

# Benefits of later school entry for kids spill over to younger siblings, study finds

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Having a high-achieving older sibling helps children, especially those from socioeconomically disadvantaged families, succeed academically, according to a new Yale-led study.

Using data from North Carolina [public schools](#), a team led by Yale sociologist Emma Zang found that children whose birthdays fall shortly after the state's cutoff date for starting kindergarten—and who are therefore among the oldest in their classes—tend to perform better academically than their younger classmates.

For those students with younger siblings, the study found, their success in turn has a [positive influence](#) on those siblings once they reach [middle school](#)—particularly among children from disadvantaged families.

"We establish the causal effect of having an academically successful sibling on a student's academic outcomes," said Zang, an assistant professor of sociology in Yale's Faculty of Arts and Sciences and the study's lead author. "While most previous studies assume these spillover effects occur across socioeconomic statuses, our findings demonstrate that they are much stronger among disadvantaged families than in advantaged families, which has important implications for how we think about inequality and the policies we enact to address it."

The study, published in the *American Journal of Sociology*, was coauthored by Philip J. Cook of Duke University and Poh Lin Tan of the University of Singapore.

The researchers analyzed a unique dataset provided by the North Carolina Education Research Data Center that links birth certificate information with school administrative records. Specifically, they examined four important characteristics of family background: race, mothers' educational attainment, [family structure](#), and school poverty levels. All individuals in the dataset were born before 2004, when North Carolina law allowed children born on or before October 16 to start kindergarten prior to their fifth birthday.

They found that students born within two months after the cutoff date

had higher math and reading [test scores](#) by a fifth of a standard deviation in elementary school than those born later did. (The difference in scores diminished slightly during middle school, they found.) For younger siblings, having an older sibling born shortly after the kindergarten cutoff was associated with an increase in total math and reading scores during middle school, according to the study.

The researchers suggest that by middle school, students have reached a [developmental stage](#) often fraught with uncertainty and challenges, which can make them more receptive to an older siblings' influence. When their older siblings do well in school, it can positively affect their own academic performance.

The effects were greater for students in schools affected by higher levels of poverty than for those in low-poverty schools, according to the study.

Among disadvantaged families, the sibling spillover effect was statistically significant across all four categories studied. By contrast, among socioeconomically advantaged families, the effect was statistically significant only for children whose mothers had higher than a high school diploma at their birth, the study found.

A potential explanation for the disparate effects is that wealthy families possess the resources to buffer the influence of older siblings on younger siblings' academic performance, Zang explained. For example, they can provide their children separate bedrooms and afford to pay for [extracurricular activities](#) for younger siblings, allowing them to spend more time outside the home with other children, she said.

Advantaged families are also better situated than disadvantaged families to deliberately delay a child's school entry, allowing them to gain the benefit of being older than their classmates in the classroom and in athletics, Zang noted. Policies aimed at limiting this practice might help

reduce inequality between poor and wealthy households, she said.

The study's findings suggest that children in disadvantaged families may be more likely to view their older siblings as role models, she said, adding that the older [sibling](#)'s influence can be positive or negative depending on the situation.

"Our work has important policy implications, especially in countries like the United States that have weaker social safety nets," Zang said.

"Disadvantaged families are more likely to face hardship than advantaged families and negative effects from those experiences can spill over from older to [younger siblings](#). At the same time, policies aimed at supporting disadvantaged families can have a higher return because, as our study shows, positive benefits move from older siblings to younger ones."

**More information:** Emma Zang et al, Sibling Spillovers: Having an Academically Successful Older Sibling May Be More Important for Children in Disadvantaged Families, *American Journal of Sociology* (2023). [DOI: 10.1086/724723](https://doi.org/10.1086/724723)

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