Maternal and fetal characteristics (n = 1056)

Age (years)	29.9 +/- 6.4
Ethnicity (European)	851 (83%)
Spontaneous Conception	1042 (99%)
Maternal height (cm)	161cm +/- 14cm
Maternal weight at booking (kg)	64kg +/-13kg
BMI (kg/m2)	24.0 +/- 5.0
GA at enrollment (weeks)	30.3 +/- 4.0
GA at delivery (weeks)	37.6 +/- 3.0
Weight at delivery (grams)	2476 +/- 1008
NICU admission	324 (31%)
Apgar Score < 5 at 1min <7 at 5min	17 (2%)
Stillbirths	7 (1:150)
Neonatal Deaths	8 (1:130)

Note: continuous variables are summarized with mean +/− (standard deviation) and categorical variables with n (%).

26 **School-age outcomes of late preterm infants by delivery indication**

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OBJECTIVE: Greater than 70% of all preterm births occur between 34 and 36 weeks in the United States. We previously demonstrated improved cognitive outcomes as gestational age increases through 39 weeks; however, it is unknown whether this relationship varies by the reason for delivery (Lipkind et al, AJOG). In this study we aimed to compare school outcomes between preterm (PT) infants at 32-<34 weeks, late preterm (LP) infants at 34-<37 weeks, and full-term (FT) infants by delivery indication.

STUDY DESIGN: Birth certificate and Department of Education administrative data for children born in NYC from 1994-1998 were linked as part of the Longitudinal Study of Early Development. We included all non-anomalous singleton infants delivered from 32-42 weeks gestation who had a third-grade test score. Delivery indications included 1) maternal medical conditions 2) obstetric complications and 3) isolated spontaneous labor. Linear regression was used to estimate the effect of gestational age on test scores. Logistic regression was used to assess the risk of needing special education services.

RESULTS: Of our original cohort, 20,450 (9.7%) had medical indications for delivery, 29,559 (14.0%) had obstetric indications and 126,700 (60.2%) had isolated spontaneous labor. Regardless of indication, children who were delivered PT and LP had significantly higher adjusted odds of needing special education than those who were delivered FT. For all indications PT and LP also had lower adjusted math scores than those delivered FT. LP had lower adjusted English scores than the FT group only in the spontaneous labor group (Table). A linear association between gestational age and test scores was seen through 39 weeks gestation across all indications.

CONCLUSION: There is a significant risk of developmental differences in PT and LP infants compared to FT infants when examining both indicated and spontaneous preterm deliveries. These findings should be taken into account when determining optimum delivery timing.

School age outcomes by gestational age at delivery and delivery indication*

	Medical Indications	Obstetric Indications	Isolated Spontaneous Labor
Odds of Special Education	OR (95% CI)	OR (95% CI)	OR (95% CI)
PT vs FT	1.39 (1.20 to 1.61)	1.35 (1.08 to 1.68)	1.58 (1.34 to 1.86)
LP vs FT	1.25 (1.15 to 1.36)	1.23 (1.12 to 1.37)	1.39 (1.30 to 1.48)
PT vs LP	1.06 (0.83 to 1.34)	1.09 (0.93 to 1.28)	1.11 (0.93 to 1.32)
Adjusted Math Score (z-score)	SD% (95% CI)	SD% (95% CI)	SD% (95% CI)
PT vs FT	-11.59% (-21.0 to -2.3)	-9.9% (-15.9 to -3.8)	-7.8% (-14.4 to -1.2)
LP vs FT	-9.1% (-13.3 to -4.8)	-6.5% (-9.7 to -3.2)	-5.6% (-8.1 to -3.2)
PT vs LP	-3.3 % (-1.3 to 6.6)	-3.8% (-10.4 to 2.9)	-1.6% (-9.0 to 5.8)
Adjusted English Score (z-score)	SD% (95% CI)	SD% (95% CI)	SD% (95% CI)
PT vs FT	-4.3% (-13.9 to 5.3)	-5.4% (-11.6 to 0.9)	-5.3% (-12.1 to 1.5)
LP vs FT	-2.7% (-7.1 to 1.7)	-2.6% (-6.0 to 0.8)	-5.7% (-8.2 to -3.2)
PT vs LP	-0.1% (-7.7 to 7.3)	-1.8% (-8.7 to 5.1)	0.2% (-7.3 to 7.7)

*Adjusting for child sex, maternal age, maternal race/ethnicity, insurance status, parity, 5 minute Apgar <7, neonatal intensive care admission, days absent in third grade, and small for gestational age <10th percentile.