Table E1: Conversion between ELISA and Universal Allergen Standards (UAS)

Conversion from ELISA to Universal Allergen Standards (UAS)

ALLERGEN	ELISA morbidity cut-points (µg/g)	ELISA (µg/g) to (ng/ml) x(1000/20)	Regression converts ELISA to UAS[1] (ng/ml)	Regression converts ELISA to UAS[1] (ng/ml)	UAS conversion from (ng/ml) to (µg/g) x(20/1000)
Canf1	10.0	500	y=0.22x-4.56	105	2.1088
Feld1	8.0	400	y=0.38x+7.56	159.6	3.1912

y = UAS / MARIA
x = ELISA

Conversion from Universal Allergen Standards (UAS) to ELISA

ALLERGEN	UAS / MARIA (µg/g)	UAS / MARIA (µg/g) to (ng/ml) x(1000/20)	Regression converts ELISA to UAS[1] (ng/ml)	Regression converts ELISA to UAS[1] (ng/ml)	ELISA conversion from (ng/ml) to (µg/g) x(20/1000)
Canf1	2.11	105.5	x = (y + 4.56)/0.22	500	10.0
Feld1	3.19	159.5	x = (y - 7.56)/0.38	400	8.0

y = UAS / MARIA
x = ELISA

Reference :

1. Filep S, Tsay A, Vailes L, et al. A multi-allergen standard for the calibration of immunoassays: CREATE principles applied to eight purified allergens. *Allergy.* 2012;67(2):235-241.

Table E2: Exposure Distributions

Statistic	Dog (µg/g UAS)	Cat (µg/g UAS)
Minimum	0.009*	0.003*
1st Pctl	0.009*	0.003*
5th Pctl	0.009*	0.003*
10th Pctl	0.009*	0.009*
20th Pctl	0.032	0.028
30th Pctl	0.068	0.064
40th Pctl	0.178	0.125
Median	**0.451**	**0.260**
60th Pctl	1.211	0.646
70th Pctl	4.74	3.16
80th Pctl	16.3	22.4
90th Pctl	48.0	110.1
95th Pctl	96.5	234.9
99th Pctl	268.1	751.1
Maximum	1216.4	2944.7

*<LLOD
Dog Exposure > 2.11 (µg/g UAS) = 36.0 percentile
Cat Exposure > 3.19 (µg/g UAS) = 29.8 percentile

Table E3: Exposure and Sensitivity Associations with Asthma and Asthma Attacks (n=5,238)

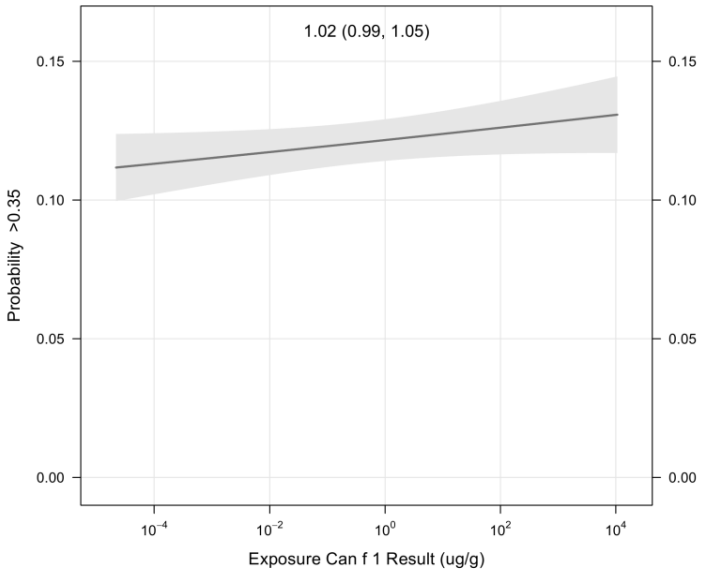
			Not Sensitive				Sensitive				
Exposure	Outcome*	Model	Not Exposed (% SE)	Yes Exposed (% SE)	Exposure effect (% 95% CI)	p	No Exposed (% SE)	Yes Exposed (% SE)	Exposure effect (% 95% CI)	p	interaction p
Dog	Current asthma	Unadjusted	6.7 (0.69)	7.4 (1.36)	0.7 (-2.5,3.9)	0.67	20.1 (4.34)	32.6 (4.77)	12.5 (3.6,21.4)	0.006	0.02
		Adjusted**	6.3 (0.78)	6.7 (1.46)	0.4 (-2.9,3.7)	0.81	18.5 (4.06)	32.7 (4.73)	14.2 (4.2,24.2)	0.005	0.007
	Asthma Attack in Past 12 months	Unadjusted	3.6 (0.42)	4.3 (0.88)	0.7 (-1.5,3.0)	0.53	13.0 (3.46)	23.3 (4.14)	10.3 (0.6,20.1)	0.04	0.07
		Adjusted	3.0 (0.50)	3.3 (0.92)	0.3 (-1.8,2.4)	0.76	10.7 (2.54)	20.2 (4.58)	9.5 (-1.4,20.4)	0.09	0.10
Cat	Current asthma	Unadjusted	7.3 (0.60)	7.2 (1.26)	-0.2 (-2.8,2.4)	0.89	20.2 (3.42)	25.5 (4.81)	5.3 (-5.9,16.5)	0.35	0.38
		Adjusted	7.1 (0.75)	6.0 (1.36)	-1.1 (-3.9,1.6)	0.41	19.7 (3.22)	23.6 (4.47)	3.9 (-7.3,15.1)	0.49	0.42
	Asthma Attack in Past 12 months	Unadjusted	4.3 (0.41)	4.1 (0.61)	-0.2 (-1.6,1.1)	0.77	12.2 (2.43)	17.5 (4.35)	5.3 (-5.2,15.9)	0.32	0.31
		Adjusted	3.8 (0.49)	2.7 (0.66)	-1.1 (-2.2,0.0)	0.04	10.3 (1.88)	13.9 (3.57)	3.6 (-5.4,12.6)	0.44	0.31

* Outcomes for those with physician diagnosed asthma and who still have asthma.
** Adjusted for Age, Gender, Race/Ethnicity, PIR (Poverty Index Ratio), Cotinine and Endotoxin

Supplemental Figure Legends

Figure E1: Association between Exposure and Sensitivity. Numbers are odds ratios and 95% Confidence Intervals

Figure E1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0.00
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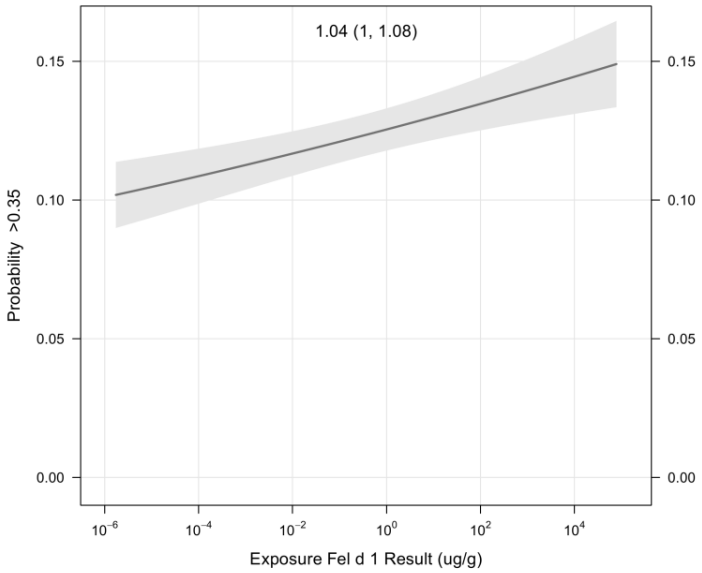
10^{-2}
10^{0}
10^{2}
10^{4}
Exposure Can f 1 Result (ug/g)


1.04 (1, 1.08)
Probability >0.35
0.15
0.10
0.05
0.00
10^{-6}
10^{-4}
10^{-2}
10^{0}
10^{2}
10^{4}
Exposure Fel d 1 Result (ug/g)