

# Sleep environment one of several factors behind reduction in sudden infant death syndrome

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While the successful public health campaign to improve infant sleep environments has long been associated with declines in sudden infant death syndrome (SIDS), an analysis of 30 years of data by researchers from Boston Children's Hospital and Dana-Farber Cancer Institute suggests that Back-to-Sleep is one of several trends that explain the reduced rates of SIDS. Other factors include improved prenatal and neonatal care, reduced maternal smoking during pregnancy, increased breast feeding and declines in teen pregnancy. These factors are linked to the biological underpinnings of infant vulnerability to SIDS.

The findings, published online today by the journal *Pediatrics*, place safer sleep environments in a constellation of improvements in prenatal and post-natal health that have resulted in overall reductions in [infant mortality](#), including mortality from SIDS and mortality due to known causes. The authors also note that changing diagnostic practices are responsible for the appearance of some of the decline in SIDS rates, as unexplained deaths that were once attributed to SIDS are now attributed to other causes.

The Back-to-Sleep campaign began in 1992, when the American Academy of Pediatrics recommended against putting babies to sleep in a chest-down position and urged that cribs be free of suffocation hazards such as soft bedding. Between 1992 and 1996, the proportion of [infants](#) sleeping in a prone position dropped from 70 percent to 24 percent, and

the number of SIDS deaths in the United States fell by 38 percent. Overall, SIDS deaths decreased 71 percent over the three decades, from 1.357 per 1,000 live births to 0.39 per 1,000 live births.

"It is true without any qualification that it is safest for babies to sleep on their backs. This study and others have shown it," said Richard Goldstein, MD, lead author of the study and a pediatrician in the Pediatric Advanced Care Team at Boston Children's and Dana-Farber. "This study raises the question of other factors being critical in declining SIDS rates, not just sleep environment. Efforts to understand the biologic vulnerabilities of these infants are important."

In analyzing data on [infant deaths](#) from 1983-2012, Goldstein and his colleagues applied broad trends to SIDS and infant mortality from explained causes. They note, for instance, that rates of prenatal [maternal smoking](#) decreased from 16 percent in 1987 to 10 percent in 2011. In addition, the onset of the Back-to-Sleep campaign coincided with a threefold increase in the use of post-natal steroids to reduce respiratory distress - a factor of particular importance to premature babies who are at higher risk of SIDS.

"The decline in SIDS deaths follows decreases in infant deaths from known causes," Goldstein said. "This suggests that broad trends in the health of pregnant women and babies influence infant mortality across the board. While we continue to stress safe sleep environments, we should also move forward in improving overall maternal and infant health and in researching the underlying biology that may well also influence SIDS."

Provided by Children's Hospital Boston

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