

## Supplemental Material

### Exposure to mouse allergen in US homes is associated with asthma symptoms

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Supplemental Material, Table 1. Characteristics of the NSLAH population, comparison of subjects with and without missing data<sup>a</sup>

Characteristic	Included subjects		Excluded subjects	
	N	% <sup>b</sup>	N	% <sup>b</sup>
Age				
<18	645	26.6	117	28.0
18 or older	1383	73.4	260	72.0
Gender				
Male	980	48.0	209	48.9
Female	1048	52.0	208	51.1
Race				
White	1464	78.3	324	79.7
Other	564	21.7	104	20.3
Education <sup>c</sup>				
High school level or lower	628	29.0	130	33.1
Above high school level	1400	71.0	246	66.9
Living with smoker(s)				
Yes	930	46.2	194	45.4
No	1098	53.8	222	54.6

<sup>a</sup>Subjects with missing data on the exposures and covariates were excluded from the analysis, leaving 2028 of 2456 subjects in the analysis

<sup>b</sup>Weighted for the multi-stage sampling design of the NSLAH; differences were not statistically significant,  $p > 0.05$

<sup>c</sup>Highest education level attained in the household

Supplemental Material, Table 2. The influence of socio-economic factors on the relationship between current asthma and mouse allergen (MUP) concentration in the household; odds ratios for atopic and non-atopic individuals

Logistic models (N=2028)	Current asthma OR (95%)		p-value for interaction
	<u>Non-Atopic</u> <sup>a</sup>	<u>Atopic</u> <sup>a</sup>	
Unadjusted model	0.74 (0.35, 1.59)	2.04 (1.22, 3.43)	0.06
Adjusted for			
Housing type	0.73 (0.34, 1.57)	2.01 (1.20, 3.38)	0.06
Building year	0.73 (0.34, 1.55)	1.93 (1.15, 3.23)	0.06
Income <sup>b</sup>	0.77 (0.35, 1.69)	1.84 (1.11, 3.05)	0.10
Census poverty <sup>b</sup>	0.75 (0.35, 1.59)	2.01 (1.20, 3.38)	0.06
Education	0.71 (0.33, 1.51)	1.92 (1.15, 3.22)	0.06

<sup>a</sup>Atopy assessed by reported doctor-diagnosed allergies; current asthma/no current asthma [n/N] = 41/1448 for non-atopics, 126/413 for atopics; reference group is MUP ≤ 1.6 ug/g

<sup>b</sup>Due to missing observations these models include fewer observations than the other adjusted models

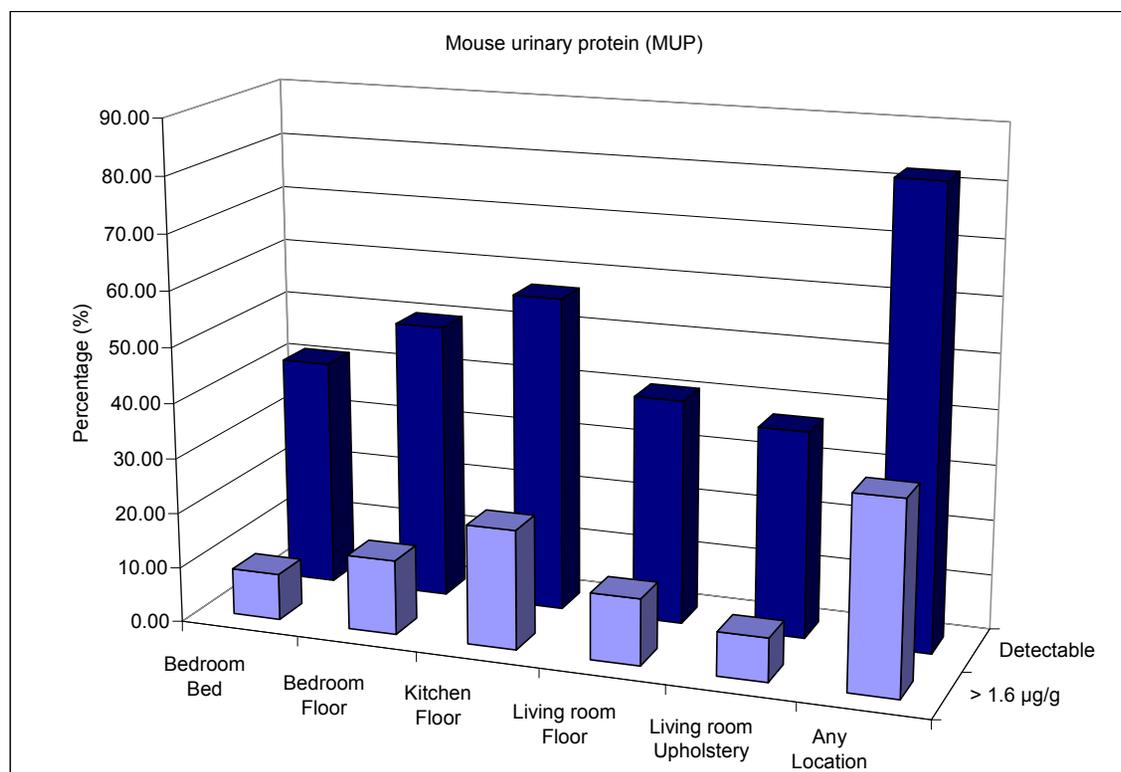
Supplemental Material, Table 3. Unadjusted and adjusted ORs and 95% CIs for the association between recent wheezing and elevated mouse allergen levels (> 1.6 µg/g) in the home among individuals younger than 40 years old, stratified by atopic status<sup>a</sup>

Household locations	Unadjusted OR (95% CI) <sup>b</sup>				Adjusted OR (95% CI) <sup>b, c</sup>			
	All subjects	Non-Atopic	Atopic	p-value <sup>b</sup>	All subjects	Non-Atopic	Atopic	p-value <sup>b</sup>
Any location (N=1317)	1.55 (1.01, 2.39)	1.48 (0.81, 2.71)	2.71 (1.28, 5.72)	0.16	1.53 (1.03, 2.27)	1.34 (0.75, 2.39)	2.83 (1.35, 5.96)	0.09
Bedroom bed (N=1062)	1.27 (0.73, 2.22)	1.57 (0.51, 4.79)	1.51 (0.60, 3.82)	0.97	1.23 (0.73, 2.06)	1.41 (0.51, 3.92)	1.40 (0.58, 3.35)	0.99
Bedroom floor (N=1190)	1.14 (0.72, 1.81)	0.67 (0.37, 1.22)	3.54 (1.33, 9.45)	<0.01	1.16 (0.70, 1.92)	0.65 (0.33, 1.29)	3.31 (1.25, 8.73)	<0.01
Kitchen floor (N=1184)	1.54 (0.85, 2.78)	1.41 (0.61, 3.25)	2.13 (0.88, 5.14)	0.37	1.50 (0.86, 2.60)	1.24 (0.56, 2.76)	2.29 (1.00, 5.22)	0.19
Living room floor (N=1098)	1.54 (0.89, 2.64)	0.95 (0.50, 1.80)	2.93 (1.26, 6.82)	0.02	1.73 (1.03, 2.90)	1.05 (0.53, 2.05)	3.79 (1.75, 8.21)	0.01
Living room upholstery (N=1048)	1.65 (0.89, 3.06)	0.73 (0.30, 1.82)	17.98 (3.68, 87.83)	< 0.01	1.43 (0.75, 2.74)	0.57 (0.22, 1.51)	17.31 (3.17, 94.44)	0.01

<sup>a</sup>Recent wheezing defined as reported wheezing in the past month or in the past year; atopy assessed by reported doctor-diagnosed allergies

<sup>b</sup>Numbers of individuals included in the logistic models are location-specific because subjects with missing data on the exposures were excluded from the analysis; p-value refers to interaction

<sup>c</sup>Adjusted for age, gender, race, education, smoking, and survey season



Supplemental Material, Figure 1. Estimated percentages of US households with detectable mouse allergen concentrations and levels exceeding 1.60 µg/g. The percentages are shown by sampling locations. Detailed information on exposure characteristics has been published elsewhere (Cohn et al. 2004).

## REFERENCES

Cohn RD, Arbes SJ, Jr., Yin M, Jaramillo R, Zeldin DC. 2004. National prevalence and exposure risk for mouse allergen in US households. *J Allergy Clin Immunol* 113(6):1167-1171.