Breastfeeding & Bedsharing - AAP Guidelines on Safe Sleep
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Disclosure

• I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider of commercial services discussed in this CME activity.
• I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.

Learning Objectives

1. Delineate components of the AAP Clinical Report: Safe Sleep and SSC in the Neonatal Period for the Healthy Newborn and the Newly Released SIDS and other Sleep Related Deaths Policy and Technical Report that support keeping babies safe
2. Identify issues from each statement that affect the breastfeeding dyad
3. Define and adopt practices that support simultaneous implementation of the Ten Steps to Successful Breastfeeding and safe sleep guidelines
Background

• 3500 deaths annually
• SUID (SUDI) includes SIDS plus accidental suffocation and strangulation
• Back to Sleep Campaign and supine sleep led to most dramatic decline in SIDS/SUID from 1990 – early 2000’s
• Rates have not declined further since then
• SUID/SIDS remains leading cause of post-neonatal death (1 month- 1 year of age)
SUID Deaths 1995-2013

FIGURE 1


BF Disparities Continue to Exist

FIGURE 2

Percentage of mothers breastfeeding their infants, by race and Hispanic origin, 2011.
BF Disparities Continue to Exist

Strength of Recommendations Taxonomy (SORT)

Level of Evidence (LOE) ----- Strength of Recommendation

--Based on study design  --Based on quality of studies and consistency of evidence


SID and Other Sleep-Related Infant Deaths: Updated 2016 Recommendations for a Safe Infant Sleeping Environment
2016 SIDS Task Force Policy Statement

Level A Recommendations:
➢ Back to sleep for every sleep
➢ Use a firm sleep surface
➢ Breastfeeding is recommended
➢ Room-sharing: infant on separate sleep surface
➢ Keep soft objects and loose bedding out of the crib
➢ Avoid overheating
➢ Consider offering a pacifier at nap time and bedtime
➢ Avoid smoke exposure during pregnancy and after birth
➢ Health care providers should endorse and model safe sleep

Moon RY et al Pediatrics 2016

Updates to AAP Policy (non-Breastfeeding related)
• Reiterate supine position for every sleep
• Use of a firm mattress, avoidance of soft bedding, pillows, quilts, toys and other objects in the sleep environment, and avoidance of overheating
• Avoid smoking, alcohol, and drugs during pregnancy and after birth
• Adhere to immunization schedule
• Avoid devices marketed to reduce risk of SIDS such as monitors, wedges, devices or specific mattresses
• Swaddling does not reduce the risk of SIDS and in some cases may increase the risk

Theoretical Model
SIDS Policy and Breastfeeding

- Breastfeeding now #3 (after #1 - supine sleep and #2 - firm sleep surface) from #8
- Within #1 sleep position, skin to skin care is recommended for all mothers and newborns, regardless of feeding or delivery method...for at least an hour (reference to "Safe Sleep and SSC in the Neonatal Period for the Healthy Newborn")
- Focus on exclusive breastfeeding for 6 months
  - 70% reduction in risk
  - Any Breastfeeding still better than no breastfeeding

Breastfeeding Reduces Risk of SIDS

- Meta-analysis reviewed 288 studies 1966-2008; used 18 original case-control studies for meta-analysis

Exclusive Breastfeeding Reduces SIDS More

- Meta-analysis (reference to "Exclusive Breastfeeding Reduces SIDS by as much as 70%; duration matters too...")

Hauck F Pediatrics 2011
Evidence for skin to skin: Baby

• Skin to skin contact
  • More likely to have successful breastfeed with first feed
  • Greater stability of cardiorespiratory system
  • Higher blood glucose levels
  • Decreases pain in the newborn
  • Improves gastrointestinal adaptation
  • Leads to more restful sleep patterns, less crying and better growth


Evidence for Skin to Skin: Mother

• Decreases maternal stress and improves paternal perception of stress in the relationship with baby
• Depression scores and salivary cortisol levels lower over the first month among postpartum mothers providing SSC
• Enhances opportunity for early first breastfeed, which in turn leads to more readiness to breastfeed, organized suckling pattern, and more success in exclusive and overall breastfeeding


Duration of Skin-to-Skin Matters “Golden Hour”

<table>
<thead>
<tr>
<th>Variable</th>
<th>STS ≤ 60 min</th>
<th>STS &gt; 60 min</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STS Duration</td>
<td>N=18</td>
<td>N=61</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>51.1 ± 13.5</td>
<td>81.0 ± 14.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted mean salivary cortisol (ug/Dl)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 min</td>
<td>5.03 ± 0.46</td>
<td>3.94 ± 0.24</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>120 min</td>
<td>2.71 ± 0.40</td>
<td>2.08 ± 0.21</td>
<td></td>
</tr>
</tbody>
</table>

* Adjusted for time until STS started, cortisol at 1 min, umbilical artery pH, mode of delivery, condition of amniotic fluid, birth weight, length of first and second stage of labor (minutes)

What are the risks?

Hospitals should balance skin-to-skin contact with safe sleep policies
By Jay Goldsmith, MD, FAAP

- Sudden Postnatal Death
- Mothers sleepy
- Discontinuous observation
- Medications problematic
  - MgSO4
  - Narcotics
- Bed sharing denounced

Sudden Unexpected Postnatal Collapse (SUPC)

- Sudden collapse in previously vigorous spontaneously breathing newborn with five minute APGAR>8
- Gestational age >35 weeks
- Incidence 2.6-38/100,000

- One third occur in first 2 hours, 1/3 between 2 and 24 hours and final 1/3 between 1-7 days of life
- Another study suggests 73% occur in first 2 hours
Step 4 —Step by Step
1. Delivery of newborn (not just head)
2. Dry and stimulate for first breath/cry
3. Place skin to skin with cord attached (with option to milk cord), clamp after 1 minute or after placenta delivered
4. Continue to dry entire newborn except hands
5. Cover head and place pre-warmed blankets to cover body of baby on moms chest
6. Assess 1 and 5 minute Apgar
7. Replace wet blankets with dry warm blankets
8. +/- Cap for head
9. Assist and support to breastfeed
10. Monitor continuously

Feldman-Winter L, Goldsmith JP. Safe Sleep and Skin-to-Skin Care in the Neonatal Period for Healthy Term Newborns Pediatrics 2016
Suggestions for Rooming-in

1. Use patient safety contracts with focus on high risk situations
2. Monitor mothers according to risk assessment: 30 minutes during nighttime and early morning hours for higher risk dyads
3. Use fall assessment tools
4. Maternal egress testing
5. Ensure proper functioning of equipment-call bells
6. Publicize fall prevention efforts
7. Risk assessment tools to avoid hazards of SSC, unsafe sleep practices and bed-sharing


Summary Recommendations: Neonatal Period

1. Standardize practices of SSC
2. Standardize sequence of events after delivery
3. Document maternal and newborn assessments and any changes in condition
4. Direct observation in delivery room
5. Position the newborn to avoid airway obstruction
6. Conduct frequent assessments
7. Assess level of maternal fatigue
8. Avoid bed-sharing
9. Promote supine sleep for all infants
10. Train health care personnel in standardized methods of providing SSC and rooming-in

Recommendations at Discharge

- Sleep position—supine
- Relationship to other adults (siblings)
  - Separate surface
  - No bed sharing, especially avoid couch and armchair
  - Separate twins
- Sleep location- room sharing
- Sleep surface
  - Flat firm mattress
- Other objects in sleep environment
  - No pillows, bumpers, loose bedding or blankets or sheets

SIDS and Risk of Bedsharing

- 11 studies examining the risk of bed-sharing and SIDS since 1970
- 2464 cases and 6495 controls
- 710 cases (28.8%) and 863 controls (13.3%) were bed-sharing

<table>
<thead>
<tr>
<th>Study name</th>
<th>RR (Lower 95%CI)</th>
<th>RR (Upper 95%CI)</th>
<th>2-tailed P value</th>
<th>OR (RR 95%CI)</th>
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<tbody>
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<td>Andrews</td>
<td>6.72</td>
<td>2.76</td>
<td>0.000</td>
<td>6.72 (3.76,11.92)</td>
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<tr>
<td>Banks</td>
<td>3.77</td>
<td>1.52</td>
<td>0.000</td>
<td>2.32 (1.16,4.64)</td>
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<td>Bown</td>
<td>2.11</td>
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<td>0.000</td>
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<td>Casper</td>
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<td>Korfman</td>
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<td>McCormick</td>
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<td>1.86 (1.01,3.42)</td>
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<td>Mitchell</td>
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<tr>
<td>Nelles</td>
<td>2.92</td>
<td>1.38</td>
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<td>2.25 (1.12,4.54)</td>
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<td>Toppin</td>
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<td>1.38</td>
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<td>2.25 (1.12,4.54)</td>
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<tr>
<td>Summary</td>
<td>2.89</td>
<td>1.38</td>
<td>0.000</td>
<td>2.25 (1.12,4.54)</td>
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</table>

SIDS and Risk of Bedsharing-smoking or non-smoking

<table>
<thead>
<tr>
<th>Study name</th>
<th>OR (LL 95%CI)</th>
<th>OR (UL 95%CI)</th>
<th>Z-value</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Flaving</td>
<td>6.27</td>
<td>2.06</td>
<td>3.74</td>
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</tr>
<tr>
<td>Taylor</td>
<td>6.33</td>
<td>2.33</td>
<td>3.74</td>
<td>0.000</td>
</tr>
<tr>
<td>Toppin</td>
<td>6.27</td>
<td>2.06</td>
<td>3.74</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study name</th>
<th>OR (LL 95%CI)</th>
<th>OR (UL 95%CI)</th>
<th>Z-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-smoking</td>
<td>1.66</td>
<td>0.70</td>
<td>0.74</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Summary Odds of 2.89

Vennemann MM Journal of Pediatrics 2012

Vennemann MM Journal of Pediatrics 2012
**SIDDS and Risk of Bed-sharing: Usual or Not**

Vennemann MM Journal of Pediatrics 2012

**Bed Sharing Among Black Infants and Sudden Infant Death Syndrome: Interactions With Other Known Risk Factors**

- Chicago case/control study of SIDS bed sharing and controlling for other factors
- Almost half (47.4%) of the study population bed shared during the last/reference sleep (58% cases and 37% controls).
- Bed sharing was associated with 2 times greater risk of SIDS compared with not bed sharing.
- More pronounced with a soft sleep surface, pillow use, maternal smoking, and younger infant age.
- Bed sharing was still associated with an increased risk of SIDS, even when the infant was not using a pillow or sleeping on a firm surface.
- The strongest predictors of SIDS among bed-sharing infants were soft sleep surface, nonuse of a pacifier, and maternal smoking during pregnancy.


**SIDDS and Bed-Sharing**

- 19 studies with actual data; 1472 SIDS Cases; 4679 controls

Carpenter R BMJ 2013
SIDS and Bed-Sharing among BF considering smoking

Carpenter R BMJ 2013

5.1 times the risk of <15 weeks of age

Carpenter R BMJ 2013

SIDS and Bed-Sharing among BF

- Combined 2 studies, 400 cases, 1386 controls
- Calculated Unadjusted OR (sample size too small for AOR)
- Co-slept on chair/sofa 21.4 (7.93-58.04)
- Co-slept if adult used alcohol 19.35 (7.05-53.11)
- Co-slept no other risk factors \(1.62 (0.96-2.73)\)
Does Bed-sharing Affect the Duration of (exclusive) Breastfeeding?

Longitudinal data were from the Infant Feeding Practices Study II, which enrolled mothers while pregnant and followed them through the first year of infant life.

Does Bed-sharing Affect the Duration of (exclusive) Breastfeeding?

- 870 participants from the in-hospital RCT study then followed weekly up to 26 weeks
- Identified intent to breastfeed, duration, exclusivity

Key Points about Breastfeeding and Bed-Sharing

- Infant sleep location is associated with breastfeeding duration
- Mothers who bed-share breastfed for longer
- Frequent bed-sharing mothers differed from mothers who bed-shared less often or not at all in prenatal breastfeeding intent, the importance they attached to breastfeeding and subsequent breastfeeding duration and exclusivity
Advice and Bed-sharing/BF

- Study of Attitudes and Factors Effecting Infant Care Practices (SAFE) survey of 3218 mothers 2011-2014, at 60 DOL
- 30.5% of mothers were exclusively breastfeeding, 29.5% reported partial breastfeeding.
- 65.5%, reported usually room sharing without bed sharing (58.2% of EBF; 70% on non-BF), while 20.7% reported bed sharing.
- Compared to mothers who room shared without bed sharing, mothers who bed shared were more likely to report exclusive breastfeeding (AOR 2.46, 1.76-3.45) or partial breastfeeding (AOR 1.75, 1.33-2.31).
- Receiving advice regarding sleep location or breastfeeding increased adherence to recommendations in a dose response manner, and did not affect feeding practices.

Smith LA. Academic Pediatrics 2016

Is Prevalence of Bed-sharing Increasing?

![Graph showing increasing prevalence of bed-sharing from 1992 to 2010](Colson ER JAMA Pediatrics 2013 Year)

Prevalence and Factors Related to Bed-sharing

- 18,986 participants, 1993-2010, 11.2% reported an infant sharing a bed as a usual practice
- Bed sharing increased from 1993 (6.5%) to 2010 (13.5%), but no increase among Caucasians, increase among Black and Hispanic population, and not necessarily breastfeeding
- Additional factors associated with increased breastfeeding: lower education, lower income, west coast and younger age <8 weeks or 8-15 weeks compared to over 15 weeks
- Advice against bed-sharing by pediatrician associated with decrease 0.66 [0.53-0.82]), whereas a neutral attitude was associated with increased bed sharing (1.38 [1.05-1.80])

Colson ER JAMA Peds 2013
2016 AAP Policy on SIDS and Other Sleep Related Infant Deaths

- Shared sleep environment up to 1 year, at least 6 months (50% reduction in risk)
- Feeding in bed, not couch or arm chair
- Place infant on separate sleep surface as soon as parent awakens
- Recognition that parents may fall asleep in bed after or during feeding their infant, and that some parents choose to bed-share, so remove pillows, loose blankets, sheets and move the bed away from walls to prevent entrapment, and follow remainder of safe sleep recommendations

Moon RL et al Pediatrics 2016

Room Sharing not Bed-sharing

Table 3: Infant’s sleeping environment in relation to parents: last or reference sleep. Figures are numbers (percentage) of babies

<table>
<thead>
<tr>
<th>Infant details</th>
<th>Infants who died (n=271)</th>
<th>Controls (n=3006)</th>
<th>Univariate odds ratio (95% CI)</th>
<th>Multivariate odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sole bed</td>
<td>21 (7.8)</td>
<td>311 (10.3)</td>
<td>1.18 (0.6 - 2.28)</td>
<td>1.00 (0.51 - 1.93)</td>
</tr>
<tr>
<td>Side bed shared</td>
<td>128 (43.1)</td>
<td>423 (14.1)</td>
<td>3.22 (2.04 to 5.03)</td>
<td>1.45 (0.93 to 2.24)</td>
</tr>
<tr>
<td>Side bed shared in own bed</td>
<td>24 (8.9)</td>
<td>117 (3.9)</td>
<td>2.45 (1.38 to 4.35)</td>
<td>1.61 (1.01 to 2.56)</td>
</tr>
<tr>
<td>Side bed at end of bed</td>
<td>82 (30.3)</td>
<td>169 (14.3)</td>
<td>2.75 (1.66 to 4.50)</td>
<td>2.04 (1.24 to 3.33)</td>
</tr>
</tbody>
</table>

325 cases 1300 controls from 5 regions in the UK

Blair PS BMJ 1999

Options for Sleep Surfaces

- Standard crib, bassinet, portable crib, play yard, flat surface with firm mattress and tight fitting sheet
- New: CPSC standards for bedside sleepers, not yet for in-bed sleepers
- Avoid bed-sharing for highest risk situations:
  - Infant < 4 months of age
  - Former premature and low birth weight infants
  - Smokers, or impaired with alcohol or drugs
  - Non-parents
  - Soft surfaces such as waterbeds or soft mattresses
  - Pillows and other objects that can lead to suffocation
  - Recommend against co-bedding twins

Moon RL et al Pediatrics 2016
Pacifiers

• Consider offering at nap or bed time
• After breastfeeding is firmly established (no specified time frame)
• If not breastfed can introduce as soon as family desires
• New evidence to show pacifiers reduce risk even in breastfeeding infants

Moon RL et al Pediatrics 2016

Evidence for Pacifiers

<table>
<thead>
<tr>
<th>Resource</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpenter et al 2004</td>
<td>0.44 (0.20-0.88)</td>
</tr>
<tr>
<td>Fleming et al 1984</td>
<td>0.41 (0.22-0.77)</td>
</tr>
<tr>
<td>Hauck et al 2003</td>
<td>0.34 (0.17-0.71)</td>
</tr>
<tr>
<td>L’Heureux et al 1990</td>
<td>0.25 (0.09-0.64)</td>
</tr>
<tr>
<td>Millman et al 2004</td>
<td>0.10 (0.03-0.31)</td>
</tr>
<tr>
<td>McBeth et al 1999</td>
<td>0.33 (0.16-0.68)</td>
</tr>
<tr>
<td>Tepfen et al 2016</td>
<td>0.29 (0.15-0.57)</td>
</tr>
</tbody>
</table>

Summary Odds Ratio: 0.39 (0.31-0.59)
Test of homogeneity $p = 0.45$
Test for overall effect $p = 0.001$

* "% Little" pacifier use
* "% lot" pacifier use

Hauck F Pediatrics 2005

Counseling Strategies

• “Health care providers are encouraged to have open and non-judgmental conversations with families”
• Recommendations taken into consideration based on relative risks and benefits of individual circumstances

• Use Motivational Interviewing
• L*O*V*E

Moon RL et al Pediatrics 2016
**Bottom Line**

- SIDS prevention and Breastfeeding Promotion are aligned strategies for the public’s health
- Recognition that families choose bed-sharing, but data still reveal hazards even in no-other-risk population
- Recognition that bed-sharing is correlated with longer period of exclusive breastfeeding, but bedside sleeping may also support optimal breastfeeding patterns

**Future Directions**

- Need more and better studies of the exclusive breastfeeding, no-other-risk population to determine if “making the bed safer” is protective against SIDS
- Need more research to identify the vulnerable infant
- Need research to determine potential effects of early SSC on reduction of SIDS risk

**Questions?**