

Appendix 1. Characteristics of the Cohort of Live-Born Singleton Pregnancies During the Study Period Compared With the Subset of These Pregnancies With Available Aneuploidy Screening Blood Sample, Magee-Womens Hospital, Pittsburgh, Pennsylvania

	Singleton Deliveries of Live-Born Infants, n=65,867	Singleton Deliveries of Live-Born Infants With Available Aneuploidy Screening Blood Sample, n=12,861
Maternal age, years		
<20	7.2	7.1
20-29	44.3	41.3
≥30	49.5	51.6
Marital status		
Unmarried	37.7	37.3
Married	62.3	62.7
Maternal education		
Less than high school	8.2	7.6
High school or equivalent	23.3	22.0
Some college	23.1	21.3
College graduate	45.4	49.1
Maternal race/ethnicity		
White	77.1	72.8
Black	18.8	21.2
Puerto Rican	4.1	6.0
Parity		
0	44.8	48.2
1 or more	55.2	51.8
Prepregnancy body mass index, kg/m ²		
<18.5	4.4	4.2
18.5-24.9	55.6	56.5
25.0-29.9	22.2	22.1
≥30.0	17.8	17.2
Smoking status		
Nonsmoker	86.6	88.1
Smoker	13.4	11.9
Type of provider		
Magee-affiliated private practice	84.0	76.9
Magee outpatient resident clinic	16.0	23.1
Preterm birth	10.8	8.9

Appendix 2. Association Between Maternal 25-Hydroxyvitamin D Concentrations at or Before 20 Weeks of Gestation and Preterm Birth in the Sample With Complete Data (n=1820)

Maternal serum 25(OH)D, nmol/L	Cases (n)	Incidence per 100 births ^a	Unadjusted relative risk (95% CI)	Adjusted ^b relative risk (95% CI)
<i>Preterm birth <37 weeks</i>				
<50	170	10.8	1.6 (1.3, 2.1)	2.0 (1.3, 3.0)
50–74.9	215	8.2	1.2 (0.9, 1.5)	1.3 (0.9, 1.8)
≥75	192	6.9*	referent	referent
<i>Spontaneous preterm birth <37 weeks</i>				
<50	95	6.3	1.6 (1.1, 2.1)	2.0 (1.2, 3.3)
50–74.9	110	4.3	1.0 (0.8, 1.4)	1.1 (0.7, 1.6)
≥75	112	4.2*	referent	referent
<i>Medically indicated preterm birth <37 weeks</i>				
<50	75	5.1	1.7 (1.2, 2.4)	2.0 (1.2, 3.3)
50–74.9	105	4.2	1.4 (1.1, 1.9)	1.5 (1.1, 2.3)
≥75	80	3.0*	referent	referent
<i>Preterm birth <34 weeks</i>				
<50	42	2.8	1.8 (1.2, 2.9)	1.9 (1.0, 3.6)
50–74.9	57	2.3	1.4 (1.0, 2.2)	1.6 (0.9, 2.8)
≥75	42	1.6*	referent	referent

Formatted: Font: Not Bold

Formatted: Font: Not Bold

Risk ratios and 95% CI that reach statistical significance at $p < 0.05$ are presented in boldface.

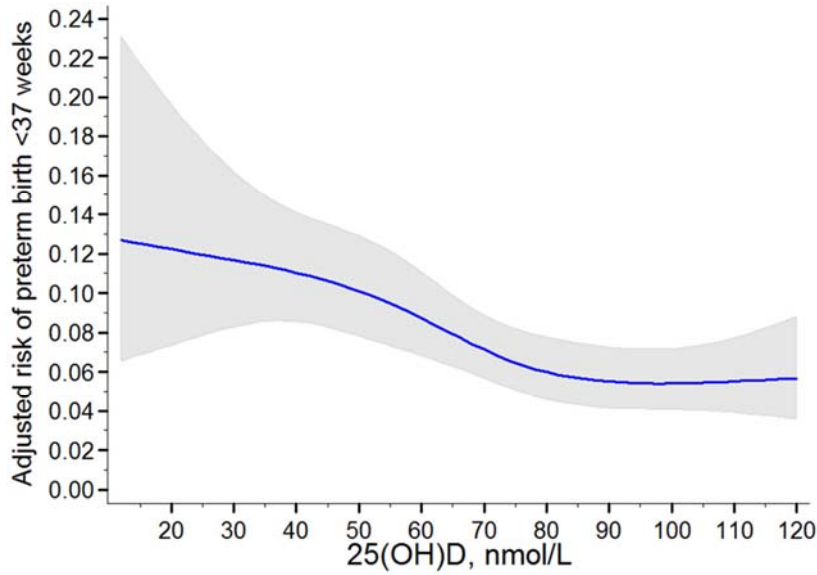
25(OH)D, 25-hydroxyvitamin D; CI, confidence interval

^a Incidence is based on the weighted sample.

^b Adjusted for maternal race and ethnicity, prepregnancy body mass index, parity, maternal education, marital status, smoking status, season and gestational age of blood sampling, assay batch, and year of delivery.

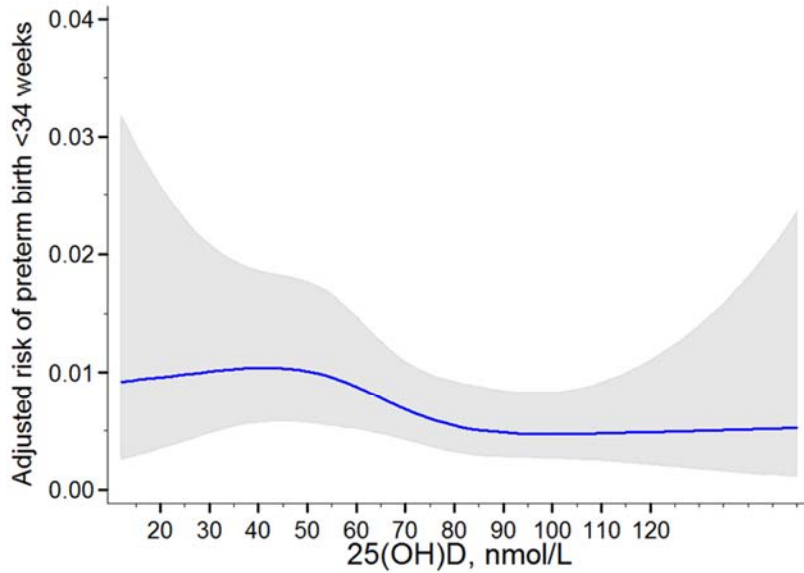
* $P < 0.05$ based on a test for trend adjusted for the case-cohort design.

Appendix 3. Association between maternal 25-hydroxyvitamin D and the adjusted risk of preterm birth <37 weeks of gestation in the sample with complete data (n=1,820).



The *solid line* represents the point estimate and the *gray area* represents its 95% confidence interval. 25-hydroxyvitamin D was modeled as a restricted cubic spline with 4 knots (test of nonlinearity, $P < .01$). The estimates were adjusted for maternal race and ethnicity, prepregnancy body mass index, parity, maternal education, marital status, smoking status, season and gestational age of blood sampling, assay batch, and year of delivery. All covariates were set to the mean value for graphing.

Appendix 4. Association between maternal 25-hydroxyvitamin D and the adjusted risk of preterm birth <34 weeks of gestation in the sample with complete data (n=1,820).



The *solid line* represents the point estimate and the *gray area* represents its 95% confidence interval. 25-hydroxyvitamin D was modeled as a restricted cubic spline with 4 knots (test of nonlinearity, $P < .01$). The estimates were adjusted for maternal race and ethnicity, prepregnancy body mass index, parity, maternal education, marital status, smoking status, season and gestational age of blood sampling, assay batch, and year of delivery. All covariates were set to the mean value for graphing.