

ONLINE REPOSITORY

RESULTS FROM CRUDE ANALYSIS OF
ASSOCIATION OF PRENATAL VITAMIN D
SUFFICIENCY WITH OTHER OUTCOMES

The crude analysis also detected significant associations between prenatal vitamin D status and both food sensitization and any sensitization at age 3 years (P for trend = .04; P for trend = .03, respectively). Finally, the crude analysis also revealed significantly reduced food sensitization, any sensitization, and total IgE levels at

age 3 years in offspring of mothers who had vitamin D sufficiency in the early and late prenatal period compared with those with vitamin D insufficiency in early and late pregnancy (odds ratio = 0.57, 95% confidence interval [CI] 0.33-0.98, P = .04; odds ratio = 0.59, 95% CI 0.35-0.98, P = .04; and β = -0.57, 95% CI -0.97 to -0.16, P = .01, respectively). A similar trend in these associations was observed at age 6 years but did not reach the level of significance (Table II). These findings were all attenuated in adjusted analyses, which suggests that confounding may have contributed to the observed associations.

TABLE E1. Characteristics of subjects included and excluded from analysis of allergic outcomes at age 6 y^a

Subject characteristic	Included (n = 414)	Excluded (n = 392)	<i>P</i>
Maternal age, y (mean, SD)	27.4 (5.4)	27.4 (5.6)	.99
Maternal education: less than college graduation	274 (66.2)	259 (66.1)	1.00
Treatment arm: high-dose prenatal vitamin D (4400 IU/d)	213 (51.4)	192 (49.0)	.53
Study site			.88
Boston	120 (29.0)	120 (30.6)	
San Diego	143 (34.5)	131 (33.4)	
St Louis	151 (36.5)	141 (36.0)	
Female sex	190 (45.9)	195 (49.7)	.31
Child Race/ethnicity			.30
Black, non-Hispanic	169 (40.8)	148 (37.8)	
Hispanic/other	171 (41.3)	157 (40.1)	
White, non-Hispanic	74 (17.9)	87 (22.2)	
Child body mass index at age 6 y (mean [SD])	16.87 (2.83)	16.88 (2.96)	.96
Preterm birth	38 (9.2)	35 (9.0)	.82
Birth mode: vaginal	290 (70.0)	277 (70.7)	.97
Perinatal antibiotics	170 (41.1)	167 (42.9)	.64
Breastfeeding \geq 4 mo	141 (36.5)	106 (30.1)	.08
Season of birth			.37
Fall	118 (28.5)	134 (34.2)	
Spring	93 (22.5)	82 (20.9)	
Summer	108 (26.1)	91 (23.2)	
Winter	95 (22.9)	85 (21.7)	
Older siblings: yes	235 (56.8)	200 (51.0)	.12
Daycare by age 6 y	232 (60.1)	208 (69.1)	.02
Cat in home	44 (10.8)	39 (10.8)	1.00
Dog in home	87 (21.5)	81 (22.9)	.71
Parental asthma	238 (57.5)	214 (54.6)	0.45
Parental hay fever	320 (77.3)	323 (82.4)	.09
Parental eczema	178 (43.0)	171 (42.5)	.95
Asthma by age 6 y	102 (24.6)	96 (24.5)	1.00

Missingness includes breastfeeding for 4 mo (n = 68), cat (n = 40), dog (n = 49), daycare status (n = 119), preterm birth (n = 2), child body mass index at age 6 y (n = 270), and perinatal antibiotics (n = 3).

^aData are given as n (%) of individuals unless otherwise specified.

TABLE E2. Baseline characteristics in study population by primary outcome at age 3 y^a

Subject characteristic	Aeroallergen sensitization (n = 148)	Nonsensitized (n = 383)	<i>P</i>
Maternal age, y (mean [SD])	27.1 (5.4)	27.3 (5.6)	.62
Maternal education: less than college graduation	103 (69.6)	245 (64.0)	.26
Treatment arm: high-dose prenatal vitamin D (4400 IU/d)	69 (46.6)	205 (53.5)	.18
Study site			.84
Boston	32 (21.6)	90 (23.5)	
San Diego	50 (33.8)	132 (34.5)	
St Louis	66 (44.6)	161 (42.0)	
Female sex	62 (41.9)	187 (48.8)	.18
Child race/ethnicity			.32
Black	69 (46.6)	151 (39.4)	
Hispanic/other	52 (35.1)	154 (40.2)	
White	27 (18.2)	78 (20.4)	
Child body mass index at age 3 y (mean [SD])	16.68 (1.95)	16.57 (1.68)	.53
Preterm birth	14 (9.5)	39 (10.2)	.93
Birth mode: vaginal	97 (65.5)	268 (70.0)	.38
Perinatal antibiotics	68 (45.9)	163 (42.6)	.54
Breastfeeding >4 mo	58 (39.2)	144 (37.6)	.68
Season of birth			.78
Fall	47 (31.8)	119 (31.1)	
Spring	36 (24.3)	85 (22.2)	
Summer	37 (25.0)	91 (23.8)	
Winter	28 (18.9)	88 (23.0)	
Older siblings	87 (58.8)	220 (57.4)	.86
Daycare by age 3 y	82 (55.4)	208 (54.3)	.85
Cat in home	19 (12.8)	48 (12.5)	1.00
Dog in home	31 (20.9)	104 (27.2)	.13
Parental asthma	99 (66.9)	208 (54.3)	.01 ^b
Parental hay fever	116 (78.4)	303 (79.1)	.95
Parental eczema	68 (46.3)	156 (40.8)	.30
Asthma by age 3 y	35 (23.6)	50 (13.1)	.004 ^b

Missingness includes breastfeeding for 4 mo (n = 35), cat (n = 10), dog (n = 12), daycare status (n = 27), body mass index (n = 1), and parental eczema (n = 2).

^aData are given as n (%) unless otherwise specified.

^bIndicates statistical significance (P < .05).

TABLE E3. Allergic outcomes at age 3 y^a

Subject characteristic	Univariable			Multivariable ^a		
	Odds ratio (95% CI)	<i>P</i>	<i>P</i> for trend	Adjusted odds ratio (95% CI)	<i>P</i>	<i>P</i> for trend
Aeroallergen sensitization						
Insufficient in early and late prenatal ^b (n = 202)	Reference	—	.74	Reference	—	.99
Early insufficient/late sufficient (n = 199)	0.9 (0.58-1.4)	.64		0.92 (0.59-1.45)	.72	
Sufficient in early and late prenatal (n = 84)	0.94 (0.52-1.64)	.82		1.05 (0.56-1.95)	.87	
Clinical allergic rhinitis						
Insufficient in early and late prenatal (n = 202)	Reference	—	.25	Reference	—	.45
Early insufficient/late sufficient (n = 199)	0.75 (0.46-1.22)	.25		0.79 (0.47-1.30)	.35	
Sufficient in early and late prenatal (n = 84)	0.74 (0.38-1.38)	.36		0.82 (0.39-1.67)	.60	
Aeroallergen sensitization and clinical allergic rhinitis						
Insufficient in early and late prenatal (n = 202)	Reference	—	.10	Reference	—	.11
Early insufficient/late sufficient (n = 199)	0.35 (0.13-0.82)	.02 ^c		0.34 (0.13-0.82)	.02 ^c	
Sufficient in early and late prenatal (n = 84)	0.61 (0.20-1.58)	.34		0.60 (0.18-1.76)	.38	
Food sensitization						
Insufficient in early and late prenatal (n = 202)	Reference	—	.04 ^c	Reference	—	.21
Early insufficient/late sufficient (n = 199)	0.80 (0.53-1.19)	.27		0.85 (0.56-1.28)	.41	
Sufficient in early and late prenatal (n = 84)	0.57 (0.33-0.98)	.04 ^c		0.69 (0.37-1.24)	.18	
Any sensitization						
Insufficient in early and late prenatal (n = 202)	Reference	—		Reference	—	
Early insufficient/late sufficient (n = 199)	0.72 (0.48-1.06)	.10	.03 ^c	0.77 (0.51-1.15)	0.20	.17
Sufficient in early and late prenatal (n = 84)	0.59 (0.35-0.98)	.04 ^c		0.72 (0.40-1.26)	0.25	
Clinical eczema						
Insufficient in early and late prenatal (n = 202)	Reference	—	.30	Reference	—	.72
Early insufficient/late sufficient (n = 199)	0.89 (0.56-1.41)	.61		1.01 (0.63-1.64)	0.96	
Sufficient in early and late prenatal (n = 84)	0.72 (0.37-1.32)	.30		1.17 (0.57-2.34)	0.67	
Total IgE						
Insufficient in early and late prenatal (n = 202)	Reference	—	.01 ^c	Reference	—	.15
Early insufficient/late sufficient (n = 199)	−0.08 (−0.39 to 0.23)	.62		−0.01 (−0.32 to 0.30)	0.97	
Sufficient in early and late prenatal (n = 84)	−0.57 (−0.97 to −0.16)	.01 ^c		−0.38 (−0.80 to 0.05)	0.08	

CI, confidence interval.

^aAdjusted for maternal education, study site, preterm birth, child sex, child race and ethnicity, parental asthma, and child body mass index at age 3 y.^bIn the following order: baseline prenatal vitamin D (10-18 wk gestational age), third trimester prenatal vitamin D (32-38 wk gestational age).^cIndicates statistical significance (*P* < .05).

TABLE E4. Treatment assignment by vitamin D sufficiency group at age 6 y

Subject characteristic	High-dose vitamin D (n = 204)	Low-dose vitamin D (n = 182)
Insufficient in early and late prenatal (n = 165)	40 (24%)	125 (76%)
Early insufficient/late sufficient (n = 157)	129 (82%)	28 (18%)
Sufficient in early and late prenatal (n = 64)	35 (55%)	29 (45%)

TABLE E5. Aeroallergen sensitization stratified by asthma status at age 3 y

Subject characteristic	Asthma (n = 85)				No asthma (n = 446)			
	Aeroallergen sensitization		Adjusted odds ratio (95% confidence interval)	P	Aeroallergen sensitization		Adjusted odds ratio (95% confidence interval)	P
	Yes	No			Yes	No		
Insufficient in early and late prenatal	16	24	Reference	—	42	120	Reference	—
Early insufficient/late sufficient	12	15	1.47 (0.43-5.13)	0.54	41	131	0.91 (0.54-1.51)	0.70
Sufficient in early and late prenatal	3	4	1.02 (0.11-8.99)	0.98	20	57	1.16 (0.58-2.26)	0.67