Breastsleeping: Humankind's Oldest and Most Successful Infant Sleep and Feeding Arrangement

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ww.cosleeping.nd.edu (website)
“For species such as primates, the mother IS the environment.”


Nothing an infant can or cannot do makes sense, except in light of mother’s body

The “dyad” IS the unit of study

Human infant (parental) social care is synonymous with physiological regulation
The fundamental unit: mothers sleeping next to their babies breastfeeding throughout the night representing humankinds oldest and most successful sleep and feeding arrangement, henceforth called breastsleeping.
Can Human Instinct and Appropriate Parental Inclinations Be Expunged, Suppressed or Eradicated? More Importantly, Should They? Who has such a authority?

Unacceptable: “No Exceptions”

But, by what account and whose authority?
Keep in mind... the vast majority of infant deaths (SIDS, SUDI) are related to maternal smoking and/or prematurity and at least one but usually multiple independent (modifiable) risk factors... and most SUDI deaths have multiple independent risk factors associated with those deaths
Breast sleeping as a special epidemiological category, reflects an evolved set of functionally inter-related factors that define us as human that can never be expunged:

1. Bipedalism producing, neurologically immature extero-gestates reliant on contact to regulate their bodies

2. Human breast milk production and composition requiring early sustained contact for optimal results augmenting breastfeeding duration;

3. Male-female neuro-hormonal changes effect maternal and paternal behavior relevant bedsharing;

4. Human infants are inherent ‘contact seekers’, due to extreme neurological immaturity at birth owing to female pelvis and energetic constraints in trying to support an energetically expensive fetal brain;

5. Acknowledges significant differences between “types’ of bed-sharing especially significant differences heretofore not recognized in assessing relative benefits to risks in SIDS/SUDI discourse i.e. bed-sharing is heterogeneous;
4-6 million years ago…the shift from quadrapedalism to bipedalism by an extinct arboreal primate ancestor required the co-evolution of a suite of what was to become social and biological changes that came to define our species.
Encephalization (increasing brain size) came in conflict with structural constraints imposed by the bipedal pelvis leading to higher maternal metabolic costs requiring earlier births…
Enter...**human biology**...

- The human “obstetrical dilemma”;

- **Human Fetal Head Size Exceeds Outlet Dimensions**

*With Emergence of Bipedalism*

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> Figure 8.1. Relationship of maternal pelvis (dark outlines) and fetal head (solid dark ovals) (after Schultz, 1949).
Percentage of Adult Brain Size:

<table>
<thead>
<tr>
<th>Age</th>
<th>Chimpanzee Infant</th>
<th>Human Infant</th>
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<tbody>
<tr>
<td>At Birth</td>
<td>45</td>
<td>25</td>
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<tr>
<td>3 months</td>
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<td>35</td>
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<td>6</td>
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<td>9</td>
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<td>1 year</td>
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<td>60</td>
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<td>2</td>
<td>75</td>
<td>70</td>
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<tr>
<td>4</td>
<td>85</td>
<td>80</td>
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</table>
| 8-9      | 100              | 95           | *(100% at 14-17 years)*
At birth the human infant is the least neurologically mature primate of all, and the most reliant on physiological regulation by the caregiver for the longest period of time.
explaining why babies do not have "wants" but only needs..
Biology of Mother’s Milk Predicts Mother-Infant Cosleeping Behavior

• Feed and Leave Species
  – (Ungulates)
    • High fat
    • High protein
    • Low carbohydrate

• High calorie = long feeding interval;

(to avoid predators nested infants do not defecate or cry in mother’s absence)

• Contact, Co-sleeping, And Carry Species
  – (Primates—Humans)
    • Low fat
    • Low protein
    • High carbohydrate

• Low calorie = short feeding interval;

(carried infants cry in mothers absence and defecate spontaneously)
The human adaptation: human babies need to be fed and in contact...quite continuously.
Balinese Mom and Baby: the dyad is the unit!
Why Is Breast Feeding So Important to the Bedsharing Issue?

• Mother-infant co-sleeping with breast feeding is an integrated, inherently adaptive system, mutually reinforcing, appropriate, predictable;
• Changes social and biological characteristics of infant and maternal sleep (connectedness-sensitivities) of co-sleeping dyad..different from bottle feeding pairs…
• Functional landscape of bed environment i.e. “outcomes” different from non-breast feeding-bedsharing contexts…
Forste et al. 2001

“Analysis of infant mortality indicated that breast feeding accounts for race difference in infant mortality in the United States at least as well as low birth weight does”

Breastfeeding increased protection against SIDS!!

“Infants who are formula fed are twice as likely to die of SIDS than breastfed infants.”

Case control study of 333 cases of SIDS matched against 998 age -matched controls in Germany, from 1998-2001

Breast Feeding Matters In All Areas Of Infant Mortality Especially Effecting African Americans

- “Breastfed infants are 80% less likely to die before age 1 year than those who never breast fed, even controlling for low birthweight”;
  - For every 100 deaths in the formula-fed group, there were 20 deaths in the breast fed group
  - Using breast feeding as the normative behavior (20 deaths in the first year) the formula group with 100 deaths, had five times as many deaths or a 500% increase in mortality.
“Breast Feeding and the Risk of Post-neonatal Death In the United States”

- Studied 1204 infants who died between 28 days and 1 year from causes other than congenital anomaly/tumor and (7740 children who lived at 1 year) (controls);
- Calculated odds specific odd ratios for ever/never breast feeding amongst all children …race-birth weight specific analysis--and duration-response effects;
- Longer breast feeding associated with lower risk: odds ratio range from:
  - .59 95% CI 0.38-0.94 for injuries to 0.84% (95%CI:.67-1.05) for sudden infant death syndrome (SIDS); (Amin Chen and Walter J.Rogan)
  - “Breast feeding has the potential to save or delay ~720 post-neonatal deaths in the United States each year
Kangaroo Maternal Care and Neonatal Outcomes: A Meta Analysis (Pediatrics 2016, Boundy et al)

- 1035 were screened 124 met inclusion criteria. Among low birth weigh newborns KMC compared to conventional care was associated with 36% lower mortality, decreased risk of neonatal sepsis, hypothermia, hypoglycemia and hospital readmission and increased exclusive breastfeeding. Newborns receiving KMC had lower respiratory rate and pain measures, and higher oxygen saturation, temperature, and head circumference growth.
Relevant to our breastsleeping proposal...Boundy et al. 2016

Moreover, as other have found, early sustained contact (amongst the skin-to-skin treated babies) led to increased exclusive breastfeeding for a longer duration (to four months). Finally, increased contact with the mothers body during the first 30 days of life led to lower mean respiratory rates and pain measures with higher oxygen saturation, temperature, and head circumference growth,
And *breastsleeping* means what?

- *In the absence of all know a hazardous factors…*

*Breastsleeping* refers to a *breastfeeding* mother sleeping and feeding along side and in relationship to her infant i.e. *cosleeping*, (either *same surface*, or *separate surface cosleeping*)
Why?

Because of the way nighttime contact and proximity changes infant and maternal behavior, sleep-wake architecture, milk production, and metabolism, feeding frequency, mother’s hormonal status, essentially becoming one and the same, integrated adaptive system, *maximizing infant safety.*

*It is ONE evolved bio-behavioral system*
So Why do we need this concept?

- Because we will never discover how to arrange the safest bedsharing environment unless we value and study it.
- Because by recommending against any and all bedsharing the AAP has put mothers in an untenable position; on one hand advocating minimally six months of breastfeeding, while, on the other, taking away from mothers the very strategy that helps them achieve that goal bedsharing i.e. breastsleeping.
What do we have such discord/disagreement on the bedsharing issue?

• Because bedsharing is not really a discrete variable at all, but is composed of many different intersecting variables that determine outcomes;
• Because of evolved human emotions, both the infants, and parents instinctually –biologically based continue to find expression regardless of whether or not medical or governmental agencies approve;
• Because *breastsleeping* is real and here to stay;
Introducing new term: 
Breastsleeping: to dramatize biological and behavioral differences between bottle feeding bedsharing and breastfeeding/bedsharing. A new discourse!

Infant-Parent Cosleeping with Breast Feeding: An Integrated Adaptive System

Bedsharing
Breast Feeding

A mutual re-enforcing system
Meet Dr. Helen Ball….does breastsleeping really augment breastfeeding duration? Is it really different?

Parent-Infant Sleep Lab Univ of Drham, UK.
Participants who bed-shared often (after baby was born) reported strong prenatal breastfeeding intent (70%).

Significantly more women who bed-shared frequently were breastfeeding at 6 months (p<0.0001) than those who intermittently or rarely/never bed-shared.

Ball et al. 2016 (Acta Pediatrica) (Just published)
At two to four months 70% of new parents were found to bed-share at least occasionally despite the fact that 0% intended to pre-natally!

35% of experienced parents anticipated bed-sharing whereas 59% were actually doing so at the time of follow up.

Ball et al. 1999
Fig. 2. Proportion of breastfeeding infants who did and did not bed-share from first month.

Breastsleeping vs. bottle feeding bedsharing:

- Breastsleeping vs bottle-feeding bedsharing?
- Avoids prone sleep
  - Mothers body arched around infant, mostly face-to face;
  - Lighter stage 1-2 sleep; less deep sleep, stage 3-4
  - More sleep stage changes;
  - More simultaneous activity time;
  - More arousals (transient and epochal)
  - More breastfeds longer durations of breastfeedin over months
  - Great sensitivity to partner induced arousals;
  - More stage shifts;
  - More inspections, monitoring, visual checking
  - More sleep, less infant crying;
  - Higher body temperature due to more arousals
- Sources: McKenna et al 2007; Ball 2003
All studies confirm that bedsharing increases breast feeding frequency and duration (below..McKenna et al 1997, see also Ball 2003, Baddock 2006, Young 1999)

Breastfeeding Behavior in Mother-Infant Dyads

![Graph depicting the frequency of breastfeeding episodes among routinely bedsharing- and routinely solitary-sleeping infants.]

Breastfeeding frequencies double or triple while co-sleeping

Fig. 4 Mean number of breastfeeds per night (with SE) for routine solitary sleepers (while sleeping separately, n = 16) and routine bedsharers (while bedsharing, n = 20), averaged over all three laboratory nights. Significant between group difference, **P < 0.01. LT Gettler and JJ McKenna Am J Phys Anthropol. 2011 March; 144(3): 454–462.
Breastfeeding Intervals Reduced By Co-sleeping

Fig. 5 Mean interval between breastfeeds (with SE) for routine solitary sleepers (while sleeping separately, $n = 16$) and routine bedsharers (while bedsharing, $n = 20$), averaged over all three laboratory nights. Statistical trend towards between group difference, $^P < 0.10$. LT Gettler and JJ McKenna Am J Phys Anthropol. 2011 March; 144(3): 454–462.
During co-sleeping maternal-infant behavior and physiology becomes entwined…by way of synchronous partner induced arousals and communication

- 60% of all maternal arousals during bedsharing are explained by the infant having aroused first, within +/- 2 seconds while...  
- 40% of all infant arousals during bedsharing are explained by the mother having aroused within +/- 2 seconds

- 1996 Mosko, S, Richard, C and McKenna, J; Drummond, S, Infant Sleep Architecture During Bedsharing and Possible Implications for SIDS. Sleep 19:677-684
And can the epidemiological data give us any support?

**Arnestad: Norway 1984-1998**

- Increased risk:
  - Smoking during pregnancy
  - Maternal disease during pregnancy
  - Young maternal age
  - Infants who never woke at night
- >50% deaths in prone position
- “We found no risk of SIDS for infants who usually co-slept. The increase in co-sleeping as a usual mode of sleep in the control group, over the time period studied, could not be related to changes in the SIDS rate for the region.”
Carpenter et al: 20 regions of Europe

- 745 cases, 2411 controls, 60 variables
- 62%: prone sleeping or bedcovers over baby’s head
  - “Twice the risk was found (36% of cases vs 16%) if the baby slept in another room, away from the mother”
- Odds ratio for smokers was 11.3 times greater than for nonsmokers
  - “substantial risk attributable to smoking by one or both parents” (77% had maternal smoking)
  - “all night bedsharing should be discouraged for all mothers who smoke”
- Method of feeding was not reported..nor alcohol/drugs
Chicago Infant Mortality Study, 1993-1996

- 260 deaths, matched controls; 75% black
- High risk: prone position, soft surface, pillow use, covers over head/face, Sick in the 2 days prior to death
- “Bedsharing was only a risk when infant was sleeping with people other than the parents. Because there were few mother-father bed sharers, the findings were driven by the mother-infant dyad. These results are reassuring and consistent with laboratory studies demonstrating that more maternal inspections, more infant arousals, and less deep sleep among infants may occur when mothers and infants sleep together routinely.”
Is bedsharing safe? Or an inherent risk?

Only in the presence of known hazards is bedsharing a risk!

- Parents of 400 SIDS infants and 1386 controls provided information from five English health regions between 1993–6 (population: 17.7 million) and one of these regions between 2003–6 (population: 4.9 million).

- Bed-Sharing in the Absence of Hazardous Circumstances: Is There a Risk of Sudden Infant Death Syndrome? An Analysis from Two Case-Control Studies Conducted in the UK
  
  Peter S. Blair mail, Peter Sidebotham, Anna Pease, Peter J. Fleming
  
  Published: September 19, 2014
  
  (Plos One)
The multivariable risk associated with bed-sharing in the absence of these hazards was not significant overall (OR = 1.1 [95% CI: 0.6–2.0]), for infants less than 3 months old (OR = 1.6 [95% CI: 0.96–2.7]), and was in the direction of protection for older infants (OR = 0.1 [95% CI: 0.01–0.5]).
Bedsharing is protective

• “Conversely, bed-sharing in the absence of other hazards was significantly protective for infants older than 3 months; a finding that was unexpected and has not been previously reported to our knowledge.”

• (Blair et al. 2014)
Why we care and can’t resist them: Our babies are cute and fat for a reason! (9 to 12 % fat)

Parents evolved a biology underlying their responses to their babies.

“What’s not to love about me..You’ll do my bidding, won’t ya?”

Except when they are not....
For example…What exactly are the care-eliciting characteristics i.e. that evokes the “cute response”?

1. Bigger heads than predicted by body size; long trajectory of brain growth..
2. Lack of hair, or mature hair, baldness?
3. Bigger eyes (and ears) relatively, positioned lower in middle of face,
4. Locomotor awkwardness (wobbling)
5. Chubby cheeks, rounded (soft) curves;
6. High pitched voice, soft voice; soft skin..
7. Olfactory cues? How babies smell
Cute Response? Making babies irresistible.
WE feel good when watching and engaging with babies. Dopamine reward system kicks in.....
Do partnering and fatherhood cause T to decline? Fathering in the Philippines

Gettler et al
2011 PNAS

(N=839 men)
Is T lower among fathers providing childcare?

Gettler et al., 2011

Adjusted for psychosocial stress, sleep quality, and number of children.

Gettler et al. 2012
Dad’s evolved a paternal biology!

2012 Gettler LT, McKenna JJ, Agustín SS, McDade TW, Kuzawa CW. (2012)

“Does cosleeping contribute to lower testosterone levels in fathers? Evidence from the Philippines.” Plos One 7:9; e41559

Yes, it does, reflecting a response designed to maximize male sensitivity to needs of their babies
T also lower among cosleeping fathers

Gettler, McKenna et al (2011) Plos One
Our mammalian, *primate legacy*, is characterized by intense continuous maternal contact (day and night) and prolonged childhoods to bolster and buffer vulnerable immature infants and children.

Primate infants are contact seekers!
Flamboyant primate infants need to convince Mom “I’m worth it” I’m special! I will survive! I’m really cute so..give me a chance!
Notice the baby learning and observing her mother’s fear...a ring side seat to learning social rank and position
• Flamboyant Infants
Negative Effects of Shortterm Mother-Infant Separation (Nonhuman primates)

- immunological compromises (depressed antibody count);
- increased ACTH stress hormones
- cardiac arrhythmias
- breathing irregularities
- depressed body temperature
- sleep patterns disrupted
- behavioral abnormalities (excessive self-stimulation, hyperactivity, anaclitic depression)
3-day separation: induces physiological changes (immune, system, heart rate, sleep, cortisol, loss of body temperature..

anaclitic depression:
• hyperactivity
• conservation-withdrawal;
• death or recovery

Benefits of Contact (Skin-to-Skin) Newborns

- axillary and skin temperatures significantly higher
- blood glucose levels higher; oxygen saturation increased
- less frequent crying, shorter average duration
- preserve glycogen stores
- nursing established earlier, more firmly
- accelerated weight gain

Figure 7. Mean skin temperature (abdomen) of human neonates given immediate maternal-infant contact (placed on mother’s bare chest after cutting the umbilicus) and control neonates (placed in a radiant-heated Kreiselman crib) as a function of time after delivery. Data are replotted from Färdig (1980).

Massaged Babies

- gained weight 47% faster (per day),
- were more alert,
- left hospital 6 days earlier than non-treated babies (Field et al 1987),
- touch stimulates the vagus nerve (to stimulate the gastro-intestinal tract making digestion more efficient;
- facilitates endorphin release reducing stress; Stress cortisol levels
Breathing mechanical Teddy Bear!
(reduces infant apneas by 60%)
(Evelyn Thoman 1985)
Kangaroo Dads!
Its not just about sex of the parent..but a warm loving body.
Figure 1

TYPICAL INFANT TEMPERATURE (°C) PATTERN DURING PATERNAL KANGAROO CARE

Legend: ● = Tympanic Core Temperature (CT) □ = Abdominal Temperature (AT) ○ = Toe Temperature (TT)

Graph Label: LLLO - PATC202 Date: 02NOV92
Courtesy of Susan Ludington - UCLA School of Nursing
What Science Tells Us …
Baby Room

Infra Red and Audio

Revolving Camera/Close-Up Capacities
Parental Bedroom With Infra Red Lights, Audio Recording Devices And Cameras Embedded in Ceiling
Choice of child care “practice” has physiological consequences for infant development

Choice of Routine Sleeping Arrangement

Cosleeping (?) Solitary Sleeping (?)

choice affects:

breastfeeding duration, frequency, infant sleep position, arousal patterns, sleep architecture, maternal inspections, thermal and CO2 environment, infant crying, heart rate and breathing, emotional (interactional) expectations from parent, sensitivity to presence of “other”
Contrast solitary infant sleep with this...*long term multi- sensory stimuli and affection (over time)*
Co-sleeping *in the form of* Bedsharing: Increased protection for arousal deficient infants?

Mean Duration of Stage 3-4 Sleep: Why Important?

- Schechtman et al. report that, at 3-4 months of age, siblings of SIDS victims display increased integrated delta amplitude, in early morning hours compared with controls;
- Siblings of SIDS and ALTE infants: deficient arousal responses to hypoxia or hypercapnia;
- SIDS victims: more difficulty awakening from sleep, fewer movements;

Mosko et al. 1997 *Sleep*
Over 8 hours of sleep approximately 12% of the time mothers and infants are doing the exact same thing at the same time, because the other is doing it.

Synchronicity of Mother-Infant Sleep and Wake: Percent Simultaneous Activity Time (“SAT” on routine nights)
• Infant-induced maternal arousal.

• Maternal-induced infant arousal.
Synchronous breathing pauses of cosleeping mother-infant pairs.

### EFFECTS OF BEDSHARING ON INFANT SLEEP

**Bedsharing Night vs. Solitary Night**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Bedsharing Night</th>
<th>Solitary Night</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Wakefulness During Sleep</strong></td>
<td>↓14%</td>
<td>0.008</td>
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<td><strong>Sleep Stage %’s (of TST)</strong></td>
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<tr>
<td>% Stage 3-4</td>
<td>↓4%</td>
<td>&lt;0.001</td>
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<tr>
<td>% Stage 1-2</td>
<td>↑3%</td>
<td>0.036</td>
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<tr>
<td>% Stage REM</td>
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<tr>
<td><strong>Mean Stage Durations</strong></td>
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<tr>
<td>Stage 3-4</td>
<td>↓16%</td>
<td>0.027</td>
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<tr>
<td>Stage 1-2</td>
<td>↑16%</td>
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<td>Stage REM</td>
<td>↑26%</td>
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<tr>
<td>Waking</td>
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<tr>
<td><strong>Arousal Frequency (/hr)</strong></td>
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<tr>
<td>Stage 3-4</td>
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<tr>
<td>EWs</td>
<td>↑38%</td>
<td>0.014</td>
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<tr>
<td>TAs</td>
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<td>Stage 1-2</td>
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<tr>
<td>Stage REM</td>
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<tr>
<td>EWs</td>
<td>↑35%</td>
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<tr>
<td>TAs</td>
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</table>

Table reflects results of 2x2 repeated measures ANOVA (laboratory sleeping condition x routine sleeping condition). Entries show significant (p<0.05) effects of laboratory condition (BN vs SN). (Mosko et al 1996)
### EFFECTS OF BEDSHARING ON MATERNAL SLEEP

#### Bedsharing Night vs Solitary Night

<table>
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<td>4%</td>
<td>4%</td>
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<td>% Stage 1-2</td>
<td>4%</td>
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<td>Stage 1-2</td>
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<td>Stage REM</td>
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<tr>
<td>Waking</td>
<td>62%</td>
<td>62%</td>
<td>&lt;0.001</td>
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<tr>
<td>Arousal Frequency (/hr)</td>
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<td>Stage 3-4</td>
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<tr>
<td>EWs</td>
<td>67%</td>
<td>67%</td>
<td>&lt;0.001</td>
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(*see Mosko, Richard, McKenna 1997 *Sleep* 20 (2) 142-150)*
Observing and Physiologically Recording Babies And Mothers Sleeping and Breastfeeding (Together and Apart)

- Lighter sleep (less stage 3-4, more stage 1-2)
- More Diverse Sleep (greater number of stage changes)
- Longer Sleep In Minutes
- Breastfeeding Doubles or Triples
- Increased Interactions, Vocalizations, Movements
- Physiological Unpredictability For Both
- Sleep Positions and Mutual Orientations Change
- More transient and epochal mutual arousals or partner-induced arousals
- Increased Sleep-Wake Stage Synchrony
- Less crying, More Maternal Interventions
- More Heart Rate and Breathing Variability
- Sub-normal body Temperatures in Solitary Sleeping Infants
- Shift in average duration, frequency, and distribution of obstructive and central apneas per stage of sleep

Photo: Max Aguillero-Hellwig
Discover Magazine 1992

Mother-infant Simultaneous Polysomnography
Consider the infant….

recall the confluence of repeated, nightly, rich sensory regulation when cosleeping with breastfeeding for the neonate/infant

(a potpurri of sustained, accumulating neurological stimulation)
<table>
<thead>
<tr>
<th>Study Date</th>
<th>Methods</th>
<th>Age of Subjects</th>
<th>General Findings Compared to Solitary Sleepers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldberg and Keller (2007)</td>
<td>Parental likert scales and interviews;</td>
<td>Two year olds</td>
<td>Co-sleepers are more secure being left alone and able to initiate problem solving in absence of adult</td>
</tr>
<tr>
<td>Heron (1994)</td>
<td>Great Britain, 250 children, parental reports/ratings</td>
<td>18-24 months</td>
<td>Co-sleepers have fewer tantrums, more in control of emotions, less fearful, happier</td>
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<tr>
<td>Okami, Wesiner, Olmstead (2004)</td>
<td>Longitudinal Interview and Questionnaire Data</td>
<td>6 years</td>
<td>Increased cognitive capacity of 6 year old bedsharing children!</td>
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</tbody>
</table>

Does this physiology translate to behavioral effects? Consider the toddler...and juvenile.
<table>
<thead>
<tr>
<th>Study Date</th>
<th>Methods</th>
<th>Age of Subjects</th>
<th>General Findings Compared to Solitary Sleepers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbes and Weiss et al</td>
<td>86 children living on military base</td>
<td>2-13 years of age</td>
<td>Co-sleepers have less emotional problems, under-represented in psychiatric population; higher rankings on comportment by teachers;</td>
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<td>1992</td>
<td>Base records of psychiatric visits;</td>
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<td>Teacher reports; Parent reports ;;</td>
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<tr>
<td>Crawford (1994)</td>
<td>Interviews and questionnaire</td>
<td>19-23 years of age</td>
<td>Co-sleeping women (as children) had higher self esteem and confidence and comfort with intimacy;</td>
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<tr>
<td>Lewis and Janda (1988)</td>
<td>Questionnaire...having slept with</td>
<td>College age 18-23, men and woman</td>
<td>Co-sleeping males have higher self esteem, less anxiety and less fearfulness, report more frequent sex; Females: more comfortable with intimacy, higher self esteem;</td>
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<td>parents between birth and five years</td>
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<tr>
<td>Mosenkis (1997)</td>
<td>Survey and Questionnaire Data administered in New York and Chicago to three ethnic groups (1400 adults) African American, Puerto Ricans, Mexican Dominicans;</td>
<td>19-26</td>
<td>Increased optimism about life and their position in life; enhanced satisfaction with occupation; enhanced family proximity and relationships. Overall, happier.</td>
</tr>
</tbody>
</table>
Compared with solitary sleeping, in western culture maternal choice to co-sleep (and breastfeed) produces a suite of physiological, psychological or personality attributes including but not limited to:

- less fearfulness
- higher self-esteem
- more comfort with affection and intimacy
- *Increased sex (?)*
- a stronger sense of well-being, being satisfied, and/or optimism and, as adults..
- *Increased control of emotions?*
- Perhaps...a less ‘collectivist’ way of thinking i.e. being less afraid to make one’s own decision and, if necessary to reject social norms...*such as to decide to co-sleep*
- *therein increasing the likelihood that co-sleeping children, as adults, will be in a position to make those same kinds of decisions*.
In summary....it would appear that there are continuities set in motion inter-generationally from decisions about infant care practices that reflect how mothers interact with her own cultural environment...including decisions about whether or not (in this case) to co-sleep that potentially impact their infants and children physically and behaviorally as the studies here suggest...

potentially replicating in those children the very attributes that led mothers to make those decisions in the first place...

Recall..first the mothers decision to breastfeed and co-sleep with her infant....
Happier toddlers, juveniles, less fearful, confident to make new friends, cognitively advanced producing… (next)
Comfort with affection, higher self esteem creating... (next)
Less fearful
more optimistic
adults …trust
own judgments
and ,finally..
(next)
Become parents mimicking own experiences effecting their own children… in the same ways.

Less fearful, more optimistic… trust own judgments, and, finally,

Comfortable with affection, higher self esteem

Happier, less fearful, confident to make new friends, cognitively advanced

Co-sleeping: more touch, more reassurance