

ONLINE SUPPLEMENTARY TABLES

Supplemental table 1. Correlation coefficients of total IgE, food-specific and aeroallergen-specific IgE between parents and index child.

	Father-Mother		Father-Index		Mother-Index		Index child-other siblings	
	ρ	p	ρ	p	ρ	p	ρ	p
Total IgE, kU/L	0.02	0.75	0.27	< 0.001	0.25	< 0.001	0.34	< 0.001
Food-specific IgE								
Sesame	0.14	0.01	0.23	< 0.001	0.23	< 0.001	0.33	< 0.001
Peanut	0.05	0.39	0.11	0.006	0.14	< 0.001	0.15	0.002
Wheat	0.17	0.005	0.21	< 0.001	0.25	< 0.001	0.31	< 0.001
Milk	0.12	0.05	0.17	< 0.001	0.12	< 0.001	0.19	< 0.001
Egg white	0.17	0.003	0.15	< 0.001	0.16	< 0.001	0.22	< 0.001
Soy	0.23	< 0.001	0.23	< 0.001	0.25	< 0.001	0.24	< 0.001
Walnut	0.01	0.89	0.08	0.08	0.17	< 0.001	0.26	< 0.001
Shrimp	0.06	0.33	0.12	0.004	0.18	< 0.001	0.25	< 0.001
Cod fish	0.16	0.007	0.15	< 0.001	0.20	< 0.001	0.17	< 0.001
Aeroallergen-specific IgE								
D pteronyssinus	0.03	0.65	0.16	< 0.001	0.10	0.003	0.27	< 0.001
D farinae	0.01	0.86	0.19	< 0.001	0.11	< 0.001	0.24	< 0.001
Cat	0.12	0.03	0.19	< 0.001	0.17	< 0.001	0.26	< 0.001
Dog	0.08	0.17	0.20	< 0.001	0.15	< 0.001	0.26	< 0.001
Cockroach	0.13	0.03	0.21	< 0.001	0.20	< 0.001	0.23	< 0.001
Alternaria	0.21	< 0.001	0.27	< 0.001	0.29	< 0.001	0.38	< 0.001

Supplement table 2a. Inter-relationship of total IgE and specific IgE among parents, index child, and other siblings in 482 families with at least one food allergic member.

Allergen	Father-Offspring ^{a,b}			Mother-Offspring ^c			Index-Other siblings ^d		
	β	se	<i>p</i>	β	se	<i>p</i>	β	se	<i>p</i>
Total IgE	0.34	0.06	< 0.001	0.24	0.04	< 0.001	0.30	0.05	< 0.001
Food-specific IgE									
Sesame	0.34	0.08	< 0.001	0.15	0.08	0.05	0.30	0.06	< 0.001
Peanut	0.20	0.08	0.009	0.19	0.06	0.002	0.10	0.06	0.06
Wheat	0.38	0.07	< 0.001	0.32	0.06	< 0.001	0.24	0.05	< 0.001
Milk	0.36	0.08	< 0.001	0.11	0.08	0.16	0.11	0.06	0.06
Egg white	0.34	0.09	< 0.001	0.28	0.08	< 0.001	0.15	0.05	0.005
Soy	0.35	0.07	< 0.001	0.34	0.06	< 0.001	0.19	0.06	< 0.001
Walnut	0.20	0.07	0.006	0.27	0.07	< 0.001	0.33	0.06	< 0.001
Shrimp	0.14	0.05	0.005	0.23	0.04	< 0.001	0.26	0.06	< 0.001
Cod fish	0.15	0.07	0.04	0.48	0.10	< 0.001	0.17	0.08	0.04
Aeroallergen-specific IgE									
<i>D pteronyssinus</i>	0.18	0.04	< 0.001	0.09	0.03	0.008	0.23	0.05	< 0.001
<i>D farinae</i>	0.19	0.04	< 0.001	0.10	0.03	0.003	0.20	0.05	< 0.001
Cat	0.25	0.05	< 0.001	0.15	0.04	< 0.001	0.27	0.05	< 0.001
Dog	0.32	0.06	< 0.001	0.18	0.04	< 0.001	0.22	0.05	< 0.001
Cockroach	0.27	0.05	< 0.001	0.23	0.04	< 0.001	0.24	0.06	< 0.001
Alternaria	0.17	0.05	< 0.001	0.20	0.04	< 0.001	0.37	0.06	< 0.001

Supplement table 2b. Inter-relationship of total IgE and specific IgE among parents, index child, and other siblings in 99 families without a food allergic member.

Allergen	Father-Offspring ^{a,b}			Mother-Offspring ^c			Index-Other siblings ^d		
	β	se	<i>p</i>	β	se	<i>p</i>	β	se	<i>p</i>
Total IgE	-0.25	0.19	0.18	0.15	0.07	0.04	0.23	0.10	0.02
Food-specific IgE									
Sesame	0.45	0.20	0.02	0.38	0.13	0.004	0.74	0.18	< 0.001
Peanut	-0.36	0.16	0.02	0.10	0.11	0.38	0.29	0.13	0.02
Wheat	-0.15	0.19	0.42	0.29	0.10	0.006	0.35	0.11	0.002
Milk	-0.03	0.15	0.87	0.33	0.11	0.003	0.22	0.08	0.006
Egg white	-0.11	0.24	0.65	0.15	0.12	0.22	0.17	0.10	0.07
Soy	-0.01	0.18	0.95	0.16	0.11	0.13	0.44	0.12	< 0.001
Walnut	-0.18	0.16	0.26	0.16	0.11	0.17	0.28	0.15	0.05
Shrimp	0.16	0.14	0.24	0.13	0.08	0.08	0.18	0.10	0.06
Cod fish	-0.04	0.11	0.74	0.40	0.11	< 0.001	0.33	0.12	0.007
Aeroallergen-specific IgE									
<i>D pteronyssinus</i>	0.14	0.15	0.36	0.14	0.07	0.05	0.21	0.11	0.04
<i>D farinae</i>	0.13	0.15	0.38	0.04	0.07	0.61	0.28	0.11	0.009
Cat	0.04	0.19	0.83	0.13	0.08	0.10	0.35	0.14	0.02
Dog	-0.13	0.17	0.42	0.21	0.08	0.008	0.37	0.12	0.002
Cockroach	-0.15	0.14	0.27	0.20	0.07	0.002	0.16	0.11	0.16
Alternaria	0.24	0.31	0.44	0.39	0.11	0.001	0.30	0.11	0.008

Note:

^a Linear regression was performed with adjusting covariates: age, sex, ethnicity and birth order.^b Offspring's IgE is outcome variable as father's IgE is predictor^c Offspring's IgE is outcome variable as mother's IgE is predictor^d Other sibling's IgE is outcome variable as index child's IgE is predictor

Supplement table 3. Heritability estimates for total IgE and specific IgE, stratified by families with and without a food allergic member ^a.

	Families with at least one food-allergic member (N=482)		Families without a food-allergic member (N=99)	
	\hat{h}^2 (SE)	<i>P</i>	\hat{h}^2 (SE)	<i>P</i>
Total IgE	0.48 (0.05)	< 0.001	0.47 (0.15)	< 0.001
Food-specific IgE				
Sesame	0.22 (0.05)	< 0.001	0.43 (0.12)	< 0.001
Peanut	0.10 (0.05)	0.01	0.17 (0.12)	0.06
Wheat	0.32 (0.05)	< 0.001	0.34 (0.12)	0.001
Milk	0.11 (0.05)	< 0.001	0.32 (0.12)	0.003
Egg white	0.17 (0.05)	< 0.001	0.27 (0.14)	0.02
Soy	0.30 (0.05)	< 0.001	0.36 (0.12)	< 0.001
Walnut	0.24 (0.05)	< 0.001	0.21 (0.13)	0.04
Shrimp	0.30 (0.05)	< 0.001	0.28 (0.12)	0.007
Cod fish	0.17 (0.05)	< 0.001	0.51 (0.13)	< 0.001
Aeroallergen				
<i>D pteronyssinus</i>	0.21 (0.05)	< 0.001	0.33 (0.14)	0.005
<i>D farinae</i>	0.23 (0.05)	< 0.001	0.20 (0.13)	0.05
Cat	0.32 (0.05)	< 0.001	0.21 (0.12)	0.03
Dog	0.29 (0.05)	< 0.001	0.33 (0.13)	0.003
Cockroach	0.36 (0.05)	< 0.001	0.25 (0.12)	0.02
Alternaria	0.36 (0.05)	< 0.001	0.36 (0.11)	< 0.001

Note:

^a Variance component analysis was performed with adjusting covariates: age, sex and ethnicity.