

Children's genetic potentials are subdued by poverty

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Children from poorer families do worse in school, are less likely to graduate from high school, and are less likely to go to college. A new study published in *Psychological Science*, a journal of the Association for Psychological Science, finds that these differences appear surprisingly early: by the age of 2. It's not a genetic difference. Instead, something about the poorer children's environment is keeping them from realizing their genetic potentials.

Past research has found that a gap between poor children and children from wealthier families opens up early in life, even before children enter formal education. "Poor kids aren't even doing as well in terms of school readiness-sounding out letters and doing other things that you would expect to be relevant to early learning," says Elliot M. Tucker-Drob of the University of Texas at Austin, lead author of the paper. He and his colleagues, Mijke Rhemtulla and K. Paige Harden of the University of Texas at Austin and Eric Turkheimer and David Fask of the University of Virginia, wanted to look even earlier-to see if they could find these differences in infants.

The researchers used data on about 750 pairs of fraternal and [identical twins](#), from all over the country. The children's mental abilities were tested at 10 months of age and again when they were 2 years old, with tasks like pulling a string to ring a bell, placing three cubes in a cup, matching pictures, and sorting pegs by color. The children's socioeconomic status was determined based on parents' educational attainment, occupations, and family income.

At 10 months of age, children from poor families performed just as well as children from wealthier families. It was over the next 14 months that a gap emerged. By 2 years of age, children from wealthier families were scoring consistently higher than the children from poorer families.

The researchers went on to examine the extent to which genes were involved in the test scores. Among the 2-year-olds from wealthier families, identical twins, who share all of their genes, had much more similar tests scores than fraternal twins, who share only half of their genes, thus indicating that genes were influencing their tests scores. However, among 2-year-olds from poorer families, identical twins scored no more similar to one another than fraternal twins, suggesting that genes were not influencing their test scores. The researchers concluded that something about the poor children's home life was suppressing their potentials for cognitive development.

This study didn't look specifically into why wealthy children improve more. It could be that poorer parents may not have the time or resources to spend playing with their children in stimulating ways. A common goal of education policy is to decrease the achievement gap between poorer and wealthier children, says Tucker-Drob. "And I think the first step to achieving this goal is understanding the basis of these disparities." He's working now on understanding exactly what it is that parents are doing differently-analyzing videos of poorer and wealthier parents interacting with their [children](#), for example, to see if he can find differences.

Provided by Association for Psychological Science

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