

## CONFESSIONS OF A CLOSET CO-SLEEPER: THE SCIENCE *by Frank Roman MD JD*

For any latecomers, due to the complexity and controversial nature of co-sleeping, it was addressed in two different editions of Focus. Part one in the July-August issue covered perceptions and the author's personal experience while part two, this issue, will discuss the scientific data.

First and foremost it is important to clarify the terms co-sleeping and bed sharing which I have been using interchangeably and on further review they describe different situations. Specifically, co-sleeping is defined as a parent sleeping in the same room as their infant versus bed sharing which is defined as sharing the same sleep surface, most commonly an adult bed, with the infant. Also important to clarify is that this article will try to summarize the latest scientific data within the space constraints allowed by my editor hopefully without over simplifying and taking certain conclusions out of context. If

any reader is interested in the actual references, they can contact the author at C B C F 5 7 @ y a h o o . c o m . Surprisingly most of the information discussed in this article is over ten years old despite the explosion in interest, knowledge, and expertise in sleep medicine. That is not to say that the information is obsolete. Again, part of the reasons for the limited data is the almost taboo nature of co-sleeping in Western society. For example, in what is considered the definitive textbook in sleep medicine, *Principles and Practices of Sleep Medicine*, (Fourth Edition 2005 M. Kryger, T. Roth and W. Dement editors) co-sleeping is covered in a scant two paragraphs on page 1281 in chapter 109, Pregnancy and the Post-partum. The focus of these two paragraphs is on the relationship of co-sleeping with sudden infant death syndrome and quality of sleep of the bed sharing mother. To the author's knowledge the American Academy of Sleep Medicine does not have a policy statement on co-sleeping or has knowledge of one being released in the near foreseeable future. Also as stated in part one, bed sharing was most recently addressed in the policy statement published by the American Academy of Pediatrics: The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts, Controversies Regarding the Sleeping Environment, and New Variables to Consider in Reducing Risks (Pediatrics Volume 116 No. 5 November 2005) where in summary bed sharing was not recommended.

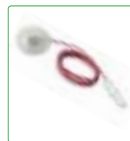
Specifically, the task force on sudden infant death syndrome pointed out that although electrophysiological and behavioral studies offered a strong case for its effect in facilitating breast-feeding and the enhancement of maternal infant bonding, several studies of bed sharing did show that it could be hazardous under certain conditions. The risk of sudden infant death syndrome seemed to be particularly high when there were multiple bed sharers or when the bed sharer had consumed alcohol or was overly tired. Another study suggested that the risk was significant only when the bed sharing occurred for more than one hour or for the whole night. However, they pointed out growing evidence that room sharing, in other words the infant sleeping in the parent's room without bed sharing, was associated with a reduced risk of SIDS. It also went on to quote data from the European Concerted Action on SIDS study, which led to the recommendation by its authors that the most protective sleep setting for an infant is in a crib in the parent's room. Again the basis was solely on the issue of sudden infant death syndrome. Based on the limited data presented the task force in this policy statement



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recommended a separate but proximate sleeping environment. It recommended that infants not bed share during sleep. The infants may be brought into the bed for nursing or comforting but should be returned to their own crib when the parent is ready to return to sleep and then under no circumstances should a parent sleep with an infant on a couch or arm chair as this is thought to be very dangerous. Another noteworthy recommendation was to avoid commercial devices marketed to reduce the risk of SIDS. It also went on to explain that although various devices have been developed to maintain sleep position or to reduce the risk of re-breathing, none have been tested sufficiently to show efficacy or safety. Out of curiosity the author did an Ebay search looking for some of these devices. Of particular note is the 100% cage free infant body suit for co-sleeping which I am not sure what is its purpose, the Humanity bed top co-sleeping pillow device, and finally the Tres Tria™ pregnancy pillow and co-sleeping bolster, which on the website went on to explain that it is the Latin reference to the number three, eluding to the three in a bed co-bolster designed for use as an innovative co-sleeping aid.

The lack of attention and importance that the field of sleep medicine has given this topic is woefully inconsistent with the present world. In a survey of 127 cultures world wide from which reliable data on sleeping arrangements were obtained, 79% of these cultures had infants who slept in the parents room sharing the same bed or sleeping surface for at least 45% of these cultures. Industrialized societies have adopted the practice of solitary sleeping in separate room quarters for infants with Japan being an exception where co-sleeping is commonplace. Incidentally Japan has one of the lowest incidents of sudden infant death syndrome.

Some of the concerns regarding co-sleeping can arguably be traced back to the U.S. Consumer Product Safety Commission (CPSC) study. Specifically, researchers at the U.S. Consumer

Product Safety Commission reviewed death certificates from 1990 through 1997 and found 515 children under the age of two that had died while they slept in adult beds. Of these deaths, 125 were caused by suffocation when a parent, or another adult, or sibling sleeping in the same bed, rolled over on top of the child. 394 of these were cases were suffocated by bedding and bed structures; they fell between the mattress and side rail or wall, were smothered in waterbeds, or got their head trapped in the bed railings. Most of the deaths were of infants under the age of 3 months. At that time, the CPSC recommended that parents should never sleep with children under two years.

At the time of the release of this study, serious flaws were pointed out including that although the CPSC identified the number of infants said to have died in adult beds, they could not determine the number of infants sleeping in adult beds who did not die. In order to determine relative risk it is necessary to know both the numerator (deaths) and the denominator (infants who did not die). It was also pointed out that the CPSC depended entirely on what someone wrote as the cause on the death certificate. The deaths may have been certified by coroners without any medical training. Of more interest, was the argument of bias where the term overlaying or suffocation might have been used as the cause of death if the family was poor and or minority and SIDS or interstitial pneumonia was used as the cause of death if the family was Caucasian and or middle class. From a public policy standpoint, it was also criticized that it was not appropriate for a government agency, with scant medical expertise, to make pronouncements on child care practices based on this one retrospective review.

Dr. James McKenna and his associates have been one of the most active advocates in support of co-sleeping. For anyone interested in the subject of co-sleeping I strongly recommend reviewing his work. As far back as 1986 Dr. McKenna *continued on page 69*

has argued that a human infant's co-sleeping partner's touch, movement, breathing sounds, temperature, and gas (CO<sub>2</sub>) exchange and sleep vocalizations has certain influences on infants sleep, breathing, and arousal components. One of his studies revealed that on average co-sleeping mothers and infants: (1) experienced more arousals than they do when sleeping alone, (2) exhibit levels of arousal overlap, (3) exhibit more frequent sleep stage shifts (4) spend more time at the same time, in the same sleep stage or awake status while in the same bed (5) infants spent less time in non-rapid eye movement compared with when they slept alone. Two other interesting findings were that infants were responsible for positioning themselves with respect to their mothers and mostly slept on their sides or backs diagonally within a few inches of the mother's face. Almost always the mother's faced their infants during sleep and vice versa. Overall the finding that co-sleeping mothers and infants exhibit synchronous, partner induced physiological arousals was potentially important because of the suspected relationship between infantile arousal deficiencies in some cases of SIDS. It was felt that co-sleeping provided the infant with increased opportunities to practice arousing therefore becoming more proficient at it. In his work he has also pointed out that the human infant is one of the least neurologically mature mammals at birth. They experience the longest delays in both social and biological maturation. 75% of human brain growth occurs post nately. It was also pointed out that the vast majority of non-Western cultures diverse forms of parent child co-sleeping remained the predominant sleeping arrangement for infants and young children throughout the first few years of life.

Finally, McKenna's group speculated that hunting, collecting, foraging, and indeed parent infant co-sleeping represents the evolutionary context within which modern humans were designed biologically and psychosocially for most of our existence as a species on Earth. Recent mismatches between cultural changes and childcare practices and the more slowly changing biological needs of infants may emerge as a source of many physiological and psychological disorders.

Another issue that McKenna and associates addressed was the perception that bed sharing was largely negative on maternal sleep. In one study where they looked at 20 routinely bed sharing and 15 routinely solitary sleeping, breast-feeding, Hispanic mother- infant pairs comparing the mother's sleep when bed sharing to solitary sleeping infants. The infants were 11 to 15 weeks old at that time. This study demonstrated a modest reduction in the amount of Stage III and Stage IV sleep and increased Stage I and II sleep in breast feeding women. The amount of Stage REM remained unchanged. It also went on to state that contrary to popular belief bed sharing did not reduce the total sleep achieved or result in more total wake after sleep onset (WASO). In contrast, the effects of bed sharing of married, good sleepers normally demonstrated less Stage III and IV sleep and more Stage REM sleep when they bed shared versus when they slept alone. Also interesting, despite similar sleep patterns during bed sharing in the two groups, the mothers who routinely slept separately from their infants rated their sleep quality less favorably during bed sharing than did mothers who routinely bed shared. In this study, it was noted that the mothers aroused on average 30% more often when the baby was in the same bed. It seems that the mother's caretaker role is an important factor contributing to the arousal pattern during bed sharing. They speculated that more frequent

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arousals would increase mother's opportunities to monitor infants changing status. The physical proximity during bed sharing would greatly facilitate the detection of less overt changes in status. For example, changes in skin temperature, labored breathing, prolonged apnea, unsafe bedding conditions, or regurgitation that a mother could not detect when the infant slept separately and alone. Of course, attempts by child care experts to discourage parents from sharing their bed with infants was partly due to concerns about unwanted disruptions of the parents sleep. However this does not completely resolve the problem of parents sleep disruption as noted by the increase in audiovisual infant monitors purchased in this country for the sole purpose of monitoring their child's sleep.

Despite the author's best efforts to justify the role of the paternal parent in co-sleeping there were no studies demonstrating the father's involvement in co-sleeping. However the author can take comfort in the article on co-sleeping by Lauren Gabbai where she eloquently describes a study where researchers compared the effect on attachment of carrying a child in a baby carrier with a high level of physical contact to placing a child in an infant seat where there is no physical contact. After an average of eight months of using either one of the randomly assigned seats, it was found that children in the baby carrier were significantly more likely to be securely attached to their primary care giver than children in the infant seat. She then went on to imply that this physical closeness, as similar to co-sleeping can lead to more self-sufficient and well adjusted human beings in the future. That's my story and I'm sticking to it.