A team of researchers from Finland, the Netherlands and Japan has found a connection between left-handedness and low baby birth weight. In their paper published in *Proceedings of the National Academy of Sciences*, the group describes their study of two large birth datasets and what they found.
Prior research has suggested a possible link between left-handedness and low birth \textit{weight}. There have also been studies that suggest handedness develops before birth—fetuses as young as 10 weeks have been seen showing a preference for one thumb or the other on sonograms. In this new effort, the researchers sought to gather more evidence regarding birth weight and handedness. To that end, they obtained birth datasets—one from the Netherlands, the other from Japan. Noting that prior research has shown that left-handedness is more common in twins, and even more common in triplets, the researchers chose to focus their study exclusively on triplets. After filtering for triplets born at 33 weeks, the researchers pared down the datasets to 947 triplets in the one from the Netherlands and 1,305 from the one in Japan.

The researchers found that the average birth \textit{weight} between left and right handers differed—for the Netherlands it was 1.79 kg on average for lefties, compared to 1.903 kg for right-handers. The results for the Japanese babies were similar—1.599 kg for lefties and 1.727 kg for right-handers. They noted also that the age of the mother did not seem to make any noticeable difference, nor did \textit{birth} order. The researchers also discovered that those babies born left-handed were slower to reach major motor-skill milestones such as sitting, crawling and standing.

The researchers point out that their results do not indicate that low \textit{birth weight} is the sole cause of left-handedness. They note, for example, that past research has shown that heredity plays a role as well—left-handed people are more likely to have left-handed children, for example. They also acknowledge that their results do not really explain the bigger question of why approximately 10 percent of the population are born left-handed, or how it happens.

Abstract
The mechanisms behind handedness formation in humans are still poorly understood. Very low birthweight is associated with higher odds of left-handedness, but whether this is due to low birthweight itself or premature birth is unknown. Handedness has also been linked to development, but the role of birthweight behind this association is unclear. Knowing that birthweight is lower in multiple births, triplets being about 1.5 kg lighter in comparison with singletons, and that multiples have a higher prevalence of left-handedness than singletons, we studied the association between birthweight and handedness in two large samples consisting exclusively of triplets from Japan (n = 1,305) and the Netherlands (n = 947). In both samples, left-handers had significantly lower birthweight (Japanese mean = 1,599 g [95% confidence interval (CI): 1,526–1,672 g]; Dutch mean = 1,794 g [95% CI: 1,709–1,879 g]) compared with right-handers (Japanese mean = 1,727 g [95% CI: 1,699–1,755 g]; Dutch mean = 1,903 g [95% CI: 1,867–1,938 g]). Within-family and between-family analyses both suggested that left-handedness is associated with lower birthweight, also when fully controlling for gestational age. Left-handers also had significantly delayed motor development and smaller infant head circumference compared with right-handers, but these associations diluted and became nonsignificant when controlling for birthweight. Our study in triplets provides evidence for the link between low birthweight and left-handedness. Our results also suggest that developmental differences between left- and right-handers are due to a shared etiology associated with low birthweight.

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