

**VI Congreso Español de Lactancia Materna**  
**Avila 7.4.2011 Round table session: Research updates**

## Sleeping issues in the breastfed baby

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## **Sleeping issues in the breastfed infant**


**Professor Helen L Ball**

Human infants are the most neurologically immature of all primates at birth, yet infant care practices in many Western industrialised societies fail to acknowledge the implications of this immaturity, especially at night. Babies sleep very differently from their parents: they don't sleep exclusively at night; they don't sleep all night; they fall asleep differently, have shorter sleep cycles and experience much more REM. However, most paediatric and popular knowledge about babies' sleep maturation and regulation is based upon studies of formula-fed infants sleeping alone. In this session the Euro-American preoccupation with infant sleep independence is traced historically and compared with infant care practices across cultures. We will examine the prevalence and nature of parent-infant sleep contact, parental reasons for choosing to sleep with their infant, and the intricate association between breastfeeding and bed-sharing. We will critically evaluate the complex relationship between infant sleep location and sudden infant death syndrome (SIDS) and argue that there is no single simple message about bed-sharing that is appropriate for all families and all situations. The case for informed parental choice will be made, and sources of useful guidance will be shared.

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## Parameters of infant sleep

- Babies sleep very differently from their parents:
  - they don't sleep exclusively at night;
  - they don't sleep all night;
  - they fall asleep differently;
  - have shorter sleep cycles;
  - experience much more REM.

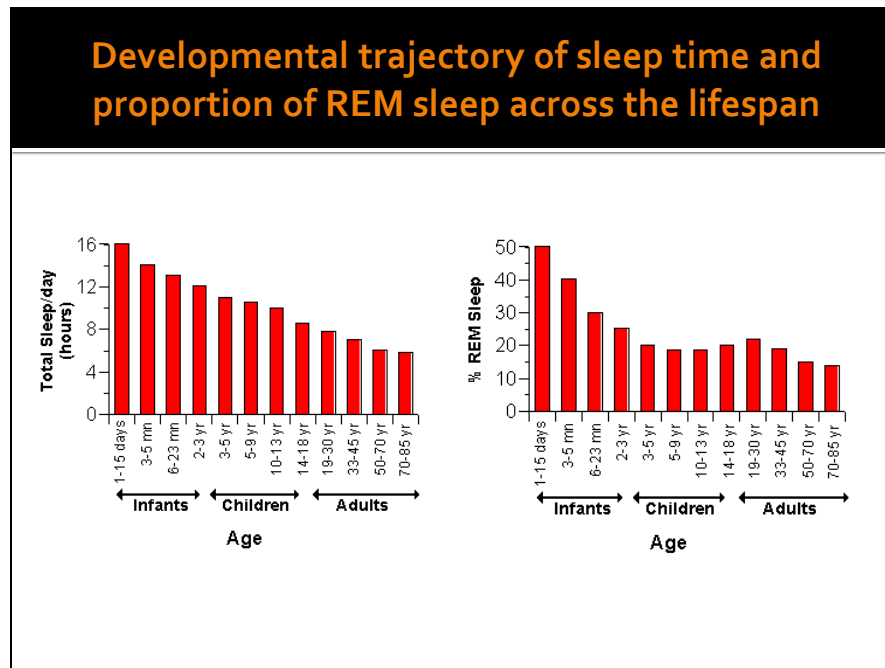


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## Parameters of infant sleep

- Newborns require 20 hours or so of sleep a day
- Sleep in 2-3 hour bouts
- Circadian rhythms begin to emerge around 3<sup>rd</sup> month
- Newborn sleep cycle (REM through quiet/deep sleep and back to REM) = 60 mins. Adults = 90 mins.
- Adults drop quickly into non-REM, initially sleep cycles include little REM which increases to morning
- Infant drop 1<sup>st</sup> into REM then progress to non-REM after 20+ minutes
- From birth to 3 months 40-50% on infant sleep time is made up of REM – brain processing information acquired

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### Breastfed and formula-fed infants sleep differently

- 'Settling' = defined as phase when a baby begins to fall quickly into deep sleep and stay asleep for prolonged period (12am to 5am)
- Encouraging early settling = desirable parenting goal for past 50+ years – co-incident with high prevalence of formula use
- Most paediatric and popular knowledge about babies' sleep maturation and regulation is based upon studies of formula-fed infants sleeping alone
- Parents and paediatricians now consider infant night waking to be problematic – but for breastfed infants it is normal and expectable. Babies digest breastmilk in 90 minutes, therefore feel hungry again in 2-3 hours.
- Multiple studies have now documented that 'settling' occurs much earlier in formula than breast-fed infants.

*Corey 1975, Wright et al 1983; Elias et al 1986; Ball 2003; Quillin & Glenn 2004*

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## The evolutionary obstetrical conflict

- Human infants are neurologically underdeveloped at birth
- Human infants continue foetal rate of brain growth for 1 year
- Evolutionary conflict between bipedalism and encephalisation
- Compromise = truncated gestation and total caregiver dependency (an 'external gestation')
- Newborn humans lack neuromuscular control and homeostatic regulation
- While the infant brain matures human mothers are responsible for maintaining proximity (safety, warmth, frequent feeding) and regulating infant physiology

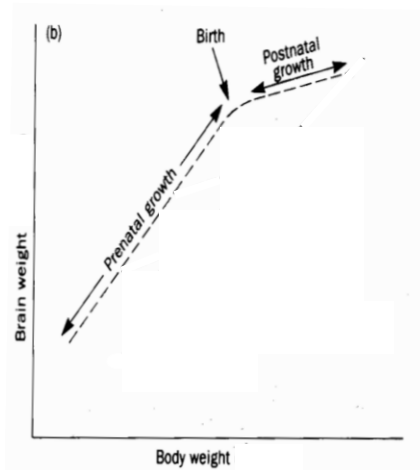


Ball, HL (2007) Night-Time Infant Care: Cultural Practice, Evolution, and Infant Development, in Liamputtong (ed) *Child rearing and infant care issues: a cross-cultural perspective*. New York: Nova.

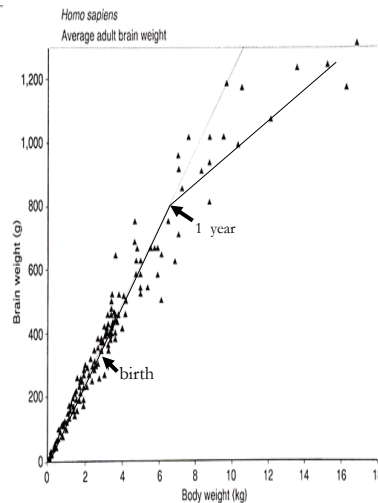
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## Growth trajectory for brain and body

Martin, R.D. 1990 *Primate Origins and Evolution: A Phylogenetic Reconstruction*. London: Chapman and Hall



Non-human primate infants



Human infants

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## The anthropology of infant sleep

"Every primate baby is designed to be physically attached to someone who will feed, protect, and care for it... they have been adapted over millions of years to expect nothing else" (Small, 1998)



Euro-American societies are cross-culturally unusual in separating mothers and infants at night

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## Solitary infant sleep = historically novel


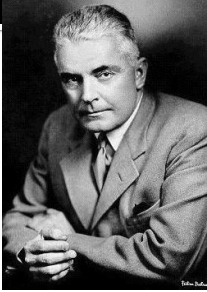


- Prior to the early 20<sup>th</sup> century infant social sleep was normal practice
- "The bosom of the mother is the natural pillow of her offspring" Dr Conquest (1848)
- Dr Chavasse, in *Advice to mothers* (1839) recommended bed-sharing until an infant was weaned at 9 months

"The First Born" by Yorkshire artist Fred Elwell was painted in 1918 and hangs in Ferens Gallery, Kingston-upon-Hull

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## Expert advice



- During the 1920s John B Watson and Frederick Truby King dominated 'scientific' attitudes to infant care
- The primary discourse of child-rearing revolved around independence, self-control and self-reliance
- Watson believed that no child could have too little affection, while a good 'Truby King' baby preferred solitary confinement to human interaction
- Their influence lingers in some of the underlying assumptions about babies that we still hear today.

Hardyment, C. (1983). *Dream Babies: child care from Locke to Spock*. London, Jonathan Cape Ltd.

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## The importance of physical contact

- Western fashions in infant care have changed much more rapidly than infant evolutionary biology.
- Harlow's experiments into the social development of infant monkeys demonstrated how physical contact, warmth and comfort was of vital importance for infant development.



Blum, D. (2002). *Love at Goon Park: Harry Harlow and the Science of Affection*. Cambridge, Mass, Perseus.

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## Effects of physical contact

- soothes and calms infants
- promotes sleep
- conserves heat / energy
- analgesic for newborns
- separation is stressful
- premature infants experience less agitation, apnoea, bradycardia and more stable SatO<sub>2</sub>
- reduces maternal anxiety
- more efficient participation in care
- effective breastfeeding initiation

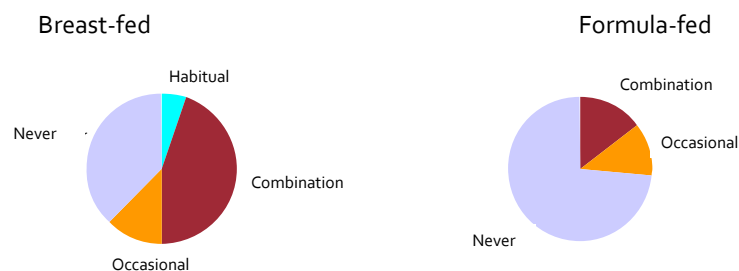


Anderson GC et al (2003). Early skin-to-skin contact for mothers and their healthy newborn infants (Cochrane Review). In: The Cochrane Library, Issue 2 2003.

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## North Tees Infant Sleep Study

- 1998-2000 253 families with newborn infants born at N. Tees
- Sleep diaries for 7 consecutive days during 1<sup>st</sup> and 3<sup>rd</sup> month
- Semi-structured interviews at end of 1<sup>st</sup> and 3<sup>rd</sup> month
- Half of all babies bed-shared sometime during 1<sup>st</sup> 3 months



Ball, HL (2002) "Reasons to share: why parents sleep with their infants". Journal of Reproductive and Infant Psychology, 20 (4): 207-221.



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## Do UK parents & infants sleep together?

	North Tees Study	CESDI Study
Bed-shared in 1st month	47.4%	47.9%
Bed-shared in 3rd month	29.4%	24.2%

- Breastfeeding and bed-sharing are very clearly intertwined:
  - 72% of infants who breastfed for 1 month or more were bed-sharers
  - 38% of formula-fed babies bed-shared

Blair PS & HL Ball (2004) "The prevalence & characteristics associated with parent-infant bed-sharing in England" [Archives of Disease in Childhood](#). 89:1106-1110

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## Bed sharing prevalence surveys

### Over 1<sup>st</sup> 3-6 months

Tuohy et al (1998)	43%	6,268 NZ families interviewed at clinics
Gibson et al (2000)	46%	410 Philadelphia families – questionnaires
Rigda et al (2000)	46%	44 Australian families -- questionnaires
Ball (2002)	47%	253 NE UK families interviews/sleep diaries
Brenner et al (2003)	48%	394 Inner city (DoC) mothers interviewed
Van Sleuwen et al (2003)	40%	210 Dutch families -- questionnaires
Willingner et al (2003)	47%	8,453 US caregivers NISPS -- telephone survey
Blair & Ball (2004)	46%	1,095 UK CESDI control families – HV interview
Lahr et al (2005)	77%	1,867 US families – Oregon PRAMS surveys
Bolling et al (2007)	49%	12,290 UK mothers -- postal survey

### Specified night (in 1<sup>st</sup> month)

McCoy et al (2004)	22%	10,355 US families -- questionnaires
Blair & Ball (2004)	22%	63 UK CESDI control families – HV interview
Blair & Ball (2004)	21%	261 NE UK families -- sleep diaries

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## Why do parents and infants bed-share?

- Ease and convenience of night time breastfeeding
- Enjoyment of close contact with infant
- Necessity due to lack of space
- Anxiety regarding infant health or safety
- To settle a fractious infant
- Family bed ideology



Ball, HL (2002) "Reasons to share: why parents sleep with their infants".  
*Journal of Reproductive and Infant Psychology*, 20 (4): 207-221.

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## How do parents and babies bed-share?

Breastfeeding bed-sharing mother-infant pairs sleep together in a characteristic manner:



Ball, HL (2006) "Parent-infant bed-sharing behaviour: effects of feeding type and father presence".  
*Human Nature* 17(3): 301-316

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## Characteristic bed-sharing position

- Facilitates easy access to breasts by baby
- Babies orient towards their mothers' breasts (olfactory?)
- Safety benefits:
  - baby flat on mattress away from pillows
  - baby constrained by mum – can't move up or down bed
  - mum controls height of bed covers over baby
  - very difficult for baby to be rolled on
  - mum close enough to monitor temperature and breathing

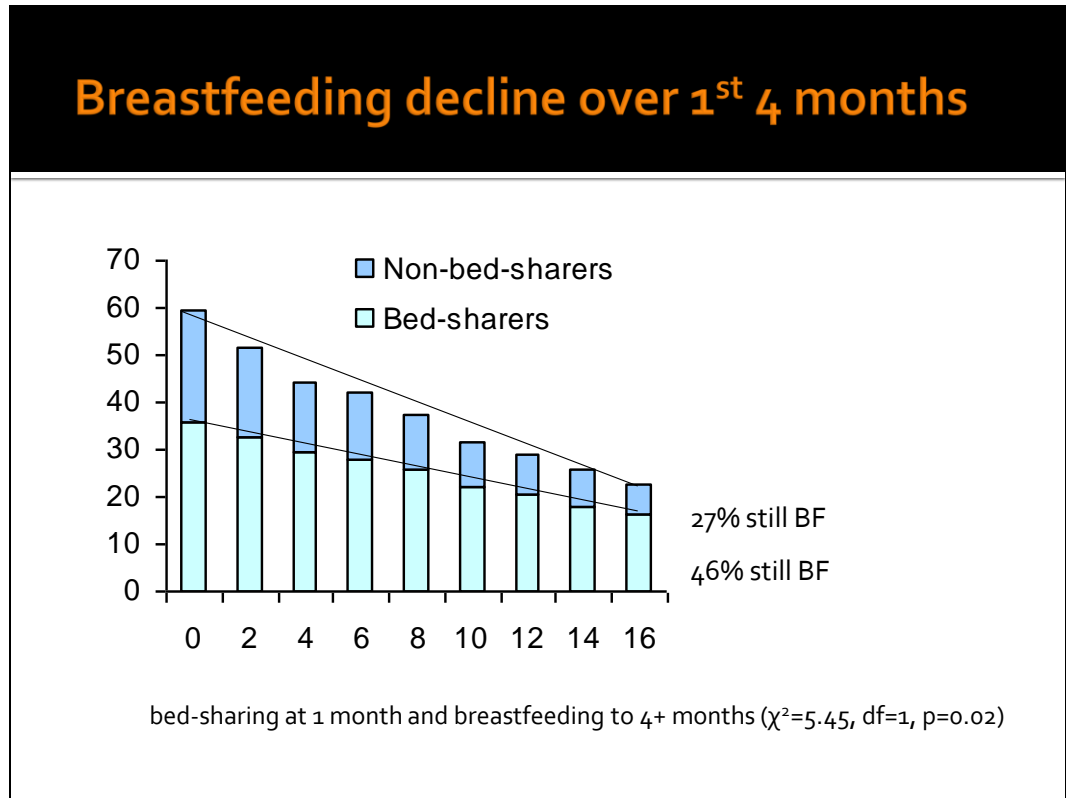
Ball, HL (2006) "Parent-infant bed-sharing behaviour: effects of feeding type and father presence". *Human Nature* 17(3): 301-318

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## Bed-sharing is important for breastfeeding

- Strong association between breastfeeding and infant sleep location
- 70-80% of UK mothers who breastfeed bed-share
- Facilitates night-time feeding, and helps maintain milk supply
- Many breastfeeding organisations highly value mother-infant sleep contact
- Breastfeeding promotion organisations vigorously oppose efforts to introduce anti-bed-sharing policies
- Tension in infant health policy between SIDS /accidental death reduction and breastfeeding promotion

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## Bed-sharing encourages frequent suckling

- McKenna et al observed that mothers and 11-15 wk infants breastfed twice as frequently at night when sleeping in contact than when sleeping apart.
- In our community study we found:

	<i>Breastfeed frequency at night (maternal nightly report)</i>		
	Bed-sharers	Non-bed-sharers	
1 <sup>st</sup> month	2.31 (n=69)	1.91 (n=59)	p=0.03
3 <sup>rd</sup> month	1.92 (n=28)	0.88 (n=30)	p<0.001

- To explore the effects of sleep contact on both early breastfeed frequency and long-term duration we randomised 64 mothers and infants to 3 different sleep conditions on the post-natal ward: Baby in bed, baby in side-car crib, & baby in bassinette.

*McKenna, J. J., et al. (1997). "Bedsharing promotes breast-feeding in Latino mother-infant pairs." Pediatrics 100: 214-219.*

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## RCT infant sleep location on postnatal ward

- Breastfeeding frequency
- Infant exposure to potential risks
  
- Mother & infant sleep duration
- Mother's satisfaction
- Assistance from staff
  
- Long-term breastfeeding
- At home infant sleep site

Ball, HL; Ward-Platt, MP et al (2006) Randomised trial of mother-infant sleep proximity on the post-natal ward: implications for breastfeeding initiation and infant safety *Archives of Disease in Childhood* **91**: 1005-1010.

Ball, HL (2008) Evolutionary Paediatrics: a case study in applying Darwinian Medicine. In *Medicine and Evolution: Current Applications, Future Prospects*. Elton, Sarah & O'Higgins, Paul New York: Taylor & Francis.

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## Breastfeeding initiation

	Bed	Crib	Cot	Pair-wise t tests
Successful feeds per hour	1.69	1.80	0.79	Bed vs Crib; ns Bed vs Cot; p=0.01 Crib vs Cot; p=0.01
Feeding attempts per hour	3.01	2.78	1.15	Bed vs Crib; ns Bed vs Cot; p=0.01 Crib vs Cot; p=0.02
All feeding effort per hour	4.50	4.58	1.94	Bed vs Crib; ns Bed vs Cot; p=0.01 Crib vs Cot; p=0.00
Nipple presentation per hour	5.97	5.31	3.04	Bed vs Crib; ns Bed vs Cot; p=0.02 Crib vs Cot; p=0.03

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## Responsiveness to cues

VIDEO

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## Interaction

VIDEO

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## Close proximity and unhindered access

- Facilitates contact between mother and baby
- Allows baby to easily attract mother's attention
- Encourages greater interaction
- Facilitates frequent attempted feeds
- Results in more frequent successful feeds
- Increases prolactin production...
- After expulsion of placenta, progesterone falls & prolactin mediates milk secretion
- Prolactin production influences timing & intensity of lactogenesis II
- Nipple stimulation → prolactin surges
- Stimulation intensity → greater surge
- Night feeds → greater surge
- More frequent feeds → earlier & more copious milk production at lactogenesis II

Uvnas-Moberg, K., et al. (1990); Chapman, D. J. and R. Perez-Escamilla (1999).

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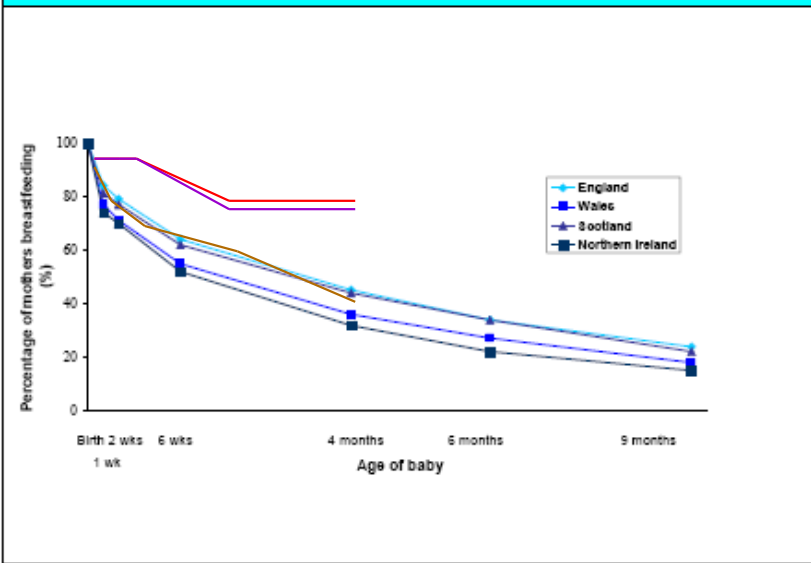
## Breastfeeding duration

- *Prolactin Receptor Theory* links early feed frequency to breastfeeding duration
- Galactopoiesis depends on early production of prolactin receptors
- Receptor development depends on frequent feeding and prolactin production
- Does increasing early feed frequency affect breastfeeding duration?

De Carvalho et al (1983); Zuppa et al (1988)


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Figure 2.5: Duration of breastfeeding among mothers who breastfed initially by country (2005)



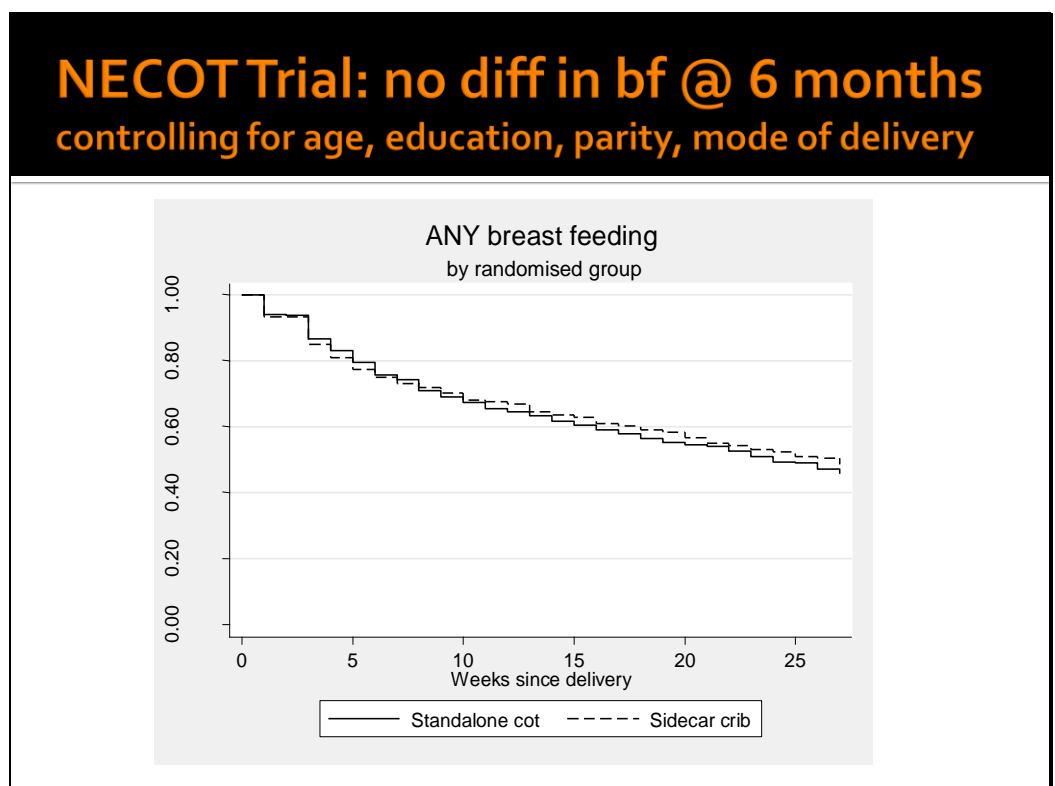


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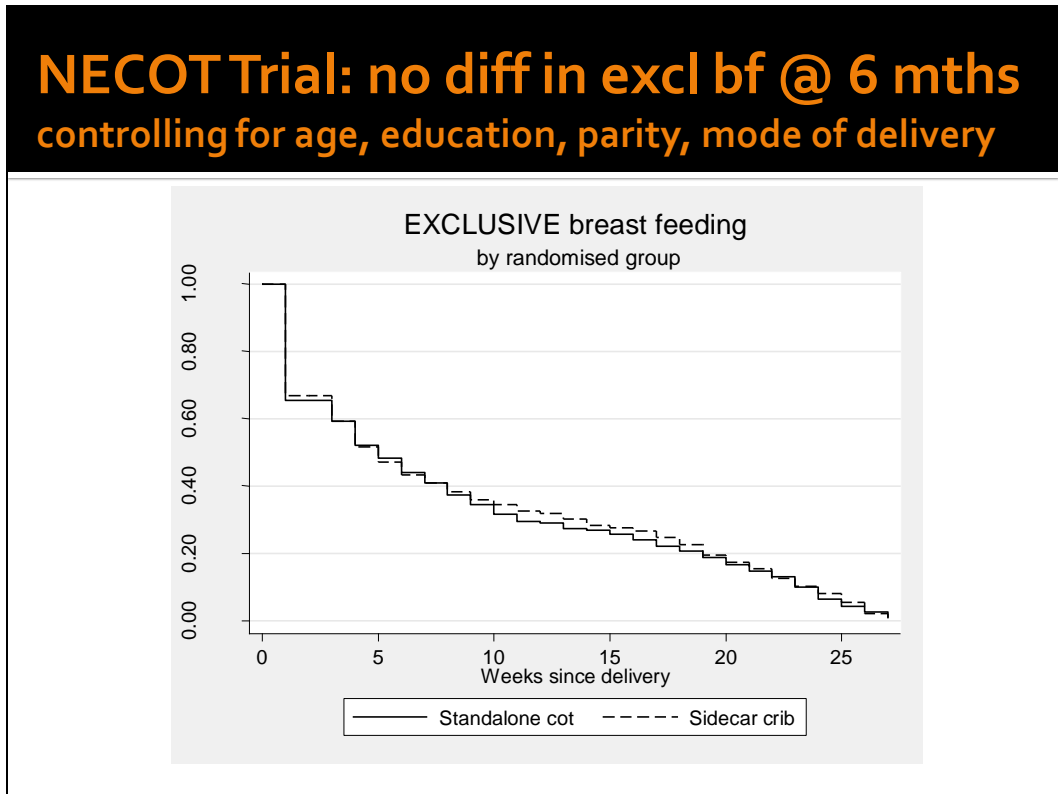


**Postnatal ward sleep proximity and breastfeeding duration**

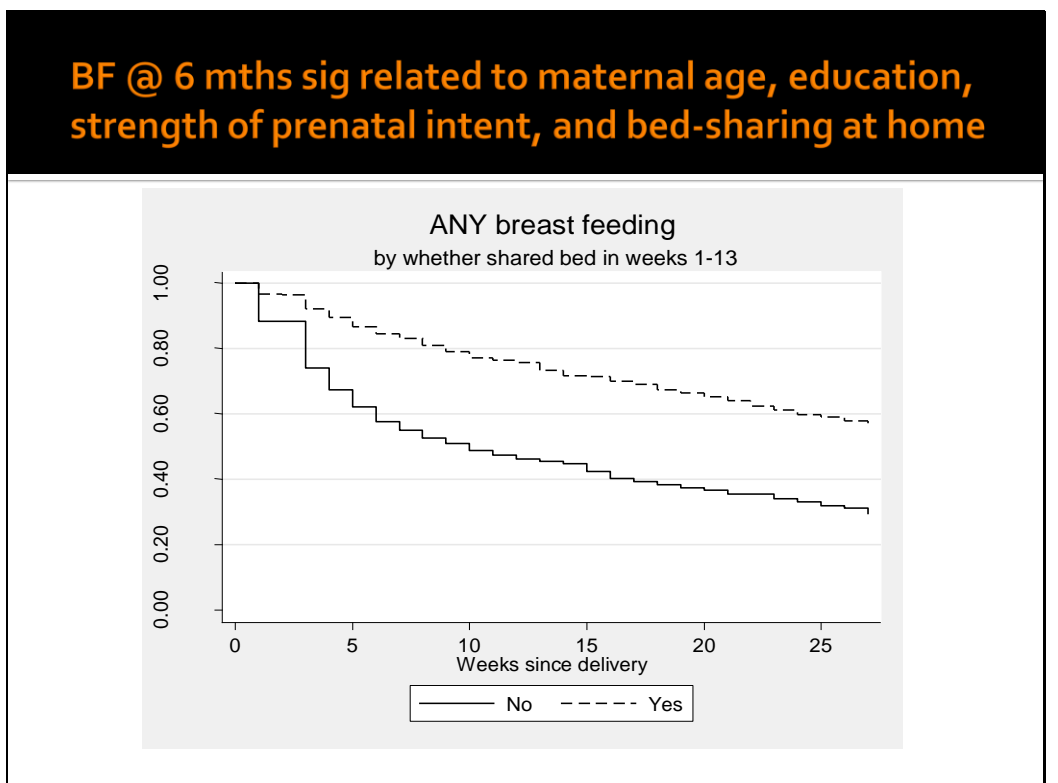
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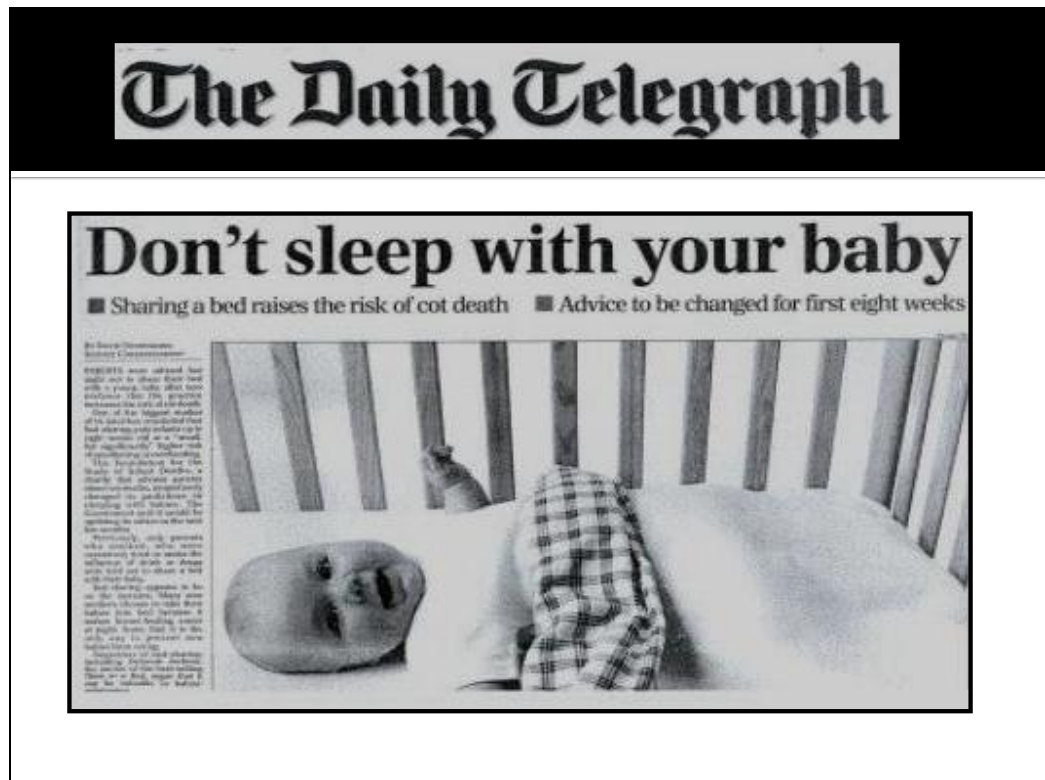
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## Hazardous bed-sharing

- Infants sleeping with a parent who smokes have an increased risk of SIDS
- Accidental suffocation is sometimes a cause of bed-sharing deaths
- In most cases drugs, alcohol or excessive tiredness inhibited normal parental awareness of infant during sleep
- Very rare for breastfed infants – but no national-level data are recorded.
- Most hazardous bed-sharing involves:
  - **Make-shift bedding arrangements, e.g. sofas etc**
  - **Smoking**
  - **Alcohol and drug use**

Blair et al (2009) Hazardous cosleeping environments... *BMJ* 339: b3666

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## Systematic review: Horsley et al (2007)

- Systematic review examining 40 studies reporting on harms and/or benefits associated with bed-sharing
- A positive association exists between bed-sharing and breastfeeding – both rate and duration
- It is extremely difficult to draw conclusions regarding the risks of bed-sharing from the large national case-control studies as *these were designed to be hypothesis generating not hypothesis testing*
- “The issue of bed-sharing and sudden death demands re-evaluation with hypothesis driven studies using a prospective design and a standardised definition of bed-sharing”

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## Risks vs. benefits of bed-sharing

- Benefits of mother-infant sleep contact to breastfeeding initiation are very clear
- Evidence is accumulating regarding the benefits of mother-infant sleep contact on breastfeeding duration
- No evidence of breastfed infants being at increased risk in from bedsharing
- Known hazards associated with bed-sharing are related to specific dangerous circumstances – alcohol, drugs, smoking, sofas
- Can advice to **all** mothers not to bed-share be justified on the available evidence?
- Is the with-holding of evidence from mothers about the benefits of bed-sharing to breastfeeding ethical?
- How is avoiding discussion about bed-sharing with parents good practice?

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## La Leche League

- breastfeeding help and information

GREAT BRITAIN

### Safe Sleep and the Breastfed Baby



**What babies and families need**

A baby needs to breastfeed during the night for many months and may need parental attention at night for years. It is important for parents to find ways of meeting their child's night-time needs whilst getting sufficient sleep themselves.

Worldwide and throughout history mothers have found that breastfeeding has been made easier at night by taking their babies into bed with them and feeding lying down; they say it can make night feeds a real pleasure and that both they and their baby sleep better this way too. (Parents and infant sharing an adult bed for sleep is often called bedsharing or sometimes co-sleeping.)

Bedsharing with bedsharing is one of the traditional ways of caring for an infant at night. However, sleeping with a young baby may not suit every family and some mothers prefer to keep their babies close in a cot or crib next to the bed, bringing them into bed just to feed. Some find that sitting up in bed to breastfeed works for them in the early weeks.

Babies often show strong preferences about where they do or do not want to sleep and parents will change their arrangements accordingly, because an unsettled baby means disturbed nights for the whole family.

Wherever a baby sleeps (and in most families a baby will have a variety of sleeping places in the course of the day and night - baby sling, pram, pushchair, baby car-seat, cot, crib, in bed with mother), each place needs to be looked at with safety in mind (see sleep safety box overleaf).

**Helpful recommendations?**

Some authorities have recently been advising all parents that placing their baby to sleep in a cot beside the bed is safer than bedsharing but such 'one-size-fits-all' advice does not take into account important differences between families, in particular whether their baby is being exclusively breastfed. What may be safer for one family, may not be safer (or even possible) for another. Information should be provided to help each family choose the best and safest sleep option for them.

Whilst some parents may stop taking their babies into bed with them as a result of these warnings or because of pressure from family and friends, there are certain practical implications which could well cause problems. For instance, babies have a biological need to be in close physical contact with their mothers for much of the time; so some babies may become distressed if this need is denied at night. If her baby cries when placed in the cot and she fears to take the baby into bed with her, what is a mother to do?

Also, mothers often find it difficult to stop themselves from falling asleep whilst breastfeeding. The hormonal effects of suckling a baby can cause a mother to doze

off even if she isn't lying down in bed at all the time! Better that parents take steps to increase the safety of bedsharing than chance falling asleep in more risky places (such as on a sofa).

It is possible that in attempting to follow these recommendations a mother may experience such difficulties at night that she may give up breastfeeding, with serious health implications for herself.

Infant sleep researchers including Dr I of Durham Parent-Infant Sleep Lab (Dr McKenna of the Mother-Baby Behavior, Notre Dame University (Indiana, USA) these 'don't bed share' recommendations

**Informed choice**

La Leche League has shared practical tips on night-time parenting of breastfed infants (including bedsharing) for nearly 50 years\*, basing its information on the day-to-day experiences of families from around the world and incorporating research-based knowledge.

It is important that mothers are informed about the benefits as well as the possible risks associated with their baby's different sleeping places, in the context of their own family's circumstances. They can then do what parents have always done - evaluate the risks and benefits, and make the choices for themselves.

The object is easy breastfeeding, safe sleeping and a good night's rest for everyone - wherever the baby sleeps.

**A protective offer**

No sleep environment but a growing body of bedsharing (where it has been eliminated) has safety features for it. For example, in studies I sleep with their breast been shown to adopt breastfed more suc which carries significant mother and child.

James McKenna's contact brought about bedsharing may be infant's chances of d Dr. McKenna's resea Behavioral Sleep Lab who sleep with their of apnea (when they and more small arou breathing better. Per associated with incre studies cited by Dr breastfeeding may d possibly by providi and fu which are tog.

(Further information can be found on the websites of Dr James McKenna and of the University of Durham Sleep Lab - see links overleaf)

\* **Sudden Infant Death Syndrome - also known as cot death**

**"We ..... challenge on several grounds the assumption that solitary infant sleeping is somehow optimal, when in worldwide and evolutionary terms it has not been the norm."**

Dr Helen L. Ball

### SLEEP SAFELY & COMFORTABLY

Sleep safety tips for parents of breastfed babies

**Don't have your sleeping baby:**

- **alone in a cot or cradle - or in a flat cot** (unless you are using a cot with a mattress that is fixed in place)
- **in a car or stroller**
- **in a playpen or in the bed with another person** (unless you are using a cot with a mattress that is fixed in place)
- **if any person in the bed has an illness or condition which affects the responsiveness of your baby**

**Do:**

- **have your sleeping baby:**
- **in a cot or cradle - or in a flat cot** (unless you are using a cot with a mattress that is fixed in place)
- **in a car or stroller**
- **in a playpen or in the bed with another person** (unless you are using a cot with a mattress that is fixed in place)
- **if any person in the bed has an illness or condition which affects the responsiveness of your baby**

The above safety tips apply to healthy full-term breastfed infants. If your baby seems unwell, seek medical advice promptly. Remember that safety tips can vary between the UK and other countries and circumstances. See links overleaf for more information.

**Be inventive!** Find what works for you

**Create:** Find what works for you

**Be inventive!** Find what works for you




**Be inventive!** Find what works for you

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## Sharing a bed with your baby

A guide for breastfeeding mothers

UNICEF UK Baby Friendly Initiative with the Foundation for the Study of Infant Deaths

### Reduce the risk of accidents and overheating

Sofas are very dangerous for babies as they can become trapped down the sides or in the cushions. Never lie down or fall asleep with your baby on a sofa or armchair.

Adult beds are not designed for babies. To prevent your baby overheating, suffocating or becoming trapped.


- The mattress must be firm and flat - waterbeds, bean bags and sagging mattresses are not suitable;
- Make sure that your baby can't fall out of bed or get stuck between the mattress and the wall;
- The room must not be too hot (16-18°C is ideal);
- Your baby should not be overdressed - he should not wear any more clothes than you would wear in bed yourself;
- The covers must not overheat the baby or cover the baby's head;
- Your baby must not be left alone in or on the bed as even very young babies can wriggle into dangerous positions;
- Your partner should know if your baby is in the bed;
- If an older child is also sharing your bed, you or your partner should sleep between the child and the baby;
- Pets should not share a bed with your baby

Some parents use three-sided cots which attach to the side of the adult bed. You should still follow the advice in this leaflet about avoiding accidents if you use one.

If you have any questions, your midwife or health visitor will be able to advise you.

### Your sleeping position

If you are bed sharing, it is important to make sure that your baby cannot go under the covers or into the pillow.



Most mothers who are breastfeeding automatically sleep facing their baby with their body in a position which protects the baby by stopping him moving up or down the bed (see picture).

Your baby will usually lie on his side to breastfeed. When not actually feeding, he should be put on his back to sleep, never on his front or side.

If you are bottle feeding the safest place for your baby to sleep is in a cot by your bed.

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## Achieving balance between benefits & risks

The benefits of bed-sharing, particularly to breastfeeding, affect a great many more babies, and so are as important – or more so – than the small risk of SIDS.

Discouraging bed-sharing by breastfeeding mothers will undermine efforts to improve breastfeeding duration.

Information on the relationship between sleep contact and successful breastfeeding should be provided to parents along-side information regarding any potential risks.

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## Context is everything

- Breastfed babies sleep differently from formula fed babies
- Breastfeeding babies more likely to bed-share
- Sleeping in close proximity associated with increased breastfeeding duration – may involve maternal physiology
- Breastfeeding mothers show a high degree of infant awareness during sleep
- Parental knowledge of whether to bed-share and how to do so safely is crucial for both preserving infant safety and facilitating breastfeeding.
- In some circumstances the risks are high; bed-sharing in the context of drug consumption / alcohol / make-shift or unsafe bedding (e.g. sofas) should be avoided; smokers must be advised of the increased risk of SIDS.
- Parents need information to make informed choices about bed-sharing based on the benefits and risks in their individual context.
- Parents, especially breastfeeding mothers, will always sleep with their infants— and need information on how to do so safely.

*Durham research funded by: Foundation for the Study of Infant Deaths, Scottish Cot Death Trust; Tiny Lives Fund; Babes-in-Arms; Nuffield Foundation; Leverhulme Trust; Wellcome Trust; NIHR; Durham University.*

## Publications from Durham University Parent-Infant Sleep Lab, UK

Many of these publications can be downloaded from the Durham University Sleep Lab website at:

[www.dur.ac.uk/sleep.lab](http://www.dur.ac.uk/sleep.lab)

Ball, Helen L. (2008) Evolutionary paediatrics: a case study in applying Darwinian medicine. Invited chapter for *Medicine and Evolution*, Eds Sarah Elton & Paul O'Higgins. Taylor and Francis. Publication anticipated 2008.

McKenna, JJ., Ball, HL. & Gettler, LT (2007) Mother-Infant Co-sleeping, Breastfeeding and Sudden Infant Death Syndrome (SIDS): What Biological Anthropology Has Discovered About Normal Infant Sleep and Pediatric Sleep Medicine. *Yearbook of Physical Anthropology* December 2007.

Ball, Helen L. (2007). Bed-sharing practices of initially breastfed infants in the 1st 6 months of life. *Infant and Child Development*. 16: 387-401.

Ball, Helen L. (2007). Night-time infant care: cultural practice, evolution, and infant development. Invited Chapter for: *Childrearing and Infant Care: A Cross-Cultural Perspective*. Ed: Pranee Liamputtong New York: Nova Science Publishers.

Ball, Helen L. & Klingaman, Kristin P. (2007) Breastfeeding and mother-infant sleep proximity: implications for infant care. Invited chapter for *Evolutionary Medicine (2<sup>nd</sup> Edn)* Eds Wenda Trevathan, EO Smith & JJ McKenna. Oxford University Press. New York.

Ball, Helen L., Ward-Platt, Martin P., Heslop, Emma, Leech, Stephen J. & Brown, Kath A. 2006. Randomised trial of mother-infant sleep proximity on the post-natal ward: implications for breastfeeding initiation and infant safety. *Archives of Disease in Childhood* 91: 1005-1010.

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Ball, Helen L. 2006. Together or apart? A behavioural and physiological investigation of sleeping arrangements for twin infants. *Midwifery* 23: 404-412 (available online 2006).

Ball, Helen L. 2006. Caring for twin infants: sleeping arrangements and their implications. *Evidence Based Midwifery* 4(1): 10-16.

Blair, PS & HL Ball 2004. The prevalence and characteristics associated with parent-infant bed-sharing in England. *Archives of Disease in Childhood* 89: 1106-1110.

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### Supporting bed-sharing choices: models and examples

- UNICEF UK BFI guidelines on safe bed-sharing at home AND in hospital  
<http://www.babyfriendly.org.uk/parents/sharingbed.asp>
- UNICEF UK BFI statement on bed-sharing:  
<http://www.babyfriendly.org.uk/press.asp#160104>
- UNICEF UK sample bedding-in policy  
<http://www.babyfriendly.org.uk/pdfs/bedsharingpolicy.pdf>
- Royal College of Midwives position statement  
<http://www.rcm.org.uk/files/info/documents/130105153005%2D338%2D1%2Edoc>
- Royal College of Midwives guidance paper  
<http://www.rcm.org.uk/professional/docs/GP1-Bed-sharing.doc>
- La Leche League Statement on bed-sharing  
<http://www.laleche.org.uk/pages/news/co-sleeping.htm>
- La Leche League GB bed-sharing guidance  
[www.lllbooks.org.uk/inc/modules/ecommerce/shopimages/1064\\_safe\\_sleep\\_information\\_sheet.jpg](http://www.lllbooks.org.uk/inc/modules/ecommerce/shopimages/1064_safe_sleep_information_sheet.jpg)
- US Academy of Breastfeeding Medicine Protocol #6: Guideline on co-sleeping and Breastfeeding  
<http://www.bfmed.org/ace-files/protocol/cosleeping.pdf>
- ILCA Responds to Policy Statement by AAP Task Force on SIDS 28 November 2005  
<http://www.ilca.org/news/SIDSResponse.pdf>