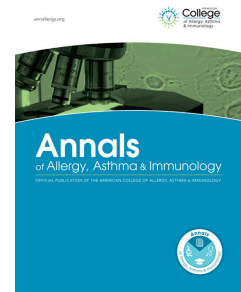


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Food Allergy and Growth from Late Childhood to Early Adolescence

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Conflicts of Interest: None

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Clinical Trial Registration

Clinical Trial Registration: None

Keywords (MeSH)

Adolescent, Child, Food Hypersensitivity, Growth and Development, Growth, Pediatric Obesity, Body Height

Abbreviations/Acronyms

B/A: Body Mass Index-for-Age z score

BMI: Body Mass Index

H/A: Height-for-Age z score

Immunoglobulin (Ig)

SAGE: Study of Asthma, Genes, and Environment

W/A: Weight-for-Age z score

WHO: World Health Organization

Word Count

Word Count: 1000

Figures

Figures: none

Tables

Tables: 1

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Table 1. Characteristics of the Study Population^a

	Food Allergy at Ages 7 to 10 Years (n = 46)	No Food Allergy at Ages 7 to 10 Years (n = 369)	p Value^b
Background Characteristics			
Sex, n (%)			
Female	18 (39.13)	161 (43.63)	0.637
Age, years, mean (SD)			
Ages 7 to 10 Years	8.95 (± 0.47)	8.99 (± 0.52)	0.624
Ages 11 to 14 Years	12.48 (± 0.52)	12.55 (± 0.53)	0.358
Region of Residence, n (%)			
Urban	29 (63.04)	207 (56.10)	
Rural	15 (32.61)	135 (36.59)	0.516
Northern	2 (4.35)	27 (7.32)	0.548
Ethnicity, n (%)			
Indigenous	6 (13.04)	59 (15.99)	1.000
Caucasian	32 (69.57)	297 (80.49)	
Other	8 (17.39)	13 (3.52)	0.001
Household Income, n (%)			
> \$60,000	23 (50.00)	203 (55.01)	0.534
Maternal Education^c, n (%)			
Some Post-Secondary Education	33 (71.74)	308 (83.47)	0.064
Birth and Home Environment			
Maternal Atopy^c, n (%)			
Yes	29 (63.04)	244 (66.12)	0.742
Smoke Exposure During Pregnancy^c, n (%)			
Yes	9 (19.57)	62 (16.08)	0.678
Gestational Age			
Weeks, mean (SD)	39.89 (± 1.49)	39.55 (± 1.93)	0.247
< 37 Weeks, n (%)	1 (2.17)	26 (7.05)	0.340
Birthweight, mean (SD)			
Measured in Kilograms	3.43 (± 0.49)	3.43 (± 0.62)	0.992
Breastfeeding, n (%)			
< 1 Week	3 (6.52)	60 (16.26)	0.416
1 - 12 Weeks	6 (13.04)	46 (12.47)	0.599
3 - 9 Months	16 (34.78)	159 (43.09)	
> 10 Months	21 (45.65)	104 (28.18)	0.052
Maternal Smoke Exposure at Home^c, n (%)			
Yes	4 (8.70)	35 (9.49)	1.000
Maternal Current Smoking^c, n (%)			

Yes	10 (21.74)	67 (18.16)	0.549
Atopy and Medications			
Atopic Dermatitis, n (%)			
Ages 7 to 10 Years	13 (28.26)	48 (13.01)	0.013
Persistent	4 (8.70)	9 (2.44)	0.045
Asthma, n (%)			
Ages 7 to 10 Years	29 (63.04)	119 (32.25)	≤ 0.001
Persistent	22 (47.83)	76 (20.60)	≤ 0.001
Allergic Rhinitis, n (%)			
Ages 7 to 10 Years	30 (65.22)	128 (34.69)	≤ 0.001
Persistent	19 (41.30)	78 (21.14)	0.005
Food Allergy, n (%)			
Persistent	37 (80.43)		
Medications^c, n (%)			
Prednisone	4 (8.70)	15 (4.07)	0.147
Inhaled Corticosteroid	28 (60.87)	97 (26.29)	≤ 0.001
Anthropometric Measures			
Height-for-Age, mean (SD)			
Ages 7 to 10 Years	0.26 (±0.92)	0.60 (±1.05)	0.039
Ages 11 to 14 Years	0.46 (±0.97)	0.68 (±1.09)	0.193
Weight-for-Age, mean (SD)			
Ages 7 to 10 Years	0.58 (±1.09)	0.92 (±1.33)	0.102
Ages 11 to 14 Years	0.45 (±1.03)	0.69 (±1.19)	0.188
BMI-for-Age, mean (SD)			
Ages 7 to 10 Years	0.56 (±1.21)	0.78 (±1.39)	0.316
Ages 11 to 14 Years	0.34 (±1.35)	0.58 (±1.36)	0.253
Obese^d, n (%)			
Ages 7 to 10 Years	5 (10.87)	68 (18.43)	0.303
Ages 11 to 14 Years	7 (15.22)	59 (15.99)	1.000
Overweight^d, n (%)			
Ages 7 to 10 Years	7 (15.22)	70 (18.97)	0.688
Ages 11 to 14 Years	8 (17.39)	78 (21.14)	0.700
Wasting^d, n (%)			
Ages 7 to 10 Years	0 (0.00)	5 (1.36)	1.000
Ages 11 to 14 Years	0 (0.00)	10 (2.71)	0.611
Stunting^d, n (%)			
Ages 7 to 10 Years	0 (0.00)	1 (0.27)	1.000
Ages 11 to 14 Years	0 (0.00)	2 (0.54)	1.000

^aBolded items are significant at $p < 0.05$. Abbreviations: BMI-for-Age, body mass index-for-age z score; Height-for-Age, height-for-age z score; n, number; SD, standard deviation; Weight-for-Age, weight-for-age z score.

^bDifferences evaluated by the Student t-test and Fisher's exact test for continuous and categorical variables as appropriate. For categorical variables with more than two categories, each category was compared individually to the category with the most entries by Fisher's exact test.

^cMaternal post-secondary education was a survey response of any type of post-secondary

education. Maternal atopy was based on survey report of maternal asthma, food allergy, nasal allergy or eczema. Maternal smoking during pregnancy, maternal smoking inside the home and maternal current smoking, which was a report of maternal smoking within the last 12 months, were all based on survey responses. Prednisone and inhaled corticosteroid use were based on a survey response of prednisone or inhaled corticosteroid use in the last 12 months.

^dWorld Health Organization criteria were used to define obesity ($B/A > 2$, which is above the 98th percentile), overweight ($B/A < 2$ and > 1 , which is between the 84th and 98th percentiles), wasting, including severe wasting, ($B/A < -2$, which is below the 2nd percentile) and stunting, including severe stunting, ($H/A < -2$, which is below the 2nd percentile).