

Correspondence

Reply

To the Editor:

We thank Liccardi et al¹ for raising an interesting topic for discussion—the issue of passive transport of allergens. The topic was raised because of some findings described in our study on Can f 1 levels in so-called hypoallergenic dog breeds.² Passive transport and transfer of allergens from one to another environmental compartment is indeed an underestimated source of allergen exposure that can trigger allergic symptoms, even in environments in which the primary source of the allergen is absent.³ However, we believe that passive transfer did not dramatically influence the results of our study.

We did not attempt to establish possible passive transfer of allergens in our study. However, we did ask participants whether their homes were visited by other dogs during the 28-day period of exposure measurements. The homes that were visited by other dogs, and had additional primary allergen sources for a short period in the home, had no significantly higher Can f 1 levels than did homes that were not visited by other dogs (Table I). This suggests that the main source of allergen exposure in a house is the dog living there.

Second, by analyzing material directly taken from the dog,² we have shown that so-called hypoallergenic breeds produce as much Can f 1 as the nonhypoallergenic breeds. This similar production is reflected in the results of the environmental sampling, suggesting that the environmental exposure is not dramatically influenced by an external allergen source.

How much dog allergen present in a house is a result of passive transfer? A study by Egmar et al⁴ reported in homes without dogs no differences in Can f 1 exposure between people who had dog contact and people who had not. The same study showed that homes with dogs had Can f 1 levels that were on average 300 times higher. In an ongoing study on exposure in homes (with and without pets) and schools in our group, we found that the pet allergen load in classrooms is higher than in homes without pets, but significantly lower than in homes with pets (manuscript in preparation). The classrooms studied were daily occupied by children of which up to 65% had a dog. Considering these findings, we believe that a dog, as a primary source of dog allergens, contributes much more to the environmental allergen burden found in homes than does passive transfer from public spaces to the home environment. The additional contribution of passive transfer would not have altered our results significantly.

TABLE I. Can f 1 levels (geometric mean)

	Homes visited by other dogs	Homes not visited by other dogs	P value
No.	45	105	
Can f 1 in floor dust ($\mu\text{g/g}$)	26.4	32.8	.353
Can f 1 in floor dust ($\mu\text{g/m}^2$)	10,123	10,120	1.000
Can f 1 in settled airborne dust ($\mu\text{g/m}^2$)	6.6	5.9	.594

In conclusion, we agree with Liccardi et al¹ that passive transfer of pet allergens occurs and can contribute to total exposure, but we believe that a dog living in the house is the primary source of, and major contributor to, Can f 1 exposure. For people not living with a dog in the house, passive transfer of Can f 1 allergen will be a relatively more important source of allergen exposure.

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Disclosure of potential conflict of interest: M. D. Chapman is employed by and is co-owner and shareholder in Indoor Biotechnologies, Inc. The rest of the authors declare that they have no relevant conflicts of interest.

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