Can an Extra $333 a Month Improve a Baby’s Brain? A Research Team Wants to Know.

Study aims to discover whether reducing poverty can make a positive difference in babies’ cognitive and emotional development

Kimberly Noble, neuroscientist at Teachers College, Columbia University. She is leading a study that aims to identify whether reducing poverty can make a positive difference in the cognitive and emotional development of babies. PHOTO: LESLIE BRODY/THE WALL STREET JOURNAL

By

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Kimberly Noble, a neuroscientist, holds up a blue and red cap dotted with electrodes that rest on a toddler’s scalp to measure electrical activity in the brain.
It is one of the tools her team will use to answer a complex question: Can monthly cash payments to low-income mothers foster the growth of their babies’ brains and cognitive abilities?

Dr. Noble, based at Teachers College, Columbia University, thinks so.

“When a mom is less worried about how she’s going to pay rent or keep the lights on, she’s more likely to be present with her children,” she said. “She’s more likely to be able to engage in warm and nurturing parenting.”

Babies’ brains are most malleable in their first three years, she said, and early experiences can have profound influences. Dr. Noble and scientists from four other universities are leading a study that aims to identify whether reducing poverty, by giving new moms $4,000 a year, can make a positive difference in the cognitive and emotional development of their babies.

Dr. Noble’s new TED talk on the study, called Baby’s First Years, has garnered more than 1.1 million views since its release in early April. Past studies have found correlations between income and brain growth, but this project aims to show a causal link, in hopes its findings could affect social policy.

“There clearly is some genetic basis to cognitive development,” Dr. Noble said. “There’s also good evidence to suggest that experience plays a role in cognitive, intellectual development. We are manipulating that experience.”

The $16 million, randomized controlled trial is funded largely by philanthropy. It also has a $500,000 grant from Mayor Bill de Blasio’s Office of Economic Opportunity, whose executive director, Matthew Klein, said the study could have useful implications for better ways to structure supports, such as the child tax credit or the earned-income tax credit. He said city dollars cover research expenses, not cash transfers.
“I understand the concern would be, ‘Is the city interested in policies where you just hand out free money?’” Mr. Klein said. “The response to that is, ‘The city is interested in human capital and opportunities.’”

The research team is recruiting 1,000 mothers, both married and single, who live under the federal poverty line in New York City and three other urban areas, in hospitals shortly after they give birth. Four hundred are randomly assigned to receive $333 a month on a debit card, for 40 months. Six hundred in the control group will get $20 monthly.

Their babies will be tested at ages 1, 2 and 3 to evaluate their vocabulary, memory, self-regulation, socio-emotional development and brain activity. Mothers will also be asked a host of questions about their housing, parenting routines, child care, romantic relationships and stress.

Researchers said about 860 women have signed up so far, reporting an average yearly income of about $18,000 before the study.

Aparna Mathur, who studies income inequality at the American Enterprise Institute, a conservative think tank, questioned whether $333 a month would be enough to have an impact. She said requiring it to be used on child-related expenses might be more effective. “I hope it makes a huge difference in the lives of these families, but other programs could work better,” she said. “How would we scale it up, and where would the money come from?”

Dr. Noble, a mother of two who lives on Manhattan’s Upper West Side, said the additional cash could help in several ways: The mothers may be able to afford more books and transportation to services and health care, for example. They also might stay home from work longer to bond with their babies.

Researchers will track what the mothers buy with the debit cards, but won’t be able to see how they use cash from bank machines or other income. A small pilot study in 2014 suggested the women didn’t use money recklessly, Dr. Noble said. Usually these families are already getting public assistance such as food stamps and
Medicaid. One challenge, she said, will be keeping families getting only $20 a month from dropping out.

A previous study co-written by Dr. Noble found the brains of children of parents earning less than $25,000 a year had cortical surface areas 6% smaller, on average, than those of children whose parents earned $150,000 or more. That part of the brain handles reasoning, language and the ability to avoid distraction. The poorer children also scored slightly lower, on average, on several cognitive tests.

Dr. Noble said many factors might play a role, such as low-income families’ difficulties getting high-quality medical care and nutritious food. Further, she said, the toxic stresses of poverty could inhibit brain development.

The principal investigators in the new study aim to have some preliminary results by summer 2021.

Isabel Sawhill, a senior fellow at the nonpartisan Brookings Institution who studies families in poverty, said Baby’s First Years tackles an important issue and is being conducted by well regarded experts.

A researcher not tied to the project, Ms. Sawhill said the study could face several challenges: The women willing to enroll might not truly represent poor mothers overall, and being monitored might affect some women’s behavior. Even so, she said, it is an eagerly anticipated study that “will get huge attention when it comes out.”

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