Safe Infant Sleep

As most parents are aware, infant and child sleep is a hot topic on multiple levels. New parenthood and early infancy is particularly challenging, when babies are in their "4th trimester" and adjusting to life outside the womb. Humans are biologically wired to crave constant contact from parents and caregivers during this time—which is why they will cry, grunt, squirm, and fight against a swaddle when separated from their mother. Yet healthcare providers and the infant industry warn to "never bedshare." This places exhausted parents in a difficult position when their breastfed baby won't sleep alone, but they can't continue the frustrating nighttime cycle of trying to make this happen.

A patient of mine once said, "bedsharing "everyone's dirty little secret – everyone is afraid to talk about it because of the stigma or lectures, but everyone is doing it." However, from a breastfeeding medicine and perinatal mental health perspective, we need to talk openly about the variety of safe sleeping options for parents. Individual families can take this information and decide what works best for their unique situation. But if we don't talk about safe bedsharing, parents end up in unsafe situations on a couch or recliner because they are so fearful of bringing a baby into bed. I tell patients it's like talking about teenage sex – either we can hope that teenagers aren't having sex, or we can talk to them about how to do it safely if it does occur.

The baby industry is BIG BUSINESS. High-tech basinets, monitors, swaddles, sound machines, sleep consultants, and all other infant sleep products are marketed to make parents believe they need to spend hundreds (and even thousands) of dollars to get some rest. A mother offering her breast while lying safely and comfortably next to her baby improves maternal-infant health and reduces health care costs—but it doesn't make money for anyone. The gift of growing and nurturing a baby is a unique privilege of motherhood, and it's important for women and their partners to recognize their value when negotiating new parenthood.

Below are excerpts from the latest book from James McKenna, PhD, one of the world's experts on safe infant sleep and breastfeeding. Image of the proper way to bedshare is reproduced with permission.

Safety First: The Proper Way to Bedshare

A sketch of safe bedsharing shows parents who do not smoke, are sober, have chosen to bedshare, and are breastfeeding their baby. The bed frame has been completely removed and the mattress has been placed at the center of the room away from walls and furniture. Light blankets and firm, square pillows are being used. No older children, pets, or stuffed animals are in bed.

2

Excerpts from *Safe Infant Sleep*
By James McKenna, PhD

"A growing number of families are choosing to bedshare – whether intentionally or out of necessity, but these parents have little or no knowledge of what constitutes a safe bedsharing environment. Tragically, by refusing to discuss or offer guidelines for safe bedsharing practices, public health officials and healthcare providers are contributing to the bedsharing deaths they are trying to prevent. While most babies sleep in more than one place during the night, parents have admitted that they are more likely to report where they are told their baby is supposed to sleep – rather than where they actually sleep.

'Where should my baby sleep?' That question can't be answered by any pediatrician, healthcare institution, or researcher. This decision is only yours to make, and should be based on a thorough understanding of the risk and benefits, your overall family circumstances, and the parameters of the sleep space. Consider all possible choices and to become as informed as possible, matching what you learn with what you think will work the best for your family."

What is "Breastsleeping"?

"Breastsleeping" is a kind of bedsharing between a mother and infant, occurring in an environment free from proven risk factors. It is the safest form of bedsharing, practiced worldwide for all of human history. Breastsleeping enhances sensitivity between mother and infant, encourages light sleep, and reduces the risk of danger in a variety of other ways.

- **It is not possible to document biologically normal human infant sleep outside of the breastsleeping context.** The ongoing sensory exchanges (of touch, sound, smell, and taste) between mother and infant during breastfeeding – and the breastmilk itself significantly change infant and maternal sleep architecture, infant metabolism, the efficiency of the infant's immune system, and the infant's microbiome (helpful bacteria). Breastsleeping mothers and babies have more social engagements and communication opportunities that enhance cognitive development.

Humans are born the most neurologically immature primate, with only 25% of their adult brain volume. **They are dependent physiologically, socially, and psychologically on the presence of a caregiver to an unprecedented degree and length of time compared to other mammals.** Human babies are unable to efficiently regulate their body temperature without a caregiver being in proximity, and they are unable to make effective antibodies, which naturally occur in breastmilk. It also regulates absorption of calories, stress hormone levels, and oxygenation.

- Parents worry when their infant dislikes sleeping alone or craves their attention. This ignores the fact that infants are biologically contact seekers who are dependent on parents and caregivers.

Frequent contact with the mother's body strengthens and stabilizes an infant's neurological scaffolding and overall brain architecture. This provides the basis for the infant's growing communication skills, emotionality, and regulation of response to his or her own needs. The human infant's central nervous system depends on having a microenvironment that is similar to the maternal uterine environment from which it came, an environment full of sensory exchanges.

- Young neurons in the brain undesignated at birth have been shown to alter their function and location based on what the infant is experiencing in his or her environment. More contact with mother's body can make this neurological scaffolding more stable and effective, providing base for the infant's cognitive and emotional functions.

It's our biology. Many mammals leave their animals hidden away in shrubs and lairs while they forage for food ("nested species"). For example, deer milk is 19% fat, and fawns are alone for as long as 8-10 hours. Primate mammals are "carry species." Our milk contains more water and sugar, less protein, and 10-20% less fat than that of the nested species.

45-60 million years of evolution – through which primate infants slept only in their mother's arms – can't be wrong.

- Perpetuating the idea that the mother's body represents inherent threat to her infant is not only scientifically unsupportable, but far more dangerous than the idea of cosleeping itself.
- Our evolutionary biology, in which our ancestors held their infants in trees, necessitated a level of conscious during sleep and a high-degree of maternal sleep-related monitoring.
- The nutritional needs of breastfeeding infants influences the length of the human sleep cycle. Due to the low calorie composition of human breastmilk and the human infant's underdeveloped gut, infants must nurse around the clock.
- Breastfed infants have vastly different sleep patterns than infants fed cow's milk. Cow's milk is designed for a cow's brain and body growth rates, and has different concentrations of protein and nutrients.
- In the past, nighttime separation from the mother would lead to almost certain death by predators, so babies who cried and successfully retrieved their missing caregivers would survive. If we have to worry about any babies, it's those who passively accept sleeping alone since it is in their best interest to protest such an arrangement.

Sleep Environments

"Cosleeping" does not exclusively refer to bedsharing and breastsleeping, but also encompasses roomsharing, or any situation in which parents and infants are within arms' reach but not necessarily sleeping on the same surface.
To speak about cosleeping without specifying the type of cosleeping is to create more controversy and confusion than is necessary.

- Cosleeping can be an ever-evolving process- babies may move from a crib, where they are placed at the beginning of the night, to their parent's bed, to a bassinet, and back again.'

Culture

"There are racial, class, social, and political biases that run through cosleeping data, and the advice you get from many healthcare providers if often based on accepted practice instead of accurate, evidence-based information. **Current recommendations for sleep originated mainly from white men, many of whom have never cared for their own infants, and based their conclusions not on scientific evidence, but their ideological beliefs.**

In most cultures around the world, people sleep in the same room with their different family members in one form or another throughout their lives. The idea there are cutoffs is a Western cultural meme. **There are very few cultures that would have ever thought it was acceptable or desirable to have babies sleeping alone.** Most cultures that routinely practice cosleeping have very low rates of SIDS. SIDS is among the lowest in the world in Hong Kong, where cosleeping is extremely common.

Mothers have been misled to believe that breastsleeping is a pathology, or abnormal behavior, when, in fact, it is a fundamental human adaptation that should be the default arrangement. **If same-surface cosleeping was too dangerous, infants and parents would have evolved some biologically-based alternative or humankind would have gone extinct.** Modern furniture and sleep accoutrements, drug and alcohol use, and formula feeding were not part of the equation for most of human evolution.

The general opinion today is that infants should be taught from the beginning to sleep through the night, to be on a routine, and to expect few – if any – interventions from parents. **A common, relatively recent recommendation has been to never let an infant fall asleep at the breast, which directly conflicts with breastsleeping evolution. It offers no proven benefits for infants, and clearly reflects a long history of infant care recommendations based on social ideology, personal preference, and folk myth.** It is denying infants an evolved human behavior.

There is nothing wrong with most babies … rather, there is something wrong with the sleep model that is being culturally imposed on them, and the set of expectations it produces.

Western cultures in particular have pathologized the natural sleep patterns of breastfeeding infants. An infant's most important job in the first year of life is to wake up all night to breastfeed. Babies are essentially being victimized simply for being babies and crying when nobody is there to nurture or feed them, a behavior that evolved specifically to retrieve the caregiver on whose body the infant depends for survival.

SIDS

What really causes SIDS? Bedsharing is not actually a risk factor.

- **An infant's failure to arouse from a deep sleep is a major contributing factor.** Infants do not have the same self-arousal mechanisms that older children and adults have. It is possible for babies to fall asleep and not wake up without external stimulation, because they have not yet developed the ability to wake itself. SIDS rates declines significantly at four months as infants begin to develop these capabilities, and decline even more so at six months.
- Underdeveloped self-arousal mechanisms are much more likely to be a problem with combined with prematurity and other congenital risk factors. SIDS victims have evidence of brainstem abnormalities in neurotransmitters that are responsible for arousal. This explains why some infants die and others do not when placed in the same sleep environment, and why some do even when placed in a safe sleep environment.
- **External risk factors exacerbate underdeveloped arousal mechanisms.** This include the following:
    - Maternal smoking during pregnancy
    - Formula
    - Parental smoking in general
    - Lack of bodily contact and stimulation
    - Deep, uninterrupted sleep
    - Infant sleeping on their stomach
    - Prematurity
    - Overheating
    - Infants sleeping in a separate room from parents

At least 60% of SIDS deaths could be avoided if moms didn't smoke during pregnancy, they breastfed, and they maintained a smoke-free environment postpartum. Home monitoring systems have no evidence that they reduce the risk of SIDS. Parents using these devices have higher stress scores, greater fatigue, and poorer overall health.

Infants who breastsleep are at the lowest risk of SIDS. This was unintentionally proven in an international study in 2000 that was not widely publicized and for which researchers called it a "paradox." **The relative risk of death for a full-term, normal-weight infant who sleep in a safely configured bed with a breastfeeding mother is far smaller than that of infants who sleep in a crib in another room.**

How is breastsleeping so protective?

- More maternal inspections, more infant arousals, less deep sleep
- The small movements and vocalizations of a parent help a baby stay in a lighter phase of sleep and wake more frequently. These brief awakenings are called "partner-induced arousals" – for example, when a baby momentarily opens his eyes after the mom coughs.
- The smell of mom's breastmilk prevents an infant from spending too much time in deep sleep.
- Infants and mothers wake within 1-2 seconds of each other stirring. Breastsleeping babies spend more time in stage I and II sleep, rather than the deeper stage III and IV. Lighter sleep is more physiologically appropriate for infants.
- Human infants are extremely sensitive to the breathing movements of another human, and apnea-prone infants have far fewer apneic episodes next to someone else breathing.
- When moms exhale carbon dioxide and an infant is sleeping close to mom, this carbon dioxide triggers the nerve controlling the diaphragm to move and trigger the baby to breathe. It is also thought that exhaled breath of mom caressing the infant's cheek is another autoregulatory factor.
- Pacifiers are used as a tool to prevent SIDS, as this sucking stimulates the infant. Mom's nipples do the same.
- Sleeping supine (on their back) is the only way an infant can get to and from mom's breast.
- Breastmilk contains immunoglobulin and cytokines, which prevent infections that are believed to contribute to SIDS
- Maternal breast temperature matches infant core temperature needs

SIDS is not normally, if at all, caused by a baby sleeping in the same bed as his breastfeeding mothers, in the absence of other risk factors. **In the same way that an infant who dies of SIDS in a crib is not a victim of the crib itself, an infant who dies while bedsharing cannot be said to have died simply because of their location in an adult bed,** though this is typically the cited cause. SIDS rates were the highest in the 1980s, when infants were placed on their stomachs, in rooms separate from their parents, and were fed formula. Again, it's not the crib that caused the death – it's the circumstances.

Problems with the Research Statistics

Unfortunately, the way the research is conducted and statistics are obtained, **if a baby dies lying on its stomach in a bedsharing situation – bedsharing is blamed, not the stomach sleeping.** Yet a breastfed baby can only feed from its back and naturally lies on its back when finishing a feed. It is impossible for them to turn onto their stomach unless placed that way. Similarly, parents being desensitized by alcohol or drugs is ignored and bedsharing is attributed as the cause of death.

Too often, coroners and public health officials report that cosleeping deaths are "preventable," even if the parents are practicing safe bedsharing. **It is entirely possible for an infant to die in an adult bed due to reasons that are not connected to the sleep location**, and could not have been foreseen by parents.

Whether involving crib or bed deaths, risky sleep practices leading to infant deaths are more likely to occur when parents lack access to comprehensive safety information. Information is blocked because parents are judged to be incapable of maintaining a safe bedsharing environment, so public health officials warn "just don't do it."

The AAP, which receives large amounts of funding from the formula industry, released papers in 2005, 2011, and 2014 labeling any and all bedsharing as "hazardous." Research provided by infant safe sleep researchers was not included in their recommendations, and neither were recommendations from the Breastfeeding Subcommittee.

Public health recommendations fail to reflect that bedsharing safety cannot be quantified accurately based solely on location**. The most common missing data happens to be critical – whether or not drugs or alcohol were involved in each case of infant death. Further, the term "adult bed" includes sofas, sofa chairs, recliners, makeshift beds, and waterbeds – which are known to be unsafe cosleeping environments, but account for the largest portion of reported bedsharing deaths.** Other studies included "bedsharing deaths" as occurrences in which the infant had slept at some point in an adult bed in the previous two weeks, but had actually died in a crib.

A US study featured by the US Consumer Product Safety Commission in 1999 highlighted infant deaths occurring in an adult "bed" (which included infants sleeping on water beds, chairs, and recliners). **Even in these unsafe "bed" sharing situations, infants dying alone in their cribs still represented the highest proportion of mortality (though this was not made clear).**

In 2002, the Juvenile Products Manufacturers Association (I.e. the crib industry) offered to help financing continuing promotion of anti-cosleeping messages to doctors, parents, toys stores, and offered free "continuing education" to healthcare providers.

Structural Racism

SIDS rates increase in degrees of racism, poverty, and marginalization, especially in urban locales and indigenous people. This includes significant increases in infant illness and mortality before issues of sleeping arrangements are even considered. In addition, there is a high prevalence of black babies being born prematurely, which is an independent risk factor for SIDS. Black mothers in the US initiate breastfeeding at far lower rates than other ethnic groups.

Breastfed infants are 80% less likely to die before one year of age compared to those who never breastfed, even controlling for low birth weight. **Poorer communities have a disproportionate number of bedsharing deaths compared to white and other sub-groups practicing the same sleeping arrangement.**

There is a significant difference between elective and chaotic bedsharing. Elective bedsharing occurs when mothers make an informed decision to bedshare for the purpose of nurturing and breastfeeding, and are knowledgeable about avoiding risk factors. Chaotic bedsharing is practiced out of necessity rather than intentional parenting technique. Parents sleep with their infants because of a lack of choice (no other beds or cribs in the house, presence of rodents, or numerous other factors). They tend to be less knowledgeable about risk factors such as smoking, drugs, alcohol, and unsafe beds. Unfortunately, poverty and its associated stressors are more likely to cause families living under these conditions to practice unsafe bedsharing.

The AAP perspective is that bedsharing is always dangerous, so they dismiss the validity of maternal instincts and agency and the legitimate choices made by millions of mothers in the US and abroad.

- Studies do not report the number of infants who bedshared and did well.
- Studies have inconsistencies in the data, in which the same behavior can have vastly different outcomes depending on the presence or absence of certain cofactors. The AAP has continued to ignore the fact that there are many modifiable factors that contribute to the safety of bedsharing, and instead chose to condemn the practice in all of its forms, as if they share the same level of risk.
- In making the eradication of any and all bedsharing their primary goal, the AAP reviewed lines of evidence with a selective bias that reflects Western social value of individualism and faith in technology over maternal bodies.

The more authorities push against bedsharing, the more parents are afraid of it, and the more likely they are to fall asleep in dangerous cosleeping arrangements. The message from authorities is so strongly opposed to sleeping in bed with a baby that many parents will think nighttime feedings are safer on the couch or a recliner.

But What About Getting Them OUT of Our Bed?

If any developmental differences exists, the opposite of common beliefs is true: it is cosleeping children, and not solitary sleeping children, who appear to be more independent. Unfortunately, the cultural legacy of independent sleep remains truly ingrained in Western societies, perpetuated by pediatric "sleep experts." Separate sleep is facilitated by formula feeding. And so we arrive at the classic image of a sleeping infant in Western industrialized societies: alone, detached, sucking on a bottle, without any parental contact.

- Infants and children are more content sleeping and waking on their own time and in the company of others, which enhances their feelings of safety, security, and being protected.

Letting babies cry themselves to sleep is the advice given to parents with the goal of raising children that are self-reliant and able to comfort themselves, and comfortable with aloneness. The entire idea is a social construct. All children will eventually be able to wake up and fall asleep again by themselves. **Sleep training offers no actual advantage, and the most careful research completed thus far actually leads to the opposite conclusion.**

- Intervention strategies applied before six months risk unintended outcomes, including increased amounts of problem crying, premature cessation of breastfeeding, worsened maternal anxiety, and if the infant is required to sleep in a separate room from a caregiver, increased SIDS.

The normal development of the infant sleep-wake cycle occurs late in the first year of life for most infants. Hence, parents need not focus on sleep training methods and other interventions, because failing to sleep through the night is actually more appropriate.

For humans, early experiences and deprivation of maternal contact and proximity can influence the activity of their genes, affecting psychological resilience, metabolism, and immune functionality. **"High contact" infants exhibit less stress response when presented with a stressful challenge.** Different glucocorticoid receptor genes present in low-contact versus high-contact babies vary due to the methylation (epigenetic) process, and can alter the underlying genome of the infant, which, in turn, alters stress reactivity.

Babies feel secure hearing the voices of their siblings and parents while sleeping. A silent environment for the infant does nothing but condition the infant to fall asleep in silence. **When in doubt, keep in mind that an infant can protect itself from too much stimulation – but it can't protect itself from too little stimulation.** Outside of bedsharing, **baby wearing contributes to infant safety because it helps development of baby neck muscles**, which can be crucial if a baby needs to move his or her head away from something obstructing oxygen flow. Baby wearing promotes incredibly important intellectual and social benefits for infants.

Cosleeping helps a child develop comfort with physical affection. They develop friends more easily, initiate problem solving more independently, and can be by themselves with less stress. Bedsharing facilitates the development of empathy and autonomy, as well as the ability to interrelate and to become interdependent with others.

Your partner can help a baby night wean by walking with the baby to help them learn a new association. Your partner's role can be very rewarding and help strengthen their attachment relationship with the baby.

Conclusions

Mother-infant cosleeping, in all its diverse forms, is a universal human experience and biological necessity. Putting the blame for chaotic cosleeping deaths on bedsharing itself, rather than on the conditions and diverse social circumstances that make the practice safe for some subgroups, but not others, is morally and scientifically wrong. **Our conversations should instead focus on seeking answers for why the safety of bedsharing, and infant mortality in general, varies so much between socioeconomic and racial subgroups.**

If physicians were to realize how many parents are bedsharing, whether breastsleeping or not, they would be more aware of the important and beneficial functions breastsleeping has played throughout our evolution, and might come to understand why this practice continues.