

## Preventing Tragedy

**Three new studies examine the mystery of SIDS—a condition that takes thousands of infant lives every year.**

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Understandably, Margo Parisi wanted to take every possible step to reduce the risk that her newborn son, Luca, would die of Sudden Infant Death Syndrome. So the El Cerrito, Calif., mom followed the ["Back to Sleep" guidelines](#) from the National Institute of Child Health and Human Development (NICHD), putting Luca to sleep on his back, shunning blankets and pillows and keeping the temperature cool. She also turned on the ceiling fan; she had read a newspaper article that said researchers were investigating whether that might help. After all, she and her husband already had the fan. "It's cheap, it's easy, it's not going to harm the baby," she says. "It's one more thing you can do as a parent that can prevent something horrible from happening." So far all the precautions have paid off: at 14 weeks, Luca is happy and healthy.

Parisi is one of a growing number of parents taking measures to reduce the risk of SIDS—defined as "the sudden death of an infant under 1 year of age, which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history." In fact, the campaign to educate people about the syndrome has been so successful that infant deaths due to SIDS have been cut in half since the NICHD introduced its Back to Sleep campaign in 1994. Nonetheless, each year SIDS kills about 2,300 U.S. babies, about one infant out of every 2,000 live births, according to the American SIDS Institute. Three new studies published today look at how that number might be further reduced.

In the October issue of the Archives of Pediatric Adolescent Medicine, researchers at Kaiser Permanente looked at whether the use of a fan in the room where a baby sleeps can help reduce the incidence of SIDS. In in-person interviews, they questioned mothers of 185 California babies who died of SIDS and the mothers of 312 randomly selected "control" infants matched by county, race, ethnicity and age to the first group. Kaiser researchers found that infants who slept in rooms ventilated by fans had a 72 percent lower risk of SIDS compared to infants who slept in bedrooms without fans. Using a fan appeared to be most effective with infants in high-risk environments, such as those sleeping in overheated rooms or on their stomachs. Researchers hypothesized that fans may improve ventilation and decrease the chance that babies will rebreathe exhaled carbon dioxide (an explanation for SIDS known as the "stale-air hypothesis").

The two other new studies focused on how parents and caregivers are implementing existing guidelines for reducing SIDS deaths. While the campaign to have babies sleep on their backs has been very successful, the message isn't getting to everyone. A study in a special supplement to the journal Pediatrics revealed that at 3 months of age (the peak for SIDS is 2 to 4 months of age), 25 percent of parents are still not following recommendations to put their babies to sleep on their backs. And a third of parents were sharing a bed with their babies at that age, again contrary to NICHD and American Academy of Pediatrics (AAP) guidelines.

"This information was very concerning," says Fern Hauck, a coauthor of the Pediatrics study, an associate professor of family medicine at the University of Virginia and a member of the AAP task force on SIDS. Perhaps, she says, the Back to Sleep campaign is getting less attention than it was in the 1990s. "We need to highlight the importance of keeping all the Back to Sleep recommendations," she says. She also notes that La Leche and other pro-breastfeeding groups encourage bed-sharing as a way to promote nursing.

In another Pediatrics report, researchers found that increasing childcare providers' knowledge about the importance of supine sleep position made them more likely to put babies on their backs.

As researchers identify more ways to prevent SIDS, its causes are still unclear. "SIDS is a definition by exclusion," says Howard Hoffman, an epidemiologist at the National Institutes of Health. "If you can't pin it on something you really understand the basis for, then it becomes SIDS."

There is evidence to suggest that some babies are more susceptible to SIDS than others. Hunt explains that these children have an impairment in the way they regulate their breathing and heart rate during sleep. "We know that if body temperature, environmental temperature, is increased, it does put increased demand on these functions ... If control or regulation of these functions is impaired in some way, [babies with the impairment] can't handle this thermal stress as well as other infants." (Fetal exposure to maternal smoking may contribute to an impairment in breathing and heart rate, he adds.)

Though the data from the Kaiser study of fans is promising, the link between the use of fans and a decrease in SIDS isn't definitive, says Carl Hunt, a consultant to the National Institutes on Health and a board member of the American SIDS Institute. "Reduced breathing of stale air when using a fan ... is only speculation at this time. What they've shown is an association, but that doesn't mean that use of the fan causes less risk of SIDS. It may be that families who use fans have a lower risk for SIDS anyway."

In the meantime, SIDS experts (and the authors of the fan study) stress that parents should continue to follow the Back to Sleep guidelines and should not rely on a fan alone. "We wouldn't want people to think this can be done in lieu of the things we know work," says Hoffman. Betty McEntire, executive director of the American Sleep Institute, stresses that parents should not stop doing what's been proven to work. "It's easy to say, 'OK, my baby sleeps better on his stomach, and I'm just going to get a fan'," she says. "The best things we know work are a smoke-free [environment], Back to Sleep and bare crib—no cover, no bumper pads, no pillows and the bed in the mother's room. Those things are tried and true."

Many other mysteries remain. SIDS is more common in winter months. No one knows why. Breastfeeding is also associated with a lowered risk of SIDS. No one knows why. "There's no evidence at all to indicate whether that's a causal relationship or just an association," says the NIH's Hunt. "It may mean those are families at lower risk for SIDS anyway."

That's also true for pacifier use, which is associated with a lower risk, too. "The only potential downside is there's been some concern that early introduction of pacifiers will reduce the chance of successful breastfeeding," he says. "The American Academy of Pediatrics' recommendation is to introduce the pacifier once breastfeeding is well established."

This blizzard of confusing information may be why some parents haven't implemented the Back to Sleep recommendations. "There's still some sentiment out there that 'I slept prone when I was an infant, and my mother and grandmother did, and I did fine'," says Hunt. "There's also some sentiment out there that 'I heard such and such infant who slept on their back died anyway, so what's the big deal?' ... It takes a long time to get public-health messages fully distributed."

And it is true that there are no guarantees even for parents who follow all the guidelines. "A significant number of babies dying of SIDS today were sleeping on their backs," says Hunt. But the bottom line is that following the standard recommendations is still a parent's best chance of keeping their infant safe, even if researchers don't know exactly why these techniques seem to help. "At the end of the day, it doesn't matter [why they're effective]," says Hunt. "Although the physiology is not worked out, it's one of these situations where we understand the benefit of a change before we understand the mechanism. We've known for decades that smoking increases the risk for cancer, that's very solid. We don't understand the physiology of that that well, but we know it's true."

Visit the National Institute of Health's [Web site](#) for a complete guide to reducing the risk of SIDS.

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