



Sleep struggles can wreck havoc on the health and well being of parents and babies. Read up on the research on sleep training for peaceful nights of slumber for your family.

BY ALICE CALLAHAN, PH.D.

# The Science of Sleep

As parents, there is something about infant sleep that both unites and divides us.

When I was pregnant with my first baby, the most common advice I heard from experienced parents was "Better sleep while you can!" At the time, I was already getting up several times per night to waddle to the toilet. Surely a new baby couldn't be much worse, I thought.

Then the baby arrived – my daughter, Cee. Her first weeks were a haze of joy, snuggles, leaking milk and very little sleep. Finally, I understood what everyone was talking about when they warned me that this would be tough.

When I was struggling to figure out how to help my daughter sleep, I turned to the Internet for advice, but quickly became overwhelmed by conflicting and confusing information. Some people claimed that sleep training worked to help their babies sleep, but others called letting a baby cry at bedtime cruel and insensitive.

That's when I realized that my training as a scientist could help me be a better parent. So I dug into the research on infant sleep to understand how to help my baby establish healthy sleep habits. Through the clarifying lens of science, I wanted to be confident in my choices without getting caught up in the drama of parenting controversies.

## Sleep deprivation is serious

Just as love and laundry are universal parts of the parenting experience, so is sleep deprivation. It is normal and expected for newborns to wake frequently in the night to feed or need comfort, and we do our best to cope in those early months. As they grow, teething, illness and nightmares will all inevitably disrupt the nights of even the best sleepers.

However, when sleep deprivation is ongoing, continuing over many months, it can compromise the health of the whole family.

Parents experience a special kind of sleep disruption that comes from waking several times in the middle of the night. A 2014 study tried to simulate this by calling study volunteers on the phone four times per night and asking them to complete a 10-minute computer task before going back to sleep. Even though the study participants spent eight hours in bed, these sleep interruptions impacted them just as negatively as another group that was limited to just four hours of sleep per night. In the morning, both groups experienced a drop in cognitive performance and an increase in feelings of depression, fatigue and confusion.<sup>1</sup> If you've ever accidentally poured orange juice in your coffee or snapped at your partner after a rough night with the baby (and haven't we all?), you know exactly how this feels.

Sleep deprivation impairs brain function in many ways. It slows our reaction time, putting us at greater risk of a car accident.<sup>2</sup> According to the Centers for Disease Control, up to one in three traffic fatalities are related to driver

# The science of sleep training

As I considered sleep training my daughter, I was nervous about letting her cry and wanted to be sure it was the right choice. I put my research skills to work to understand the latest research on sleep training. Here's what I found:

**1. Sleep training works.** There are many methods, some gradual and some more abrupt. They all involve letting your baby work on self-soothing to eventually fall asleep without your help, and **they all are effective.** A 2006 review summarized 11 randomized controlled trials of sleep training, including a total of 1,135 children, and several more have been conducted since.<sup>11</sup> Together, they found that sleep training leads to reduced bedtime struggles, fewer night wakings, longer sleep for both baby and parents, better maternal mental health, and improved baby temperament and mood.

**2. There is no evidence that sleep training will hurt your child.** Those who claim sleep training is harmful will cite scientific studies to back their assertions. **But if you read those studies, you'll find that they aren't about sleep training.** They're about babies who were subjected to chronic neglect or abuse or were raised in orphanages, lacking strong attachment figures. Or they're about nonhuman primates or rodents separated from their mothers for extended periods of time. These are examples of chronic, toxic stress.<sup>12</sup> They're deeply saddening, but they don't tell us much about sleep training in the context of a loving family. In contrast, **research on sleep training shows that children who were sleep-trained show no differences in stress, behavior, or relationship with their parents at two and six years of age.**<sup>13,14</sup> Anyone who claims that sleep training will cause long-term harm is not representing the science accurately, and they're ignoring the fact that chronic sleep deprivation could be harming you and your baby. You will make up for a few nights of tears with all of the positive parenting interactions that come with a well-rested family.

**3. Sleep training requires sensitive parenting and careful planning.** Before starting sleep training, first be sure that you've optimized your baby's sleep environment and routine to encourage good sleep. Have a predictable and quiet bedtime routine to help your baby unwind, keep a consistent time for bedtime, and make sure your baby's room is dark, cool, and quiet (or use white noise to block sounds from the rest of the home). If you think sleep training is your next step, start by making a plan with your partner that you think is a good fit for your baby's personality and your parenting style, and be open to adjusting on the fly as needed. Talk with your baby's pediatrician about a plan for night feedings. Once you put your plan into action, stick to it.

**4. Be aware that sleep training doesn't work for every baby.** Jodi Mindell, Ph.D., the associate director of the Sleep Disorders Center at Children's Hospital of Philadelphia, has reviewed just about every study on sleep training, and she herself has published more than 50 peer-reviewed studies on infant sleep. When I asked her if sleep training works for every baby, she replied: "Of course there will be babies who do not respond. Just like with anything — most do well, some receive no benefit, and a few will do poorly." You are more qualified than anyone else to venture a guess at whether sleep training will work for your baby and to know when to throw in the towel or try a different strategy if it doesn't seem to be working.



fatigue.<sup>3</sup> Lack of sleep also makes it more difficult for us to solve problems, juggle multiple tasks, understand the perspectives of others, and regulate our emotions. These deficits make it harder for us to function at work and be effective parents and partners. Sleep deprivation is a major source of marital stress after the birth of a baby.<sup>4</sup> It also increases a mother's risk of postpartum depression, which can in turn affect attachment and behavior in the baby.<sup>5,6</sup>

It's just as important for babies to get enough sleep. Babies that struggle to fall to sleep, wake often during the night, and miss naps may not be getting enough sleep. This can lead to slower learning and more irritability and frustration compared to well-rested babies.<sup>7,8</sup>

**The bottom line? Sleep is a basic human need. One of our biggest jobs as parents is to help our babies find a good sleep rhythm, which in turn benefits the whole family.**

## How do babies learn to sleep?

For babies, learning to sleep well means mastering several developmental tasks. They need to find a circadian rhythm that helps them consolidate most of their sleep to the nighttime hours, and they need to have the capacity to drink enough milk to have a long block of sleep. Finally, they need to be able to soothe themselves to sleep without our help, and this last part is often the most difficult.

When our babies are very young, we usually help them go to sleep. With my daughter, Cee, we learned early on that swaddling and bouncing her on the exercise ball was a certain formula for sleep. Other parents might nurse or rock or swing their babies to sleep.

But after a few months of bouncing Cee to sleep, it started to become a problem. She needed to be bounced before every bedtime, and it was taking longer and longer for her to settle. Then, when we ever-so-carefully tried to lower her into her crib, she often startled awake, and we'd have to go back to bouncing. If we did successfully transfer her to her crib, she'd wake up 45 minutes later, crying and cranky. I was exhausted, and Cee wasn't getting the rest she needed.

Cee was so accustomed to bouncing to sleep that she didn't know how to settle herself in any other way, and that meant that when she woke during the night, she cried out to be bounced then, too. **Babies often wake at the end of a sleep cycle, but a baby who can self-soothe can quickly go back to sleep without a parent's help,** barring hunger or other discomfort.

This brings us to one of the most consistent findings in infant sleep research: **Babies who fall to sleep on their own at the beginning of the night are much more likely to be able to self-soothe in the middle of the night, leading to a better night of sleep for the baby and fewer disruptions for the parents.**<sup>9,10</sup>

How can babies learn to fall to sleep independently, particularly if they're used to being actively soothed to sleep? Some babies can learn this gradually, as my second child did, just by giving them the chance to try. Others will protest going to sleep on their own by crying, and this is what makes sleep training controversial. (See **The Science of Sleep Training**, left.)

## Sleep solutions for every family

Despite the science supporting sleep training, it's still controversial among parents. Portland mom Sydney Steiner has supported sleep-deprived parents online for several years, and she has seen many shamed for sleep training. "I feel the core of this issue is our ability to love so intensely once we become mothers," she said. "The conflict happens when we refuse to respect and trust our fellow parents and see that behind our choices, we have that same intense love."

Steiner became so tired of debating about sleep choices online that she started a closed Facebook group called Respectful Sleep Training/Learning. The group now has more than 13,000 members from around the world, and the focus is on supporting each other.

If you'd like to help a fellow sleep-deprived parent, Steiner recommends starting with a basic question. "Simply ask 'What do you need?' Some parents just need a hug, some parents want to know how to cope with sleep deprivation, and some need steps to getting their infant to sleep," Steiner said.

No matter our beliefs and choices about sleep, we all could all use a little more support on this parenting journey. So today, I offer you some reassuring science and my wish for you — that we can all find a decent night of sleep in this weary but wonderful season of our lives. ■

**This article was adapted from the author's blog (scienceofmom.com) and book, *The Science of Mom: A Research-Based Guide to Your Baby's First Year*, reprinted by permission of Johns Hopkins University Press and the author. The book can be purchased on Amazon and Powell's Books.**

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• **Find a strategy that works for you.** You might talk to other parents, use a book to guide you, or hire an infant sleep consultant. Make sure you feel comfortable and confident in your new strategy and that it fits your parenting style. The goal is to help your child move toward more independent sleep, usually falling asleep on her own without your active soothing. How you get there is up to you. It can be relatively quick or very gradual, perhaps starting with sitting right next to your baby's crib as she falls asleep and then gradually moving your chair farther away. Consider your child's temperament and your tolerance for her protests. There's not a magic formula; it's different for every family.

• **Prepare your child for the change.** Explain that she'll be learning to go to sleep in a different way. Tell her that you know that she can do it, and you'll support her as she learns. Even a baby, who may not understand the meaning of all your words, might understand from your tone that a change is coming.

• **Be consistent.** Once you decide on a strategy, be ready to follow through. Know that it will be hard, but you've thought carefully about this, and you know that your family needs a change. Being confident and consistent will help your baby feel more secure in this change and allow her to adapt more quickly.

• **Find support.** Talk to a friend who has been through this process, or join a supportive online forum. Find support from parents who understand your philosophy, so they can help you troubleshoot the process without judgment.

## RECOMMENDED READING

- Solve Your Child's Sleep Problems* by Richard Ferber (2006)
- Sleeping through the Night: How Infants, Toddlers, and Their Parents Can Get a Good Night's Sleep* by Jodi Mindell (2005)
- The Happy Sleeper: The Science-Backed Guide to Helping Your Baby Get a Good Night's Sleep — Newborn to School Age* by Heather Turgeon and Julie Wright (2014)
- Healthy Sleep Habits, Happy Child* by Marc Weissbluth (1999)

Tips for sleep training