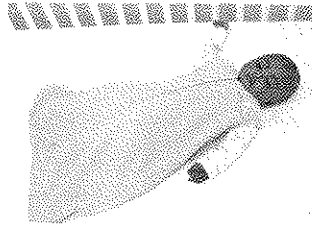
Infants are totally dependent on their caregivers to meet their needs.

- ❖ Multiple night feedings are to be expected in the first six months; and many babies will keep one night feed until 9-12 months old.
- ❖ Infants are born with some well-developed senses - especially sight, hearing and touch. Infants thrive on being held and touched.
- ❖ Infants have underdeveloped physiological systems - body temperature, breathing and heart rate control.



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“Sleeping through the night.” What does it *really* mean?



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Infant Sleep Biology and Expectations

- ❖ There are two sleep drives: the circadian rhythm and sleep pressure.
- ❖ In the first few months, a baby's sleep pattern is mostly dominated by the sleep pressure.
- ❖ Around four months old, the circadian rhythm starts to mature.
- ❖ “Sleep begets sleep.”
- ❖ Nap timing is important so that the circadian rhythm and sleep pressure are working together.

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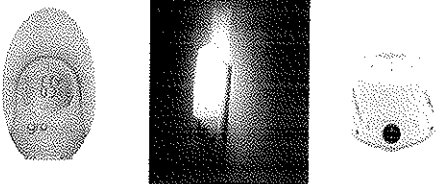
Infant Sleep Biology and Expectations

- ❖ Normal sleep in a mature sleeper starts with deep sleep during the first third of the night. After the first third of the night, lighter stages of sleep become dominant. This means babies are more likely to wake as the night goes on.
- ❖ At night, an infant's sleep cycles occur every 60-90 minutes and at the end of each cycle there is a natural brief wake up.
- ❖ REM sleep is when dreaming happens and it typically dominates the early morning hours. Babies under a year old make a lot of noise and often move a lot during REM sleep.
- ❖ Daytime sleep is made up of mostly REM sleep in a baby. Naps can be a challenge for baby to initiate on his own; and it can be hard for a baby to stay asleep beyond 30-45 minutes for naps, which is the time when the natural wake up happens during a nap.

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Infant Sleep Environment

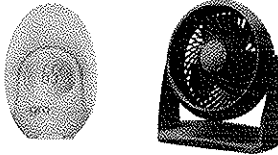
The physical environment can impact sleep.
Think “cool, dark, quiet.”



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Infant Sleep Environment

Cooler is better than warmer!



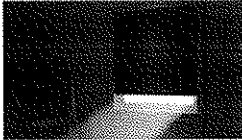
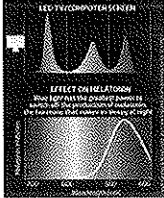
- ❖ Studies vary, but roughly between 65-75 degrees.
- ❖ Our bodies need to drop temperatures to stay in deep sleep.
- ❖ Reduce the risk of overheating, SIDS, suffocation.
- ❖ Room temperature *and* what baby is wearing matters.
- ❖ Keep socks on baby. Warm feet promote sleep!

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Infant Sleep Environment

Dark and light reinforce circadian rhythm.




- ❖ Darkness from target bedtime to target wake-time.
- ❖ Light during the day can make naps harder as babies get older, since they want to play and are easily stimulated.
- ❖ Nightlights- make sure they are dim, warm colors.

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Infant Sleep Environment

Quiet... well, actually, not entirely quiet!

- ❖ Constant and consistent- why does this matter? (*no waves, birds chirping, music*)
- ❖ White noise does not induce sleep; but it protects sleep!
- ❖ Fans and humidifiers can work and also provide health benefits.
- ❖ Any type of white noise should not be next to baby's head, and not too loud. Most effective if half-way between baby and where sound is.

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Strategies to Promote and Protect Infant Sleep

1. Safety first- know the AAP guidelines.
2. Swaddle and try the other "the Fourth Trimester" techniques.
3. Understand the biology behind sleep- limit periods of wakefulness for young babies.
4. Appreciate baby's developmental stage.
5. Create an environment conducive to sleep- cool, dark, quiet!
6. Follow your heart when parenting.


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Resources- Infant Sleep Safety

American Academy of Pediatrics- www.aap.org

- ❖ *A Parent's Guide to Safe Sleep*
<http://www.healthychildren.org/English/ages-stages/baby/sleep/Pages/A-Parents-Guide-to-Safe-Sleep.aspx>
- ❖ *SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment*; PEDIATRICS, Vol. 128 No. 5, November 1, 2011.
<http://pediatrics.aappublications.org/content/128/5/e1341.full?sid=bd9574fb-4575-4d35-a46e-a63394e68331>

National Institute of Child Health and Human Development-
<http://www.nichd.nih.gov/>



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Resources- Sleep Techniques

Popular Sleep Books:

For families seeking approaches that bring them in and out of the room intervals, progressive waiting:

- ❖ *Healthy Sleep Habits, Happy Child* by Marc Weissbluth
- ❖ *Solve Your Child's Sleep Problems* by Dr. Ferber

For families seeking approaches that keep them in the infant's room and doing soothing/ sleep techniques either crib-side, across the room, or by picking them up:

- ❖ *The No-Cry Sleep Solution: Gentle Ways to Help Your Baby Sleep Through the Night* by Elizabeth Pantley
- ❖ *The Sleep Lady's Good Night, Sleep Tight* by Kim West

For families who are co-sleeping and want to continue co-sleeping:

- ❖ *Sleeping with Your Baby: A Parent's Guide to Co-Sleeping* by Dr. James McKenna
- ❖ *The Baby Sleep Book: The Complete Guide to a Good Night's Rest for the Whole Family* by Dr. Sears

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Resources- Child Development

- ❖ *The Happiest Baby on the Block*, Dr. Harvey Karp
- ❖ *Touchpoints, Birth to Three: Your Child's Emotional and Behavioral Development* by Dr. Brazelton. Also Brazelton's website:
<http://www.touchpoints.org/>
- ❖ Zero to Three: <http://zerotothree.org/>; in particular the charts on developmental milestones: <http://www.zerotothree.org/about-us/areas-of-expertise/free-parent-brochures-and-guides/age-based-handouts.html>
- ❖ *What's Going On in There? How the Brain and Mind Develop in the First Five Years* by Lise Eliot

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