

Children who spend extra week in the womb have higher school test scores, risk disability

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Credit: University of Florida

Researchers have found that spending a week longer in the womb may give babies a tiny leg up on cognitive ability. The trade-off, however, seems to be a slight increase in the chance of having a physical disability.

A group including University of Florida Health researcher Jeffrey Roth, Ph.D., found that babies born at late term—41 weeks' gestation—are slightly more likely to be classified as gifted and have higher standardized test scores than babies born at [full term](#), or at 40 weeks' gestation. However, babies born at 41 weeks also showed a slightly higher chance of having a [physical disability](#) than babies born at 40 weeks. The group's findings are published online today (June 6, 2016) in *JAMA Pediatrics*.

"What our findings suggest is that while 40 weeks remains the safest time for most babies to be delivered, in uncomplicated pregnancies, going another week seems to have beneficial effects on later performance in school," said Roth, a research professor in department of pediatrics' division of neonatology, within the UF College of Medicine.

Children born at the 41st week were found to score somewhat better on tests given at third through eighth grade—enough to move some of them to a higher level on the Florida Comprehensive Assessment Test. Late-term infants were 2.8 percent more likely to be classified as gifted and 3.1 percent less likely to have poor cognitive outcomes compared with full-term infants. This shift in cognitive outcomes is approximately the equivalent of 10 extra points on each section of the SAT, said David Figlio, Ph.D., director of the Northwestern University Institute for Policy Research and lead author of the study. Late-term infants were also 2.1 percent more likely to be classified as having a physical

disability that requires special classroom accommodation. These physical disabilities most commonly include speech pathologies as well as sensory disorders and orthopedic conditions, and can include children being homebound or hospitalized.

"These results are modest, but still meaningful," Figlio said. "While late-term gestation is associated with somewhat higher rates for physical problems, it's also associated with better cognitive outcomes."

The children of women with low education levels—defined as not having completed high school—demonstrated the largest advantage of spending another week in the womb. Compared with children born full term, children born to low-education mothers at 41 weeks are 7.6 percent more likely to be gifted and 4.2 percent less likely to have poor [cognitive outcomes](#). The differences in physical disability rates—5.1 percent higher than children born at 40 weeks—are also larger for the low-education group.

These children, Roth said, may have benefited from the extra week of uninterrupted brain maturation.

The researchers drew their results from 1.5 million Florida birth records between 1994 and 2002. They linked birth certificate information to public school records from 1998 to 2013. The linking was able to locate 80 percent of infants born in Florida hospitals to students in Florida schools.

"Florida is an appropriate state to conduct this kind of research," Roth said. "Both the Florida Departments of Education and Health have been strong supporters of long-term follow-up of early life events."

Roth said that though many events that occur between birth and entrance into school affect children's cognitive performance, the study sample

was large enough to illustrate the clear connection between weeks of gestation and school [test scores](#) and assignment to exceptional student education classes.

"Did parents separate? Did the kids move around a lot? Did a relative win the lottery?" Roth said. "There's so much that goes on unobserved that could be contributing to these trends—but because this data set is so large, positive and negative events that affect these outcomes basically cancel each other out."

The researchers say the study is not intended to be used for medical decision-making, but simply to provide additional information to physicians and families who are considering whether to induce delivery at full term or wait another week until late term.

Provided by University of Florida

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