

## Research: Baby's sleep position is major factor in 'flat-headedness'

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(PhysOrg.com) -- A baby's sleep position is the best predictor of a misshapen skull condition known as deformational plagiocephaly ? or the development of flat spots on an infant's head -- according to findings reported by Arizona State University scientists in the December issue of the journal Pediatrics.

Analyzing the largest database to date, more than 20,000 children, the ASU researchers found that the number of babies who have developed flat-headedness has dramatically increased since 1992. The increase coincides with the American Academy of Pediatrics launch of a "Back to Sleep" educational campaign that recommended parents place their infants on their backs to reduce the risk of [Sudden Infant Death Syndrome](#).

"We looked at a number of risk factors, but the largest factor was the sleep position of the baby," said Brian Verrelli, an assistant professor in ASU's School of Life Sciences and researcher in the Center for Evolutionary Functional Genomics at the Biodesign Institute.

The condition is thought to occur when babies spend too much time in one position. The research team found that sleep position, and specifically, head position, are linked to flat-headedness. Babies who slept on their right-side or left-side tended to have right-side and left-side flat spots, respectively.

The study, "Risk Factors Associated With Deformational

Plagiocephaly," also found that boys were twice as likely as girls to have the condition (a nearly perfect 2-to-1 ratio) and also more common in firstborn infants, babies with low birth weight, in breech and transverse positions in the womb, and in multiple births, specifically fraternal twins.

The study was designed to statistically evaluate the independent and interacting effects of biological and environmental risk factors that lead to deformational plagiocephaly, in an attempt to provide future guidance for clinical treatment.

"The unprecedented size of the sample in our study allowed us to identify potential factors, such as maternal prenatal conditions and low birth weight, that were previously unrecognized in smaller cohort studies. These other factors need to be explored further before we can begin to piece together the entire puzzle," said Jessica Joganic, who was an ASU undergraduate student at the time. She is the lead author on the study.

However, independent of the biological and environmental factors, the findings showed that sleep position was the best predictor of deformational plagiocephaly, and one that could be addressed by altering behavior, according to Verrelli.

The research was part of Joganic's undergraduate honors thesis as a student in ASU's Barrett, the Honors College. Joganic earned a bachelor's degree in anthropology in 2008 from the School of Human Evolution and Social Change in ASU's College of Liberal Arts and Sciences. She currently is pursuing a doctorate in physical anthropology at Washington University in St. Louis.

Also collaborating in the study, which appeared online this week, were John Lynch, an ASU evolutionary biologist, and Timothy Littlefield with

Cranial Technologies, Inc., in Phoenix, which supplied the database of more than 20,000 children who were treated for deformational plagiocephaly between 1990 and 2007.

Provided by Arizona State University ([news](#) : [web](#))

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