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Specific IgE and IgG measured by the MeDALL allergen-chip depend on allergen and route of exposure - the EGEA study

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TABLE E1. Comparison of included and non-included subjects

	Subjects without asthma			Subjects with asthma		
	Non- Included	Included	P value	Non- Included	Included	P value
n	697	170		507	170	
Age, m (sd)	46.3 (16.0)	46.8 (16.7)	0.68	38.8 (16.8)	40.0 (16.4)	0.42
Sex, %males	46.6	47.7	0.81	49.1	41.2	0.07
Center of recruitment			0.51			0.02
Paris, %	26.7	27.7		35.1	28.8	
Lyon, %	17.9	22.9		13.0	21.2	
Marseille, %	17.8	14.1		16.4	10.0	
Montpellier, %	7.0	5.9		8.1	7.1	
Grenoble, %	30.6	29.4		27.4	32.9	
Cat ownership ¹ , %	53.2	48.2	0.24	49.1	52.9	0.39
Allergic rhinitis ever, %	30.2	28.4	0.65	70.1	76.7	0.10
Allergic sensitization (\geq 1SPT among 12 allergens), %	38.9	34.7	0.33	76.3	81.2	0.20
Total IgE>100IU/ml, %	30.7	24.7	0.13	59.2	60.6	0.75

¹ current cat ownership or in childhood

TABLE E2. Agreement between SPT and allergen specific-IgE for those 7 allergen sources that showed a prevalence for positive SPT > 5% in the study population.

	number of components on the MeDALL chip, n	positive SPT, %	Allergen specific-IgE ≥ 0.3 for at least one of the allergen components, %	Cohen Kappa coefficient
Timothy Grass	8	33.5	39.4	0.76
House dust mite	15	33.5	34.7	0.83
Cat	3	21.8	23.8	0.76
Olive	3	20.6	21.2	0.79
Birch	3	10.6	13.8	0.71
<i>Alternaria</i>	2	8.8	9.4	0.65
Ragweed	1	5.9	3.8	0.71

TABLE E3. Unadjusted odds ratios for different centers of recruitment for being IgE- or IgG-positive to different airborne allergens (reference: Paris), by asthma status

Allergen	Center	In subjects without asthma (n=170)								In subjects with asthma (n=170)							
		IgE (<0.3; ≥0.3)				IgG (<0.5; ≥0.5)				IgE (<0.3; ≥0.3)				IgG (<0.5; ≥0.5)			
		OR	Lower 95% CI	Upper 95% CI	p value	OR	Lower 95% CI	Upper 95% CI	p value	OR	Lower 95% CI	Upper 95% CI	p value	OR	Lower 95% CI	Upper 95% CI	p value
Amb a 1	Lyon	-				2.25	0.91	5.61	0.08	-				5.46	2.09	14.3	<0.01
	Marseille	-				1.46	0.5	4.26	0.49	-				3.9	1.17	13	0.03
	Montpellier	-				1.25	0.28	5.62	0.77	-				0.35	0.04	3.08	0.35
	Grenoble	-				1.17	0.47	2.88	0.74	-				1.43	0.57	3.55	0.45
Bet v 1	Lyon	-				1.57	0.66	3.75	0.31	-				1.08	0.4	2.9	0.87
	Marseille	-				1.23	0.46	3.33	0.68	-				0.79	0.23	2.73	0.71
	Montpellier	-				0.88	0.22	3.45	0.85	-				0.72	0.19	2.81	0.64
	Grenoble	-				1.66	0.73	3.77	0.23	-				1.08	0.45	2.6	0.86
Cup a 1	Lyon	0.59	0.05	6.79	0.67	2.36	0.85	6.52	0.1	0.55	0.2	1.52	0.25	0.97	0.36	2.64	0.96
	Marseille	3.21	0.5	20.7	0.22	1.96	0.62	6.23	0.25	2.55	0.82	7.89	0.1	2.27	0.45	11.5	0.32
	Montpellier	15	2.25	100	0.01	2.06	0.39	10.9	0.39	2.27	0.63	8.19	0.21	-			
	Grenoble	0.94	0.13	6.94	0.95	1.43	0.6	3.43	0.42	0.69	0.29	1.63	0.39	0.74	0.31	1.77	0.5
Phl p 1	Lyon	0.56	0.15	2.01	0.37	2.59	0.26	26	0.42	0.88	0.37	2.09	0.78	-			
	Marseille	0.98	0.26	3.63	0.97	-				1	0.33	3.01	0.99	-			
	Montpellier	3.25	0.74	14.2	0.12	0.61	0.06	6.59	0.69	0.18	0.04	0.89	0.04	0.98	0.1	9.64	0.98
	Grenoble	1.22	0.44	3.41	0.71	1.6	0.26	10	0.61	1.02	0.47	2.2	0.96	1.16	0.27	4.89	0.84
Der p 1	Lyon	0.45	0.08	2.48	0.36	7.79	0.93	65.4	0.06	0.32	0.12	0.85	0.02	-			
	Marseille	-				-				0.35	0.1	1.22	0.1	-			
	Montpellier	0.93	0.1	8.99	0.95	1.85	0.2	16.7	0.59	0.57	0.15	2.13	0.4	0.27	0.05	1.4	0.12
	Grenoble	0.73	0.18	2.9	0.66	4.82	0.97	24	0.06	1.51	0.7	3.26	0.3	2.4	0.42	13.7	0.32
Der p 2	Lyon	0.45	0.08	2.48	0.36	2.14	0.77	5.96	0.14	0.27	0.1	0.72	0.01	2.15	0.53	8.74	0.29
	Marseille	0.76	0.14	4.26	0.76	1.14	0.39	3.33	0.81	0.4	0.12	1.31	0.13	1.37	0.26	7.21	0.71
	Montpellier	0.93	0.1	8.99	0.95	-				0.69	0.19	2.46	0.56	2.15	0.24	19	0.49
	Grenoble	1.15	0.32	4.04	0.83	1.62	0.65	4.02	0.3	1.48	0.68	3.22	0.32	1.63	0.52	5.06	0.4

TABLE E4. Adjusted odds ratios for different centers of recruitment for being IgE- or IgG-positive to different allergens (reference: Paris) among subjects without allergen immunotherapy

Allergen	Center	IgE (<0.3; ≥0.3)				IgG (<0.5; ≥0.5)			
		OR	Lower 95% CI	Upper 95% CI	p value	OR	Lower 95% CI	Upper 95% CI	p value
Amb a 1	Lyon	-				2.60	1.20	5.65	0.02
	Marseille	-				1.92	0.73	5.03	0.18
	Montpellier	-				0.79	0.19	3.25	0.74
	Grenoble	-				1.15	0.55	2.42	0.72
Bet v 1	Lyon	0.42	0.08	2.19	0.30	1.77	0.81	3.85	0.15
	Marseille	-			0.95	1.60	0.62	4.13	0.34
	Montpellier	-			0.97	0.50	0.15	1.64	0.25
	Grenoble	0.87	0.25	2.98	0.82	1.34	0.67	2.69	0.40
Cup a 1	Lyon	0.51	0.10	2.58	0.42	1.35	0.58	3.16	0.48
	Marseille	4.64	0.99	21.70	0.05	1.71	0.55	5.36	0.36
	Montpellier	13.79	2.64	72.02	0.00	5.32	0.64	44.38	0.12
	Grenoble	1.33	0.39	4.54	0.65	0.84	0.41	1.73	0.64
Phl p 1	Lyon	0.74	0.26	2.12	0.57	3.46	0.37	32.18	0.28
	Marseille	2.17	0.61	7.67	0.23	-			
	Montpellier	1.24	0.28	5.45	0.78	0.76	0.07	7.86	0.82
	Grenoble	1.17	0.48	2.85	0.72	1.17	0.31	4.33	0.82
Der p 1	Lyon	0.64	0.19	2.12	0.46	11.25	1.37	92.65	0.02
	Marseille	0.16	0.02	1.50	0.11	-			
	Montpellier	0.45	0.05	4.29	0.48	0.57	0.14	2.34	0.44
	Grenoble	1.61	0.64	4.10	0.31	3.39	1.00	11.47	0.05
Der p 2	Lyon	0.53	0.16	1.71	0.29	2.31	0.93	5.78	0.07
	Marseille	0.49	0.11	2.28	0.36	1.57	0.53	4.63	0.41
	Montpellier	0.68	0.12	4.01	0.67	5.23	0.62	44.38	0.13
	Grenoble	2.07	0.83	5.17	0.12	1.98	0.89	4.40	0.10

*Odds Ratio (reference: Paris) adjusted for age, sex, asthma status and rhinitis status
Some ORs could not be estimated because of sample size (represented by - in the table)
ORs associated with a p value ≤ 0.05 are presented in bold.

E-FIGURE Legend

FIG E1. IgE and IgG recognition frequencies and intensities in subjects not reported allergen immunotherapy for (A) ragweed (Am b a1), (B) birch (Bet v 1), (C) Cypress (cup a 1), (D) timothy grass (Phl p 1), (E) houst dust mit (Der p 1), (F) house dust mite (Der p 10) and (G) apple (Mal d 1)