# Is Your Baby's Sleep a Problem?

# Or Is It Just Normal?

## *Mother-Baby Sleep Experts Weigh in on Normal Infant Sleep*


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Most new parents complain about lack of sleep. Many are also concerned that their babies have a "sleep problem," and that what they are experiencing isn't "normal." So they search books, ask friends and family--or even their doctor--what they should do about their child's problematic sleep patterns. And they worry about it—a lot.

Part of this epidemic of parental angst about children's sleep is that we live in a culture in which parents are repeatedly told that they *need* to worry about their child's sleep, that there will be dire consequences if their child doesn't get enough sleep. Another problem is that most new parents, having had little experience with children prior to having their own, have little awareness about what truly is "normal" when it comes to infant sleep.

*Simply being made aware of normal sleep patterns can help alleviate the stress and anxiety parents feel, leading to happier times for the entire family.*

## So What Is Normal?

This paper describes some of the more common sleep concerns parents have with the hope that they can see them as normal, developmental stages for their child.

# The Critical Roles of Feeding Method and Changes in Development

## "My child wakes every hour, all day and night, to feed."

Whether it's every hour, or every two hours, or even three, parents are often concerned when their young infant is waking regularly for feedings. This concern is not surprising given the focus on "sleeping through the night" that our culture pushes. But sleeping through the night is not biologically normal, especially for a breastfeeding baby.

*At the time of birth, a baby's stomach can only hold a teaspoonful worth of milk,* meaning that he or she will need to feed frequently to meet the many demands for energy

that accompany this period of growth. Although the stomach grows relatively quickly, the fat and protein content in human breast milk is much lower than in the milk of other mammals, and thus infants are required to feed often, resulting in greater night wakings (Ball, 2003; Ball, 2009).

Human breast milk, being designed for infants who need to feed on cue day *and* night, is easily and quickly digested. Formula, however, is typically made from the milk of another species–cows–and is higher in fat while also containing myriad additives that make it more difficult, and thus slower, to digest. This can affect infant sleep, resulting in unnaturally deeper infant sleep (more time spent in stage 3-4; Butte, Jensen, Moon, Glaze, & Frost Jr., 1992). Stage 3-4 is most difficult to arouse from to terminate breathing pauses. This is especially true for infants who are arousal deficient. Longer stages of Stage 3-4 sleep could potentially diminishing the infant's capacity to maintain sufficient oxygen. Even so, formula use does not necessarily provide parents with more sleep overall (Doan, Gardiner, Gay, & Lee, 2007; Kendall-Tackett, Cong, & Hale, 2011).

*Waking through the night is normal and biologically adaptive.*

Infants whose primary source of energy is breast milk will often wake frequently to nurse, something that is essential for the breastfeeding relationship to continue (Ball, 2009). However, regardless of feeding status, many infants wake regularly during the night (Weinraub, Bender, Friedman, Susman, Knoke, Bradley, et al., 2012). *Waking through the night is normal and biologically adaptive.* In fact, though it is often reported that sleep patterns consolidate in the second year, the pattern differs in breastfed children.

Breastfeeding mothers may wake more often, but report greater total sleep. For example, in a study of 6,410 mothers of infants 0 to 12 months old, exclusively breastfeeding mothers reported both more wakings and more total sleep time compared with mixed- or exclusively formula-feeding mothers (Kendall-Tackett et al., 2011). The exclusively breastfeeding mothers reported less daytime fatigue, more energy, less anger and irritability, and lower levels of depressive symptoms. Interestingly, mothers who were both breast and formula-feeding reported fewer hours of sleep than exclusively breastfeeding mothers, *and there was no significant difference between the mixed- and formula-feeding mothers on any of the outcome measures.* This is important because new mothers are often pushed to supplement to "get more rest." These results, consistent with the findings of Doan et al. (2007), suggest that *supplementing actually results in less sleep--not more.*

Night wakings continue to be common as breastfeeding infants mature. In a study of children who were breastfeeding at age two, night wakings were common throughout the second year of life. This pattern of night wakings is commonly observed in cultures where co-sleeping and full-term (aka, "extended") breastfeeding are more common (Elias, Nicolson, Bora, & Johnston, 1986).

# Night Wakings Protect Infants

Night wakings have been reported as being more common in infants who bedshare with a parent, yet the wakings and bedsharing (when done safely) may actually protect infants from SIDS (Mosko, Richard, & McKenna, 1997; Mosko, Richard, McKenna, & Drummond, 1996). The critical period for SIDS is up to eight months of age (with the peak at two to three months), and night wakings may serve as a protective mechanism. In fact, if we look at parenting historically and cross-culturally, frequent night wakings, coupled with co-sleeping and breastfeeding, are the norm for which we should be comparing other infant sleep behaviors.

## *"My child was sleeping through the night and suddenly it's stopped."*

Imagine you've been waking regularly with night feeds and arousals, but as time passes they are decreasing. Then you realize you're now sleeping in nice, long chunks. Hours of sleep all at once! And it's wonderful. Then suddenly, as quickly as it came, it's gone. Your wonderful, sleeping-through-the-night child is suddenly waking again. This experience, which is a reality for many, can cause frustration and despair accompanied by the feeling that you've done something wrong, or that you must do something to get their uninterrupted sleep back again.

Here's the thing: You didn't *do* anything. *A return to night waking after periods of sleeping through the night is entirely normal.* Many children's sleep will cycle like this for a while. In fact, researchers looking at sleep patterns have found that often between 6 and 12 months, infants who had previously been sleeping long stretches suddenly start to wake more frequently at night (Scher, 1991, 2001). In one long-term study looking at child sleep between three and 42 months found that there was *no* stability in night wakings, or even sleep duration, during this time (Scher, Epstein, & Tirosh, 2004).

## What Causes the Change in Sleeping Pattern?

There are likely a variety of reasons, unique to each child. For some, it may be a growth spurt or teething. For others, it may be a cognitive leap that has them buzzing more so than usual or the appearance of separation anxiety. Just recently a study reported that babies tend to wake more often when they are learning to crawl. And for some, we may never know the actual reason. But as children age, and each develops a circadian rhythm, they will go through cycles of sleep–some more convenient for parents than others. Parents need to be aware that these changes are entirely normal, even though they can be frustrating. Hopefully, once you know that changes are to be expected, you can be better prepared, or at least not add anxiety to the sleep disruptions you are forced to deal with once again.

### *"My child wakes up at 2 a.m., and is up for one to two hours!"*

One mother remembers very clearly the first time her daughter ended up doing this. At around 14 months, she woke up in the middle of the night and didn't seem ready or able to go back to sleep for one to two hours no matter what strategies her parents tried. This continued regularly for a couple of months. And then as quickly as it started, it stopped, and hasn't happened again in over a year.

The "why" of this is relatively unknown—although researchers are continuing to explore the physiological underlyings of sleep—but we do know that extended night wakings like these are experienced by many children until around three years of age (Weinraub, Bender, Friedman, Susman, Knoke, Bradley et al., 2012). *Many times the wakings are brief and the child settles quickly. Other times settling takes longer. In either case, these wakings do not suggest your child has a sleep "problem."* Increased night wakings, call-outs, and crying are more common around six months of age or so, and again as infants near two years of age. *These wakings may simply be one (of many) manifestations of separation anxiety experienced by the child*—a normal change resulting from infants learning that they exist separately from their caregivers (for a review, see Middlemiss, 2004).

Some argue that night wakings in toddlerhood are reflective of sleep problems, but these opinions are based on criteria that do not necessarily reflect the realities of infant sleep. Several studies found that night waking is relatively common between age 12 and 24

months (Richman, 1981; Goodlin-Jones, Burnham, Gaylor, & Anders 2001; Scher, 2000; Weinraub et al., 2013).

*Thus, a parent's perceptions about what constitutes a sleep problem may be triggered by either a disconnect between expectations of uninterrupted sleep and a toddler sleep pattern that arguably falls within the range of normal, or by the impact that night waking has on the parent's quality of sleep and daily functioning (Loutzenhiser, Ahlquist, & Hoffman 2012). However, although changes in sleep patterns may be inconvenient and frustrating, they are normal occurrences in the context of a healthy parent-child relationship.*

When viewed as indicating problematic, rather than normal, sleep patterns that will come and go, parents can experience greater stress and worry (Middlemiss, 2004). As we have learned from many parents, understanding that these night wakings are normal can go a long way toward making them more bearable.

# The Importance of Understanding Individual Patterns in Sleep

## *"My child won't go to sleep before 10 p.m."*

It is not uncommon in some parts of Western societies to assume that infants and young children must be in bed by, for example, 7 p.m. to develop "good sleep habits." *Unfortunately, that's just not the reality for many families, and it's not because parents are negligent in getting their infants to bed, but because some children simply have a different circadian rhythm, or a later schedule may work for the family.* Some children will continue this pattern into their toddler years and beyond.

Cross-cultural data on bedtimes for infants and toddlers shows that later bedtimes are actually quite frequent in predominantly Asian countries (Mindell, Sadeh, Wiegand, How, & Goh, 2010). Whereas the mean bedtime for children in predominantly Caucasian countries was found to be 8:42 p.m, it was a full hour later for predominantly Asian countries (with a mean at 9:44 p.m.), with the latest mean bedtime being 10:17 p.m. in Hong Kong. Notably, the rising time was also significantly later in these countries. A concurrent finding was that the vast majority of children in predominantly Asian countries sleep either in the parent's bed or room. *Thus, children who sleep with their parents may naturally have a sleep schedule closer to their parents owing to the sleeping arrangements.*

What is important to remember is that a late bedtime, in and of itself, is not a problem. If it poses a problem for the family as a whole, then parents may want to adjust the bedtime routine (Mindell, Telofski, Weigand, & Kurtz, 2009), or start the routine earlier in small increments in order to gradually move to an earlier bedtime (Richman, 1981).

## *"My child sleeps less than (or more than) the recommended amount no matter what I do!"*

Most people have seen the "sleep guidelines" about how much sleep our children need at various stages. Parents are told that newborns should sleep around 16 to 18 hours, that at two years of age, children require a total of 13 hours sleep, and so on. *When researchers explore questions of how long infants and children should sleep, and what are healthy recommendations, the answers are not particularly clear,* and are often based on examining how much children *are sleeping* at different times in history (Matricciani, Olds, Blunden, Rigney, & Williams, 2012).

As parents, it is important to remember that they are *recommendations.* Each child is different, and the recommendations may not fit every child. Some will require much more sleep, and some will require less. *If a child is truly sleep deprived, there will be noticeable signs.* Signs of sleep deprivation include rubbing eyes, looking dazed, and not focusing on people or toys, becoming overly active late at night, and having a hard time waking up in the morning.

*By paying attention to your child's cues and behaviors, you will be able to tell if your child is getting enough sleep, regardless of the exact number of hours he or she sleeps.* Sleep is important, but there are many ways to get it apart from one long, uninterrupted stretch.*

*Interestingly, researchers are now telling us that waking in the middle of the night is common in adulthood and was viewed as normal in past eras—the "first sleep" lasted about four hours, with an awake period in between, followed by a "second sleep" of another four hours (for more details, see here and the book: *At Day's Close: Night in Times Past* by Roger Ekirch (Norton 2005).

# Normal Parent Behaviors and Why They Won't Hurt Your Child

## *"My child is still sleeping in our bed."*

Many parents who sleep with their child get comments along the lines of, "Your child will never leave if you don't move them" or "What about your sex life?" Parents end up questioning if they are doing the right thing for their children, or if they will end up with a 16-year-old who still wants to crawl into bed with mom and dad every night. First, let's address the question of when a child leaves the bed. Rest assured that your child will not be dragging you off to college so they can still sleep with you--*even if you don't force them out of the bed*.

The age at which children are ready to move into their own room varies widely, and bedsharing is quite common worldwide. Notably, bedsharing rates in Scandinavian and Asian countries are much higher than those in the U.S. or Canada (Mindell, Sadeh, Wiegand, How, & Goh, 2010; Nelson & Taylor, 2001; Welles-Nystrom, 2005; for a review, see Cassels, 2013). Parents polled by one the authors about the age at which their children initiated the move to another room report ages as young as 18 months, and as old as 10 years.

*No one should tell a family that they must stop bed if it is working for them.*

Some factors that influence the transition age include: having a sibling in the other room (thus being able to room-share with another child), the presence of a new baby in the bed (and needed attention to safety for the new baby and disrupted sleep for the older child), and the child's own developmental needs. Each family will need to consider the factors that are relevant for their particular child.

*The research on extended bedsharing has not found any social, emotional, or cognitive detriment for bedsharing children relative to children who were placed in their own room in infancy* (e.g., Abel, Park, Tipene-Leach, Finau, & Lennan, 2001; Barajas, Martin, Brooks-Gunn, & Hale, 2011; Keller & Goldberg, 2004; Okami, Weisner, & Olmstead, 2002).

The second issue that is often brought up has is to do with the marital relationship when the family bed is utilized. New research looking at bedsharing and marital satisfaction has reported *no influence of bedsharing on the marital relationship when bedsharing is intentional* (Messmer, Miller, & Yu, 2012). When bedsharing is in reaction to child sleep problems, parents may report greater stress on their relationship, but it is likely that this is due to the problems associated with infant sleep problems. As to intimacy, parents of co-sleepers and bedsharers often find creative ways to make sure their needs

are met as well. There are excellent (and humorous) blogs on the topic if you're in need of some extra assistance.

## *"My child only goes to sleep breastfeeding."*

Most parents in the early months know how quickly an infant can go to sleep while breastfeeding. In fact, breastfeeding often is what sends our little ones to sleep. Although many people do not think twice about these behaviors when their infants are still quite tiny, they start to worry about it as the child ages. It doesn't help that "falling to sleep" while breastfeeding is listed as one of the sleep disorders by sleep researchers (Melzer & Mindell, 2006), and that often family and friends will tell you that you're harming your child, and that he or she will "never" learn to fall asleep on his or her own. Many "sleep experts" will recommend not letting your infant fall asleep on your breast for fear of creating this "bad habit" (Meltzer & Mindell, 2006), instead recommending that you rouse your little one before putting him or her down.

*If you don't have a problem with breastfeeding your child until they are sleeping, and placing them down while sleeping, you don't need to worry about it for your child.* How can we say this? First, a child who is tired enough will fall asleep with or without breastfeeding. Although falling asleep at the breast may remain a *preferred* way to fall asleep for a child (full of the closeness and intimacy that is so necessary for bonding), it will not be a necessary step. As children age, they will fall asleep in various places and positions. *Young infants should not be forced to fall asleep without comfort; they may need to breastfeed to feel relaxed and safe enough to enter sleep.*

Another factor to remember is that *all children eventually wean*. Breastfeeding and cuddling to sleep offer comfort for your child, a closeness that is associated with positive developmental outcomes. Children will seek this closeness as a natural part of development. This is not a bad thing; it is simply offering your child the closeness that is a natural part of growth and parenting.

If still uncertain, *be assured that breastfeeding is a natural way to help children sleep and provide important support for their growth.* Parents should know that breast milk in the evening contains more tryptophan (a sleep-inducing amino acid). Tryptophan is a precursor to serotonin, a vital hormone for brain function and development. In early life, tryptophan ingestion leads to more serotonin receptor development (Hibberd, Brooke, Carter, Haug, & Harzer, 1981).

Nighttime breast milk also has amino acids that promote serotonin synthesis (Delgado, 2006; Goldman, 1983; Lien, 2003). Serotonin makes the brain work better, keeps one in a good mood, and helps with sleep-wake cycles (Somer, 2009). So because of tryptophan and its wider effects, it *may be especially important for children to have evening or night breast milk for reasons beyond getting them to sleep.*

The other concern that is brought up is that infants and children who fall asleep at the breast (or even in-arms) often wake looking for the same environment in which they first fell asleep (Anders, Halpern, & Hua, 1992). This can lead to crying upon waking when they find themselves in a different environment, such as a crib.

**Parents should not expect their infants (or toddlers) to sleep through the night as they have myriad needs that require parental responses, even during the night.**

For parents who bedshare and breastfeed, parents have reported decreased signaling as infants learn to seek mother's breast and latch themselves on to breastfeed when waking at night. *Though arousals continue to be greater in bedsharing dyads* (Mosko, Richard, & McKenna, 1997), *this natural interaction provides a soothing and simple way to care for infants as they wake.* In these cases, when the children are developmentally ready, putting them down nearly asleep, and letting them finish the process on their own, may help reduce wakings that result in signaling for the parent.

## *"My child only naps when I'm outside/walking/on me."*

Wouldn't it be nice if infants and children wanted to sleep exactly where we wanted to put them on a given day? No joke here–it would be wonderful, but unfortunately it's not how most babies sleep. We've heard of mothers complaining about having to be outside walking for a nap to happen while living in cities with blizzards and 30 below weather, or needing to be walking constantly (inside or out), meaning naps are not only not a time of respite for mom, but can be downright unpleasant.

*Interestingly, the most common situations involve touch, sound, or movement--three things that are abundant for the infant while in the womb.* Recall that human babies are born at least nine months early compared to other animals because of head size (if they got any bigger they could not get through the birth canal; see Trevathan, 2011), so for at least nine months their bodies expect an "external womb."

So is it much of a surprise that outside the womb they expect the same things to lull them to sleep? With respect to **touch,** we know that oxytocin plays a huge role in feelings of contentment, security, and love, all of which affect the quality of our sleep (Uvnäs-Moberg, 2003). So it is not difficult to imagine *that infants who are physically close to their caregivers, experiencing a release of oxytocin, are much more likely to fall asleep and remain asleep.*

A second factor is **sound**–most notably the caregiver's heartbeat, a sound that is highly familiar to infants from their time in the womb. *When it is the mother holding the infant, her heartbeat, voice, and breathing can all offer a form of white noise which helps an infant feel safe and remain asleep,* though the same effects can happen when another caregiver holds the infant as well.

When this is not possible, the use of a white noise machine to block out some of the more abrasive sounds of our environment while still providing background noise can help with infant sleep. These white noise machines have been successful in inducing infant sleep (Spencer, Moran, Lee, & Talbert, 1990), and at assisting some parents achieve better sleep (Lee & Gay, 2011).

The third factor, **movement**, was also abundant in the womb, with baby in a soft, liquid pouch being swayed regularly. Remember how your baby was always awake in utero when you were resting? It's because he or she was sleeping while you moved. Modern parents in Western cultures often focus on the car ride to get their infants to sleep. The lull of the car coupled with the snugness of the car seat can send many infants into a drowsy state, allowing them to nap contently while parents drive aimlessly around.

However, the same movement-induced sleep can be gained from the use of a stroller, providing mom or dad with the ability to run errands, or go for a walk or run. Possibly best of all, *babywearing promotes movement, touch, and sound, all while allowing the caregiver to run errands, and generally go about one's life.* Babywearing may provide the best form of an "external womb" for developing the baby's brain and body in optimal ways (Narvaez et al., 2013).

The take-home point, though, is ***that it is normal for infants to prefer to sleep in contact with others rather than away from what many people would consider the "ideal" sleep space.*** Even though adults may prefer it, a bed in a quiet room is not necessarily ideal for infant naps. For a summary of napping behavior and safe napping behavior when wearing a baby, please click here for a great handout from ISIS (Infant Sleep Information Source).

# A Final Summary

We hope we have made it clear that often what parents perceive to be problematic infant sleep patterns that require "fixing" are actually quite normal and developmentally appropriate. We are cognizant of the fact that many families still find infant and toddler sleep to be a problem, which is why we are also focusing on writing about how to gently help with infant and toddler sleep.

What we hope parents take home from this series is (a) a better understanding of the broad array of behaviors that constitute "normal" when it comes to our children's sleep, and (b) that if the behavior is not posing a problem for the family, you can rest assured the child is not suffering from these very normal sleep behaviors. Instead of following a particular expert's advice, understand what is needed to keep babies safe when they sleep

and build the sleep environment around these safe behaviors… then do what works best for your child.

**Let your child be your guide.**

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