

## Prematurity and Poverty – What’s a baby to do?

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In a recently released article in *Pediatrics*, Dr. Jennifer Beauregard and colleagues examined the interesting and important question of whether the influences of prematurity and poverty on cognitive outcome are independent of each other or interactive in their effect.

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In a recently released article in *Pediatrics*, Dr. Jennifer Beauregard and colleagues examined the interesting and important question of whether the influences of prematurity and poverty on cognitive outcome are independent of each other or interactive in their effect ([10.1542/peds.2017-0509](#)). Rather than simply comparing a preterm and a term cohort, they looked across the entire gestational age spectrum at singletons born at 24-40 weeks who participated in the Millennial Cohort Study, a longitudinal birth cohort study in the United Kingdom (UK). Baseline data were gathered from the health maintenance visit at age 9 months, and of 13,267 eligible children, 80%, 79% and 72% completed cognitive assessments at ages 3, 5 and 7 years, respectively. The authors’ research question was straightforward – are prematurity and poverty *additive* in their effect on neurocognitive outcomes OR do these factors work together and *interact* to impact child outcomes.

Although the answer is not completely without caveats, in general the good news is that the effects of poverty and prematurity are additive and not synergistic: I call this good news only because it means that any intervention that reduces the rates of either preterm birth or poverty has the potential to produce direct benefit. The authors are appropriately cautious in their interpretation of all results. They acknowledge the possibility of residual confounding (leftover spurious associations) due to the correlation of poverty with a mother’s risk of preterm birth. They also note that since no assessment was repeated over the 3 visits at ages 3, 5 and 7 years, any statement about individual or group cognitive trajectories is not possible – the impact of gestational age on learning over time cannot be determined from this study. However, for me, the most surprising, and perhaps even shocking, finding was that the estimated effect of poverty on cognitive outcome was so strong that term children living in poverty had lower predicted scores than preterm children not living in poverty. In other words, the impact of social determinants on childhood cognitive outcome appears to be greater than that of prematurity.

Can we generalize this UK study’s findings to the US? The studied population was predominantly white (81%) and children mainly lived in two-parent homes (83%), but 38% were living in poverty at the 9 month visit. While sociodemographic factors including race and marital status are related to outcome in US studies of former very low birth weight infants,<sup>1,2</sup> the study of Beauregard and colleagues carefully includes consideration of these variables. Their work is a unique and meaningful contribution to the understanding of

outcome for premature and term infants, and should spur discussion and concern from both sides of the “pond” and beyond.

**References:**

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