

# **New SIDS Risk Reduction Recommendations from the American Academy of Pediatrics**

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**Indiana Perinatal Network: Safe Sleep  
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# Objectives

- **Review the AAP policy statement process**
- **Review the AAP SIDS risk reduction recommendations with supporting evidence**



# The Process

- Task Force on SIDS decides to reaffirm, revise, or retire the policy statement every 5 years
- Meetings, conference calls, and emails
- Identify issues to consider, with particular attention to new evidence and emerging issues
- Invite outside expert opinions (“white papers”); on bed sharing this time

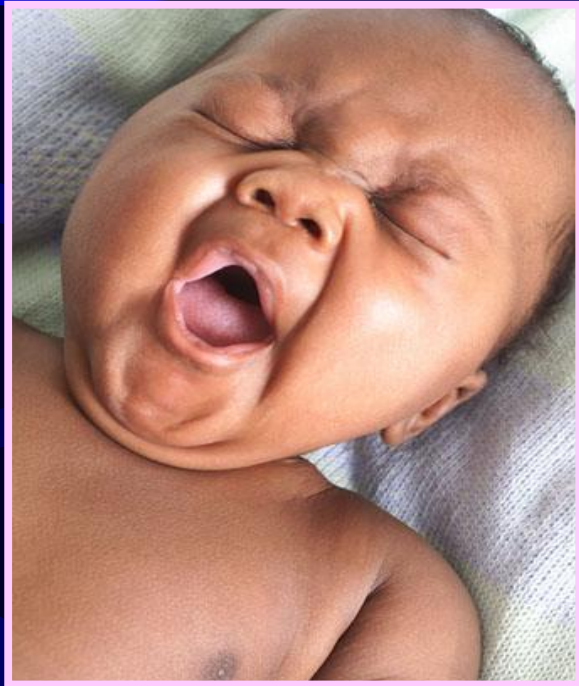
## The Process (Cont'd)

- Write numerous drafts
- Send out to all other AAP committees for comment and approval
- Repeat process
- AAP Executive Board approves and makes final decisions if differences identified

# Issues Considered

- Diagnostic coding shifts
- Sleep position: side versus supine
- Bedding
- Bed sharing
- Pacifiers
- Secondary caregivers

# More Issues Considered



- Home monitors
- Immunizations and SIDS
- Breastfeeding and SIDS  
(later addition)
- Plagiocephaly
- Positioning in NICU and  
well baby nursery

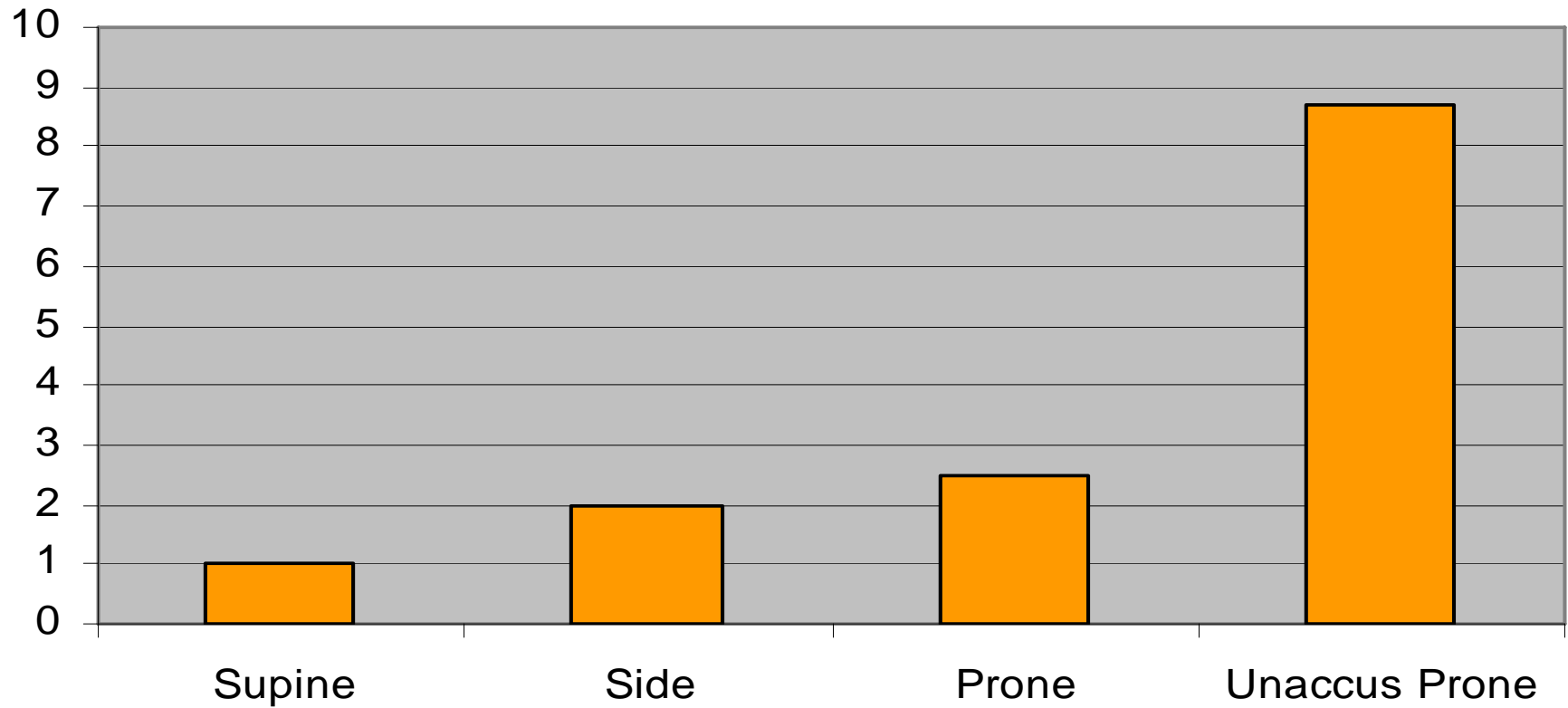
# Sleep Position: Side vs. Supine?



## Side vs. Supine

- 2000 AAP recommendation: back preferred, but side better than prone
- With decreased prone sleeping, contribution of side to SIDS has increased
- Recent studies show that risk associated with side (aOR 2.0) and prone (aOR 2.6) are similar (Li DK, 2003)
- Unaccustomed prone may contribute to risk of side position

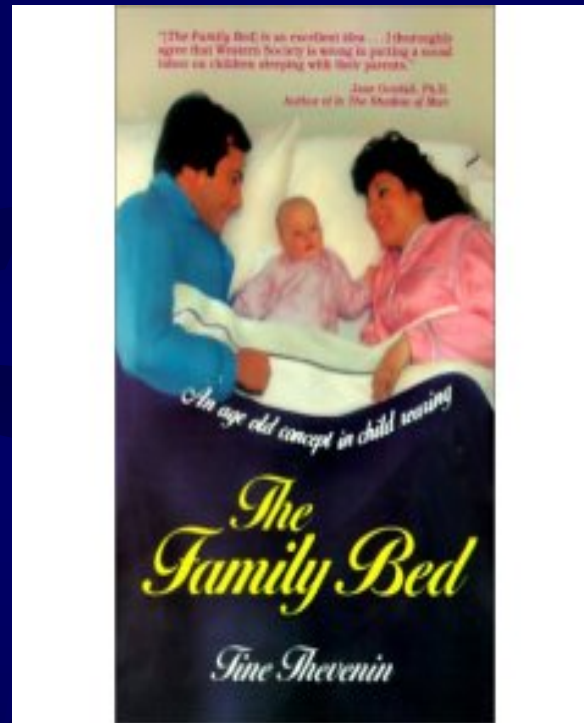
# Risk of Unaccustomed Prone



## Recommendation

Infants should be placed to sleep in a supine position for every sleep. Side sleeping is not as safe as supine and is not advised.

# Infant Bed Sharing and SIDS



Definition of Bed sharing: sleeping with an infant on the same sleep surface

# Bed Sharing - Advantages

- Proponents of bed sharing cite:
  - Facilitation of breastfeeding
  - Enhancement of parent-child bonding
  - Increased arousals of parent and baby during sleep
- Common practice in many cultures
  - Fear that something bad will happen to sleeping baby if not with the parent
  - “Crib death” occurs only in cribs

# Bed Sharing Has Become More Popular

- Renewed popularity of breastfeeding
- Bed sharing all night long has more than doubled in past 10 years from 6% to 13% (Willinger M, 2003, National Infant Sleep Position Survey)
- 45% spend at least some time bed sharing in prior 2 weeks
- Higher numbers in low SES, certain ethnic groups (African Americans, Latinos) - more than 50% may be bed sharing all night long

# Problems with Bed Sharing

- Overheating
- Soft bedding, pillows, comforters
- No safety standards for adult mattresses
- Risk of entrapment

# Infant Bed Sharing and SIDS Risk

- Earlier studies showed increased risk associated primarily with bed sharing among smoking mothers
- More recently, two European studies showed increased risk for younger infants even among non-smoking mothers
  - ECAS (Carpenter et al, 2004) – under 8 weeks
  - Scotland (Tappin et al, 2005) – under 11 weeks
- Germany (Vennemann et al, 2005) –independent of age, trend towards interaction with smoking but not significant

# Infant Bed Sharing and SIDS Risk (Cont'd)

- Other factors that increase risk of bed sharing: multiple bed sharers, bed sharing with other children, parent consumed alcohol or is overtired, infant between both parents, or on couches
- Returning the infant to his/her own crib is not associated with increased risk
- No studies have ever shown a protective effect of bed sharing on SIDS



Not a safe sleeping arrangement!

# Infant-Parent Room Sharing and SIDS Risk

- Room sharing with parents without bed sharing is associated with a lower risk of SIDS than sleeping alone in a separate room or in same room with bed sharing
  - New Zealand (Mitchell, 1995)
  - England (Blair, 1999)
  - ECAS (Carpenter, 2004)
  - Scotland (Tappin, 2005)

# Bed Sharing and Sleep Position

- Lower percentage of bed sharing deaths are found prone, compared with those who die on a separate sleep surface
- Is there a different mechanism for SIDS while bed sharing?

# Recommendation

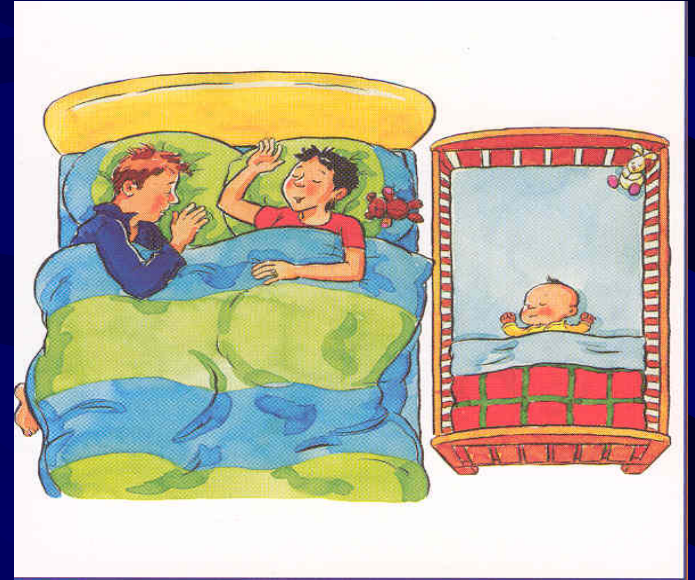
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- A separate but proximate sleeping environment is recommended.
  - Safety approved crib, bassinet, or cradle
  - Safety of “cosleepers” not yet established
  - Can bring baby to bed for nursing or comforting, but return to own crib when parent ready to go to sleep
  - No bed sharing when parent excessively tired, using substances that could impair alertness
  - No bed sharing with other children
  - No sleeping on couch or armchair



# A separate but proximate sleep environment is recommended

The Task Force recommends that the infant's crib or bassinet be placed in the parents' bedroom, which, when placed close to their bed, will allow for more convenient breastfeeding and contact.



# Other Recommendations Regarding Bed Sharing

- Australia (Byard): Place crib next to parents' bed within arm's reach. (1994)
- New Zealand (Mitchell and Thompson): in first year of life infants should share bedroom with parents in crib beside the parents' bed; return baby to crib when parents ready for sleep after nursing or comforting. (1995)
- ECAS study: infants safest sleeping in own crib in parents' room. (2004)
- UK Department of Health: safest place for infants up to 8 months to sleep in a crib in parents' room. (2004)
- Canadian Paediatric Society: infants should sleep in cribs for the first year of life, under all circumstances. Parents should be aware that room-sharing is protective against SIDS and is a safer alternative to bed sharing. Hospitals should not allow mothers to sleep in the same bed with their newborns. (2004)
- Others disagree—believe the evidence is inconclusive, especially for nonsmoking and breastfeeding mothers



## Baby Bunk



## Co-Sleepers



# Pacifiers



# Pacifier Use Today

- In the U.S, estimates of pacifier use range from 36% to 74%
- Equivalent or higher estimates in other countries

## Pacifiers and SIDS

Numerous studies have demonstrated an association between SIDS and pacifier use.



# Usual Pacifier Use and SIDS Risk

Figure 1: Usual Pacifier Use and Risk of SIDS

## A. Univariate Analyses

Source	Odds Ratio
Carpenter et al, 2004	0.88 (0.72-1.06)
Fleming et al, 1999	1.03 (0.78-1.36)
L'Hoir et al, 1999	0.19 (0.09-0.36)
McGarvey et al, 2004	1.95 (1.25-3.06)
Mitchell et al, 1993	0.76 (0.57-1.02)
<b>Summary Odds Ratio</b>	<b>0.90 (0.79-1.03)</b>

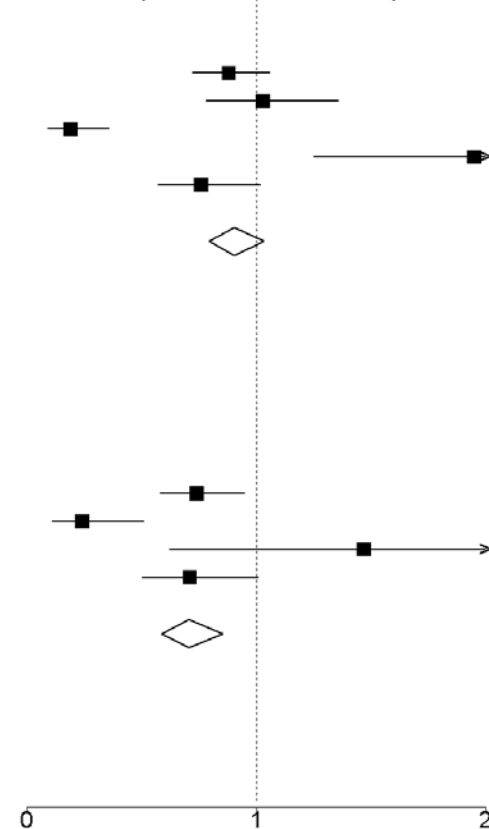
Test for homogeneity  $P < 0.001$   
 Test for overall effect  $P = 0.069$

## B. Multivariate Analyses

Source	Odds Ratio
Carpenter et al, 2004	0.74 (0.58-0.95)
L'Hoir et al, 1999	0.24 (0.11-0.51)
McGarvey et al, 2004	1.47 (0.62-3.50)
Mitchell et al, 1993	0.71 (0.50-1.01)
<b>Summary Odds Ratio</b>	<b>0.71 (0.59-0.85)</b>

Test for homogeneity  $P = 0.016$   
 Test for overall effect  $P < 0.001$

Favors usual pacifier use      Favors no pacifier use



# Last/Referent Sleep and SIDS Risk

Figure 2: Last/Referent Sleep Pacifier Use and Risk of SIDS

## A. Univariate Analyses

Source	Odds Ratio
Carpenter et al 2004	0.47 (0.34-0.64)
Fleming et al 1999	0.62 (0.46-0.83)
Hauck et al 2003	0.33 (0.21-0.54)
L'Hoir et al 1999	0.16 (0.07-0.36)
McGarvey et al 2004	0.34 (0.22-0.50)
Mitchell et al 1993	0.44 (0.26-0.73)
Tappin et al 2002*	0.55 (0.32-0.95)
Tappin et al 2002†	0.91 (0.47-1.76)

Summary Odds Ratio 0.47 (0.40-0.55)

Test for homogeneity P = 0.010

Test for overall effect P < 0.001

## B. Multivariate Analyses

Source	Odds Ratio
Carpenter et al 2004	0.44 (0.29-0.68)
Fleming et al 1999	0.41 (0.22-0.77)
Hauck et al 2003	0.34 (0.17-0.71)
L'Hoir et al 1999	0.05 (0.01-0.29)
McGarvey et al 2004	0.10 (0.03-0.31)
Mitchell et al 1993	0.43 (0.24-0.78)
Tappin et al 2002*	0.59 (0.30-1.17)

Summary Odds Ratio 0.39 (0.31-0.50)

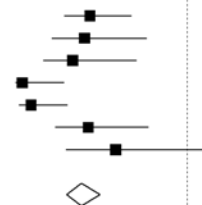
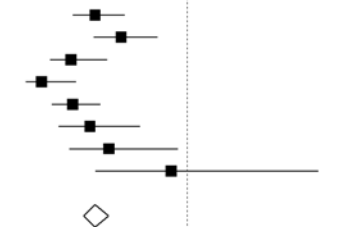
Test for homogeneity P = 0.040

Test for overall effect P < 0.001

\* "A little" pacifier use

† "A lot" pacifier use

Favors pacifier use      Favors no pacifier use



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# Other Studies Not Included in Meta-Analysis: Last Sleep Pacifier Use

- California: aOR 0.08, 95% CI 0.03-0.21  
(Li DK, 2005)
- Germany: aOR 0.39, 95% CI 0.25-0.59  
(Vennemann M et al, 2005)

# Possible Mechanisms to Explain Apparent Protective Effect

- Focus on arousal, airway patency, and sleep position
- Franco et al: decreased arousal threshold (increased arousal) in infants who usually used a pacifier; also cardiac autonomic control affected
- Pacifiers dislodge within 15 minutes (Weiss and Kerbl) to 1 hour (Franco et al) of sleep
- Dislodgement might contribute to more sleep disruption and easier arousability. This may explain why usual use not as protective as last sleep use.

# Concerns About Pacifiers

- Breastfeeding
  - Observational studies: consistent relationship between pacifier use and decreased BF duration
  - Well-designed trials:
    - 2 found no association among term infants,
    - 1 found no association among preterm infants
    - 1 found slightly decreased BF duration at one month if pacifier introduced in first week of life; no difference if pacifiers introduced after 1 month

## Concerns About Pacifiers (Cont'd)

- Dental malocclusions: increase in some types, but differences disappear after cessation
  - AAPD Policy Statement: Non-nutritive sucking is normal in infants and young children, unlikely to cause long-term problems if stopped by age of 3 years

## Concerns About Pacifiers (Cont'd)

- Otitis media: 1.2-2.0 fold increased risk , but OM generally lower incidence in first year of life, especially < 6 months when sucking need greatest and SIDS risk greatest
- Gastrointestinal infections more common
- Increased oral colonization with Candida

## Other Benefits of Pacifiers

- Management of discomfort (reduction of crying during painful procedures)
- Preterm infants: reduced length of hospital stay, no adverse outcomes (review of 19 studies)

# Recommendations Regarding Pacifiers

- Consider offering a pacifier at nap time and bedtime.
- For breastfed infants, delay pacifier introduction until 1 month of age to ensure that breastfeeding is firmly established.

# Other Recommendations About Pacifier Use

- It should not be coated in any sweet solution.
- It should not be reinserted once the infant falls asleep.
- Infants who refuse a pacifier should not be forced to take one.
- Keep pacifiers clean and replace regularly.

# Breastfeeding and SIDS

- Physiologic sleep studies show that breastfeeding infants are more easily aroused during sleep, which may explain a possible protective effect.
- Epidemiologic studies inconsistent in demonstrating protection against SIDS.
- Chen (2004): breastfeeding associated with decreased postneonatal infant deaths overall, but not SIDS.



## Breastfeeding and SIDS (Cont'd)

- Many studies show protective effect of breastfeeding on univariate analysis but not when confounding factors taken into account
  - Suggests other factors associated with breastfeeding are protective
  - Breastfeeding mothers tend to be nonsmokers

## Recommendation

Breastfeeding is beneficial and should be promoted for many reasons, but the task force believes that the evidence is insufficient to recommend breastfeeding as a strategy to reduce SIDS.

# Apnea Monitors

- CHIME study: monitors should not be used as a means to prevent SIDS
- May be useful in some infants who have had ALTE

## Recommendation

Do not use home monitors as a strategy to reduce the risk of SIDS.

# Positioning in NICU

- Original Back to Sleep campaign recommendation excluded “premature infants with respiratory distress”.
- Subsequent statements and current statement removed preterm infant as an exception, because of increased risk of SIDS among premature infants.
- Premature infants more likely to be placed prone after hospital discharge. Possible explanations:
  - Frequently placed prone in NICU
  - Babies and caretakers used to prone

## Recommendation

Neonatologists, neonatal nurses, and other care professionals in NICUs should be more vigilant about endorsing and modeling supine sleep position [risk-reduction recommendations] significantly before the infant's anticipated discharge.

# Positioning in Newborn Nurseries

- Infants in newborn nurseries often placed on side
  - Impression that they have to clear amniotic fluid from airways, less likely to aspirate
  - No evidence that fluid will be cleared more easily in side position
  - No compelling evidence that sleep position is related to SIDS during immediate neonatal period
- Parents tend to copy practices that they observe in hospital, thus may be more likely to use side position at home



## Recommendation

If there are concerns about possible choking during the first few hours after birth, hospital personnel can place infants on sides, propped up against the bassinet for stability. However, infants should be placed on their backs as soon as possible.

## Other Recommendations

- Use a firm sleep surface
- Keep soft objects and loose bedding out of the crib
- Do not smoke during pregnancy; avoid second-hand smoke exposure of the infant
- Avoid overheating
- Avoid commercial devices marketed to reduce the risk of SIDS

## Other Recommendations (Cont'd)

- Avoid development of positional plagiocephaly
  - Encourage “tummy time” when infant is awake and observed
  - Avoid excessive time in car seat carriers and bouncers
  - Alter head position during sleep
  - Refer infants with plagiocephaly when conservative measures ineffective
  - Study from NZ showed the incidence of plagiocephaly in healthy normal children decreased spontaneously from 20% at 8 months to 3% at 24 months (Hutchison, 2004)
- Continue the Back to Sleep campaign
  - Secondary caretakers
  - African-American and American Indian/Alaska Native populations

# Conclusions

- **SIDS rates have declined by 50% or more, but rates are now leveling off**
- **Addressing other risk and protective factors may provide opportunity to reduce the incidence of SIDS further**



# Task Force on Sudden Infant Death Syndrome

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Thank You!

