

Online Data Supplement

Early Life Weight Gain and Development of Childhood Asthma in a Prospective Birth Cohort

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Table E1. The baseline characteristics of the included and excluded participant samples

Variables	Subjects in the included sample (1,928)	Subjects in the excluded sample (1,006)
Maternal characteristics		
Maternal age (years), mean (SD)	28.6 (6.6)	27.9 (6.4)
Pre-pregnancy BMI (kg/m ²), mean (SD)	26.7 (6.6)	25.6 (6.1)
Null parity , <i>n</i> (%)	836 (42.5)	423 (42.0)
Breast versus formula feeding , <i>n</i> (%)		
Formula only	474 (24.6)	NA
Exclusively breastfed	150 (7.8)	NA
Both	1,300 (67.6)	NA
Maternal history of asthma , yes <i>n</i> (%)	259 (13.6)	NA
Gestational diabetes , yes <i>n</i> (%)	92 (4.7)	52 (5.1)
Hypertensive disorder , yes <i>n</i> (%)*	129 (6.6)	46 (4.6)
Education , <i>n</i> (%)		
High school or less	1,711 (87.3)	852 (84.7)
College or higher	248 (12.7)	154 (15.3)
Maternal smoking during pregnancy , <i>n</i> (%)*		
Never	1,597 (81.9)	805 (80.0)
Quitter	154 (7.9)	67 (7.0)
Current smoker	200 (10.3)	134 (13.3)
Maternal alcohol drinking during pregnancy , yes <i>n</i> (%)	141 (7.4)	87 (8.6)
Child characteristics		
Child age (years), mean (SD) ^b	7.9 (3.3)	7.4 (3.7)
Sex , male <i>n</i> (%)	991 (50.4)	504 (50.1)
Birthweight (g), mean (SD)*	2917.1 (812.8)	2979.6 (753.2)
Gestational age (weeks), mean (SD)*	37.7 (3.5)	38.0 (3.1)
Preterm birth (gestational age <37), <i>n</i> (%)*	526 (26.7)	270 (26.8)
Ever asthma , yes <i>n</i> (%)*	510 (26.5)	NA
Birth weight for gestation , <i>n</i> (%)*		
Small for gestational age	248 (12.6)	125 (12.4)
Appropriate for gestational age	1,532 (77.9)	787 (78.2)
Large for gestational age	188 (9.6)	87 (9.3)

Table E2. Sensitivity analyses of the association of weight gain and BMI attained status in the first 12 months, respectively, with various asthma definitions.

	Early life weight gain category				Early-life BMI attained status		
	On track	Slow	Rapid	Extremely rapid	Normal	Underweight	Overweight
Physician-diagnosed ever asthma^b							
N ₁ /N ₂ [*]	107/568	37/196	73/283	270/771	182/905	7/39	298/874
Crude RR (95% CI)	Ref	1.00 (0.72-1.40)	1.37 (1.05-1.78)	1.86 (1.53-2.26)	Ref	0.89 (0.45-1.77)	1.70 (1.45-1.99)
Adjusted RR (95% CI) ^a	Ref	0.98 (0.69-1.40)	1.20 (0.91-1.58)	1.41 (1.11-1.78)	Ref	0.82 (0.41-1.64)	1.30 (1.07-1.59)
Physician-diagnosed recurrent asthma^c							
N ₁ /N ₂ [*]	96/568	31/196	68/283	251/771	155/905	7/39	266/874
Crude RR (95% CI)	Ref	0.95 (0.65-1.37)	1.43 (1.08-1.88)	1.89 (1.53-2.33)	Ref	1.04 (0.52-2.06)	1.80 (1.51-2.14)
Adjusted RR (95% CI) ^a	Ref	0.96 (0.65-1.41)	1.20 (0.90-1.61)	1.38 (1.07-1.78)	Ref	0.99 (0.50-1.98)	1.41 (1.14-1.73)
Physician-diagnosed ever asthma after 6 years of age^d							
N ₁ /N ₂ [*]	81/361	28/138	59/193	223/524	131/587	6/29	236/582
Crude RR (95% CI)	Ref	0.90 (0.62-1.33)	1.36 (1.02-1.81)	1.90 (1.53-2.35)	Ref	0.90 (0.43-1.87)	1.82 (1.53-2.17)
Adjusted RR (95% CI) ^a	Ref	0.88 (0.58-1.32)	1.21 (0.89-1.64)	1.44 (1.11-1.88)	Ref	0.92 (0.43-1.95)	1.43 (1.15-1.77)
Physician-diagnosed recurrent asthma after 6 years of age^e							
N ₁ /N ₂ [*]	68/361	22/138	55/193	191/524	113/587	6/29	212/582
Crude RR (95% CI)	Ref	0.85 (0.55-1.32)	1.52 (1.11-2.07)	1.94 (1.52-2.47)	Ref	1.09 (0.52-2.26)	1.91 (1.57-2.33)
Adjusted RR (95% CI) ^a	Ref	0.85 (0.53-1.35)	1.31 (0.95-1.83)	1.46 (1.09-1.95)	Ref	1.14 (0.53-2.46)	1.48 (1.17-1.88)
Physician-diagnosed asthma after 6 years of age in 2 consecutive years^f							
N ₁ /N ₂ [*]	66/361	22/138	53/193	186/524	110/587	6/29	206/582
Crude RR (95% CI)	Ref	0.87 (0.56-1.36)	1.50 (1.09-2.06)	1.94 (1.52-2.49)	Ref	1.14 (0.80-1.63)	1.71 (1.42-2.06)
Adjusted RR (95% CI) ^a	Ref	0.88 (0.55-1.40)	1.30 (0.93-1.83)	1.47 (1.09-1.98)	Ref	1.17 (0.55-2.52)	1.49 (1.17-1.90)

NOTE: **RR**: risk ratio; **CI**: confidence interval.

^{*} N₁: number of individuals with asthma; N₂: number of individuals in each exposure group.

^a Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, preterm status, birth weight for gestation, maternal history of asthma, hypertensive disorders, gestational diabetes, preterm status, birth weight for gestation, child's age, child's sex, and breastfeeding status.

^b *Physician-diagnosed ever asthma* was defined, if a child, at age 2 or older, had ever been diagnosed as having asthma by a physician, with an ICD-9-CM code=493.xx;

^c *Physician-diagnosed recurrent asthma* was defined based on physician-diagnosed with an ICD-9-CM code=493.xx at least two or more times after 2 years of age;

^d *Physician-diagnosed ever asthma after 6 years of age* was defined as physician-diagnosis with an ICD-9 code=493.xx after 6 years of age;

^e *Physician-diagnosed recurrent asthma after 6 years of age* was defined as physician-diagnosed with an ICD-9 code=493.xx at least two or more times after 6 years of age

^f *Physician-diagnosed asthma after 6 years of age in 2 consecutive years* was defined as physician-diagnosed with an ICD-9 code=493.xx in two consecutive years after 6 years of age.

Table E3. The association of weight gain and BMI attained status in the first 4, 12 and 24 months, separately, with asthma.

	n_1/n_2^d	Crude RR (95% CI)	Adjusted ^a RR (95% CI)	Adjusted ^b RR (95% CI)	Adjusted ^c RR (95% CI)
The first 4 months					
Early-life weight gain categories					
On track	149/706	Ref	Ref	Ref	Ref
Slow weight gain	96/420	1.08 (0.86-1.36)	1.05 (0.82-1.33)	1.06 (0.84-1.35)	1.09 (0.85-1.38)
Rapid weight gain	76/295	1.22 (0.96-1.55)	1.19 (0.93-1.53)	1.19 (0.93-1.52)	1.19 (0.93-1.52)
Extremely rapid weight gain	189/507	1.77 (1.47-2.12)	1.43 (1.18-1.74)	1.36 (1.12-1.66)	1.35 (1.11-1.65)
Early-life BMI attained status					
Normal	258/1,177	Ref	Ref	Ref	Ref
Underweight	35/131	1.22 (0.90-1.65)	1.04 (0.74-1.46)	1.07 (0.77-1.50)	0.99 (0.70-1.38)
Overweight	217/620	1.60 (1.37-1.86)	1.29 (1.09-1.52)	1.21 (1.02-1.44)	1.36 (1.15-1.61)
The first 12 months					
Early-life weight gain categories					
On track	107/568	Ref	Ref	Ref	Ref
Slow weight gain	37/196	1.00 (0.72-1.40)	0.98 (0.69-1.40)	0.99 (0.69-1.41)	1.02 (0.72-1.46)
Rapid weight gain	73/283	1.37 (1.05-1.78)	1.20 (0.91-1.58)	1.19 (0.91-1.57)	1.18 (0.90-1.55)
Extremely rapid weight gain	270/771	1.86 (1.53-2.26)	1.41 (1.11-1.78)	1.35 (1.07-1.70)	1.32 (1.04-1.68)
Early-life BMI attained status					
Normal	182/905	Ref	Ref	Ref	Ref
Underweight	7/39	0.89 (0.45-1.77)	0.83 (0.42-1.66)	0.83 (0.42-1.66)	0.78 (0.39-1.54)
Overweight	298/874	1.70 (1.45-1.99)	1.32 (1.09-1.60)	1.27 (1.05-1.54)	1.43 (1.18-1.73)
The first 24 months					
Early-life weight gain categories					
On track	103/500	Ref	Ref	Ref	Ref
Slow weight gain	36/165	1.06 (0.76-1.48)	1.01 (0.71-1.44)	1.02 (0.72-1.45)	1.04 (0.73-1.48)
Rapid weight gain	53/259	1.03 (0.77-1.39)	0.86 (0.63-1.19)	0.86 (0.63-1.19)	0.84 (0.61-1.16)
Extremely rapid weight gain	272/760	1.74 (1.42-2.12)	1.30 (1.03-1.64)	1.25 (1.00-1.57)	1.21 (0.96-1.53)
Early-life BMI attained status					
Normal	163/798	Ref	Ref	Ref	Ref
Underweight	3/14	1.05 (0.38-2.89)	1.27 (0.47-3.43)	1.29 (0.48-3.51)	1.18 (0.44-3.16)

Overweight	298/862	1.69 (1.44-2.00)	1.32 (1.08-1.61)	1.27 (1.04-1.55)	1.40 (1.15-1.71)
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NOTE:

RR: risk ratio; **CI:** confidence interval.

^a Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, maternal history of asthma, hypertensive disorders, gestational diabetes, child's age, child's sex, birth weight for gestation, breastfeeding status and preterm status.

^b Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, maternal history of asthma, hypertensive disorders, gestational diabetes, child's age, child's sex, birth weight for gestation, breastfeeding status and gestational age.

^c Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, maternal history of asthma, hypertensive disorders, gestational diabetes, child's age, child's sex, birth weight for gestation, breastfeeding status and birthweight.

^d n₁: number of individuals with asthma; n₂: number of individuals in each exposure group.

Table E4. The association of weight gain and BMI attained status in the first 4 and 24 months, respectively, with asthma, stratified by preterm birth status and birthweight.

	Early life weight gain category				Early-life BMI attained status		
	On track	Slow	Rapid	Extremely rapid	Normal	Underweight	Overweight
First 4 months							
Term children							
N ₁ /N ₂ ^a	114/607	87/395	52/215	52/203	203/1,022	32/121	70/277
Crude RR (95% CI)	Ref	1.17 (0.91-1.50)	1.29 (0.96-1.72)	1.36 (1.02-1.82)	Ref	1.33 (0.97-1.84)	1.27 (1.00-1.61)
Adjusted RR (95% CI) ^b	Ref	1.02 (0.78-1.34)	1.30 (0.96-1.75)	1.38 (1.04-1.83)	Ref	1.08 (0.75-1.56)	1.22 (0.96-1.56)
Preterm children							
N ₁ /N ₂ ^a	35/99	9/25	24/80	136/303	55/155	3/10	146/342
Crude RR (95% CI)	Ref	1.02 (0.57-1.83)	0.85 (0.55-1.30)	1.27 (0.95-1.70)	Ref	0.85 (0.32-2.23)	1.20 (0.94-1.54)
Adjusted RR (95% CI) ^b	Ref	1.25 (0.69-2.26)	1.02 (0.68-1.52)	1.43 (1.08-1.90)	Ref	0.76 (0.20-2.85)	1.31 (1.03-1.65)
Birthweight <2,500g							
N ₁ /N ₂ ^a	28/89	7/25	21/77	133/301	44/141	2/10	143/341
Crude RR (95% CI)	Ref	0.89 (0.44-1.79)	0.87 (0.54-1.40)	1.40 (1.01-1.96)	Ref	0.64 (0.18-2.27)	1.34 (1.02-1.77)
Adjusted RR (95% CI) ^b	Ref	0.99 (0.51-1.92)	0.97 (0.62-1.51)	1.41 (1.05-1.91)	Ref	0.68 (0.18-2.56)	1.32 (1.03-1.70)
Birthweight ≥2,500g							
N ₁ /N ₂ ^a	121/617	89/395	55/218	56/206	214/1,036	33/121	74/279
Crude RR (95% CI)	Ref	1.15 (0.90-1.46)	1.29 (0.97-1.70)	1.39 (1.05-1.82)	Ref	1.32 (0.96-1.80)	1.28 (1.02-1.61)
Adjusted RR (95% CI) ^b	Ref	1.00 (0.77-1.31)	1.34 (1.01-1.79)	1.46 (1.11-1.91)	Ref	1.06 (0.74-1.51)	1.32 (1.05-1.66)
First 24 months							
Term children							
N ₁ /N ₂ ^a	98/474	34/159	44/221	100/378	151/746	3/14	122/472
Crude RR (95% CI)	Ref	1.03 (0.73-1.46)	0.96 (0.70-1.32)	1.28 (1.00-1.63)	Ref	1.06 (0.38-2.92)	1.28 (1.04-1.57)
Adjusted RR (95% CI) ^b	Ref	0.99 (0.68-1.42)	0.81 (0.57-1.15)	1.21 (0.94-1.57)	Ref	1.32 (0.50-3.53)	1.23 (0.98-1.54)
Preterm children							
N ₁ /N ₂ ^a	5/26	2/6	9/28	171/381	12/52	0/0	175/389
Crude RR (95% CI)	Ref	1.73 (0.44-6.89)	1.67 (0.64-4.34)	2.33 (1.05-5.18)	Ref	NA	1.95 (1.17-3.23)
Adjusted RR (95% CI) ^b	Ref	2.15 (0.50-9.12)	1.47 (0.53-4.06)	2.44 (1.02-5.85)	Ref	NA	1.83 (1.08-3.09)
Birthweight <2,500g							
N ₁ /N ₂ ^a	5/23	1/2	5/26	165/387	7/35	0/0	169/403
Crude RR (95% CI)	Ref	2.30 (0.47-11.28)	0.88 (0.29-2.68)	1.96 (0.89-4.30)	Ref	NA	2.10 (1.07-4.11)

Adjusted RR (95% CI) ^b	Ref	1.88 (0.39-9.05)	0.53 (0.17-1.68)	1.44 (0.63-3.29)	Ref	NA	1.82 (0.91-3.61)
Birthweight ≥2,500g							
N ₁ /N ₂ ^a	98/477	35/163	48/223	107/373	156/763	3/14	129/459
Crude RR (95% CI)	Ref	1.05 (0.74-1.47)	1.05 (0.77-1.42)	1.40 (1.10-1.77)	Ref	1.05 (0.38-2.89)	1.37 (1.12-1.68)
Adjusted RR (95% CI) ^b	Ref	0.98 (0.69-1.39)	0.93 (0.66-1.29)	1.35 (1.06-1.73)	Ref	1.22 (0.47-3.19)	1.34 (1.08-1.65)

NOTE:

RR: risk ratio; **CI**: confidence interval.

^a N₁: number of individuals with asthma; N₂: number of individuals in each exposure group.

^b Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, maternal history of asthma, hypertensive disorders, gestational diabetes, preterm status, birth weight for gestation, child's age, child's sex, and breastfeeding status.

Table E5. The association of weight gain and BMI attained status in the first 4, 12 and 24 months, respectively, with asthma, stratified by birth weight for gestation.

	Early life weight gain category				Early-life BMI attained status		
	On track	Slow	Rapid	Extremely rapid	Normal	Underweight	Overweight
First 4 months							
Small for gestational age							
N_1/N_2^a	16/71	11/35	9/54	23/85	28/130	3/9	28/106
Crude RR (95% CI)	Ref	1.39 (0.73-2.68)	0.74 (0.35-1.55)	1.20 (0.69-2.09)	Ref	1.55 (0.58-4.13)	1.23 (0.78-1.94)
Adjusted RR (95% CI) ^b	Ref	1.01 (0.51-2.00)	0.65 (0.30-1.39)	1.04 (0.59-1.81)	Ref	1.70 (0.73-3.95)	1.18 (0.74-1.87)
Appropriate for gestational age							
N_1/N_2^a	126/560	66/298	64/232	162/406	210/913	24/86	184/497
Crude RR (95% CI)	Ref	0.98 (0.76-1.28)	1.23 (0.95-1.58)	1.77 (1.46-2.15)	Ref	1.21 (0.85-1.74)	1.61 (1.36-1.90)
Adjusted RR (95% CI) ^b	Ref	0.94 (0.71-1.23)	1.19 (0.92-1.54)	1.43 (1.16-1.76)	Ref	0.96 (0.63-1.45)	1.27 (1.06-1.52)
Large for gestational age							
N_1/N_2^a	7/75	19/87	3/9	4/16	20/134	8/36	5/17
Crude RR (95% CI)	Ref	2.34 (1.04-5.27)	3.57 (1.11-11.46)	2.68 (0.89-8.10)	Ref	1.49 (0.71-3.10)	1.97 (0.85-4.58)
Adjusted RR (95% CI) ^b	Ref	4.44 (1.48-13.32)	5.31 (1.39-20.26)	3.36 (0.97-11.60)	Ref	1.61 (0.67-3.87)	2.61 (0.92-7.44)
First 12 months							
Small for gestational age							
N_1/N_2^a	12/40	3/6	9/46	33/137	20/72	1/2	36/155
Crude RR (95% CI)	Ref	1.67 (0.66-4.23)	0.65 (0.31-1.39)	0.80 (0.46-1.41)	Ref	1.80 (0.43-7.58)	0.84 (0.52-1.34)
Adjusted RR (95% CI) ^b	Ref	2.83 (0.88-9.10)	0.76 (0.34-1.69)	0.82 (0.45-1.50)	Ref	2.42 (0.60-9.81)	0.77 (0.46-1.29)
Appropriate for gestational age							
N_1/N_2^a	82/453	27/131	61/223	229/606	143/709	3/16	253/688
Crude RR (95% CI)	Ref	1.14 (0.77-1.68)	1.51 (1.13-2.02)	2.09 (1.67-2.60)	Ref	0.93 (0.33-2.61)	1.82 (1.53-2.17)
Adjusted RR (95% CI) ^b	Ref	1.10 (0.73-1.66)	1.33 (0.98-1.80)	1.58 (1.22-2.06)	Ref	0.78 (0.26-2.28)	1.41 (1.14-1.75)
Large for gestational age							
N_1/N_2^a	13/75	7/59	3/14	8/28	19/124	3/21	9/31
Crude RR (95% CI)	Ref	0.68 (0.29-1.61)	1.24 (0.40-3.79)	1.65 (0.76-3.55)	Ref	0.93 (0.30-2.89)	1.89 (0.95-3.78)
Adjusted RR (95% CI) ^b	Ref	0.74 (0.29-1.92)	0.89 (0.26-3.07)	1.53 (0.57-4.09)	Ref	0.97 (0.25-3.70)	1.93 (0.82-4.57)
First 24 months							
Small for gestational age							
N_1/N_2^a	11/40	2/5	6/29	36/144	16/56	0/0	39/162
Crude RR (95% CI)	Ref	1.45 (0.44-4.77)	0.75 (0.31-1.80)	0.91 (0.51-1.62)	Ref	NA	0.84 (0.51-1.39)

Adjusted RR (95% CI) ^b	Ref	2.31 (0.38-13.92)	0.74 (0.24-2.26)	0.96 (0.50-1.84)	Ref	NA	0.87 (0.49-1.55)
Appropriate for gestational age							
N ₁ /N ₂ ^a	81/389	25/110	45/205	228/591	127/616	2/8	250/671
Crude RR (95% CI)	Ref	1.09 (0.73-1.62)	1.05 (0.76-1.46)	1.85 (1.49-2.31)	Ref	1.21 (0.36-4.07)	1.81 (1.50-2.17)
Adjusted RR (95% CI) ^b	Ref	1.00 (0.66-1.52)	0.89 (0.64-1.25)	1.35 (1.05-1.74)	Ref	1.38 (0.39-4.92)	1.38 (1.11-1.72)
Large for gestational age							
N ₁ /N ₂ ^a	11/71	9/50	2/15	8/25	20/126	1/6	9/29
Crude RR (95% CI)	Ref	1.16 (0.52-2.60)	0.86 (0.21-3.50)	2.07 (0.94-4.56)	Ref	1.05 (0.17-6.61)	2.07 (0.37-11.38)
Adjusted RR (95% CI) ^b	Ref	1.45 (0.61-3.43)	0.27 (0.03-2.28)	1.92 (0.68-5.38)	Ref	1.96 (0.99-3.85)	1.80 (0.77-4.18)

NOTE:

RR: risk ratio; **CI**: confidence interval.

^a N₁: number of individuals with asthma; N₂: number of individuals in each exposure group.

^b Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, maternal history of asthma, hypertensive disorders, gestational diabetes, preterm status, birth weight for gestation, child's age, child's sex, and breastfeeding status.

Table E6. The association of weight gain and BMI attained status in the first 4, 12, and 24 months, respectively, with asthma.

	Early life weight gain category				Early-life BMI attained status		
	On track	Slow	Rapid	Extremely rapid	Normal	Underweight	Overweight
First 4 months (n ₁ /n ₂) ^a	149/706	96/420	76/295	189/507	258/1,177	35/131	217/620
Crude RR (95% CI)	Ref	1.08 (0.86-1.36)	1.22 (0.96-1.55)	1.77 (1.47-2.12)	Ref	1.22 (0.90-1.65)	1.60 (1.37-1.86)
Adjusted RR (95% CI) ^b	Ref	1.07 (0.84-1.36)	1.19 (0.93-1.52)	1.44 (1.19-1.75)	Ref	1.07 (0.76-1.51)	1.27 (1.08-1.50)
Adjusted RR (95% CI) ^c	Ref	1.05 (0.83-1.35)	1.20 (0.94-1.35)	1.42 (1.16-1.73)	Ref	1.06 (0.76-1.49)	1.25 (1.05-1.48)
First 12 months (n ₁ /n ₂) ^a	107/568	37/196	73/283	270/771	182/905	7/39	298/874
Crude RR (95% CI)	Ref	1.00 (0.72-1.40)	1.37 (1.05-1.78)	1.86 (1.53-2.26)	Ref	0.89 (0.45-1.77)	1.70 (1.45-1.99)
Adjusted RR (95% CI) ^b	Ref	1.03 (0.72-1.47)	1.19 (0.91-1.56)	1.40 (1.11-1.77)	Ref	0.94 (0.47-1.90)	1.30 (1.07-1.59)
Adjusted RR (95% CI) ^c	Ref	0.98 (0.69-1.40)	1.20 (0.91-1.58)	1.40 (1.10-1.77)	Ref	0.82 (0.41-1.62)	1.30 (1.06-1.59)
First 24 months (n ₁ /n ₂) ^a	103/500	36/165	53/259	272/760	163/798	3/14	298/862
Crude RR (95% CI)	Ref	1.06 (0.76-1.48)	1.03 (0.77-1.39)	1.74 (1.42-2.12)	Ref	1.05 (0.38-2.89)	1.69 (1.44-2.00)
Adjusted RR (95% CI) ^b	Ref	1.04 (0.73-1.48)	0.84 (0.61-1.15)	1.28 (1.02-1.62)	Ref	1.37 (0.51-3.71)	1.30 (1.07-1.59)
Adjusted RR (95% CI) ^c	Ref	1.00 (0.70-1.42)	0.87 (0.63-1.19)	1.28 (1.01-1.62)	Ref	1.25 (0.45-3.47)	1.30 (1.05-1.59)

NOTE:

RR: risk ratio; **CI:** confidence interval.

^a n₁: number of individuals with asthma; n₂: number of individuals in each exposure group.

^b Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, maternal history of asthma, hypertensive disorders, gestational diabetes, preterm status, birth weight for gestation, child's birth year, child's age, child's sex, and breastfeeding status.

^c Adjusted for maternal age, education, race, smoking, parity, pre-pregnancy BMI, maternal history of asthma, hypertensive disorders, gestational diabetes, preterm status, birth weight for gestation, child's birth year, child's age, child's sex, breastfeeding status, and birth year.