Medical Xpress

Heavier newborns show academic edge in school

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Birth weight makes a difference to a child's future academic performance, according to new Northwestern University research that found heavier newborns do better in elementary and middle school than infants with lower birth weights.

Led by a multidisciplinary team of Northwestern researchers, the study

raises an intriguing question: Does a fetus benefit from a longer stay in the mother's womb?

"A child who is born healthy doesn't necessarily have a fully formed brain," said David Figlio, one of the study's authors and director of Northwestern's Institute for Policy Research (IPR).

"Our study speaks to the idea that longer gestation and accompanying weight gain is good," he said. "We want to know: What does that mean for public policy?"

The research suggests that babies who weigh more at birth have higher test scores from third through eighth grade. The relationship is apparent even among twins; heavier-born twins have higher average test scores in third through eighth grade than their lighter-born twin.

Even the advantage of attending a higher quality school was not enough to compensate for the disadvantage of a lower birth rate, according to the study. The low birth-rate advantage held up across the board for all children—regardless of race, socioeconomic status, enrichment experiences provided by parents, maternal education and a host of other factors.

The study, which appears online Dec. 14 in the journal *American Economic Review*, was the first to explore the interaction between school quality and the relationship between birth weight and children's cognitive development.

"The results strongly point to the notion that the effects of poor neonatal health on adult outcomes are largely determined early—in early childhood and the first years of elementary school," the researchers wrote in the study.

Birth weight is a common indicator of a baby's health. Using a major new data source—merged birth and school records for all children born in Florida from 1992 to 2002— the researchers studied the relationships between birth weight and cognitive development by following more than 1.3 million children and nearly 15,000 pairs of twins from birth through middle school.

"It will be valuable to learn whether improvements in earnings by families with pregnant women, improved maternal nutrition or reduced maternal stress—all factors associated with higher birth weight—also translate to better cognitive outcomes in childhood," said Figlio, IPR faculty fellow and Orrington Lunt Professor of Education and Social Policy and of Economics at Northwestern's School of Education and Social Policy.

Still, birth weight doesn't seal a child's fate, said study coauthor Jonathan Guryan, an associate professor of human development and social policy at the School of Education and Social Policy and IPR faculty fellow.

Children with low birth rates can—and do—perform better in school than their heavier peers. Other factors, such as whether a mother graduated from college, can be a larger predictor of academic achievement.

"You'd rather be a low birth-weight baby with a mother who has a college degree, than a heavier baby, born to a high school dropout," Guryan said.

Provided by Northwestern University

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