

## Allergen Exposure Sensitization Thresholds

Table 25-2 Allergen Exposure Thresholds for Sensitization						
Allergen Level in Dust Sample						
Risk for Sensitization*	Mite Group 1 (µg/g)	Fel d 1 (µg/g)	Can f 1 (µg/g)	Bla g 1 (U/g)	Bla g 2 (µg/g)	
High	>10	1–8	1–8	>8	>1	
Medium	2–10	8–20	8–20	1–8	0.08–0.4	
Low	<0.3 <sup>†</sup>	<0.5	<0.5	<0.6	<<0.08	
		>20	>20?			

\*For atopic children.

<sup>†</sup>Levels found in 'allergen-free' hospital rooms or in house/apartments maintained for at least 6 months at 45% relative humidity. Pediatric Allergy: Principles and Practice, 2<sup>nd</sup> Edition. 2011: Indoor Allergens, Martin D. Chapman, Chapter 25 p. 266-273.

### FAQ:

**Q1.** What is Mite Group 1?

**A1.** The concentration results of Der p 1 and Der f 1 should be added together and then compared to the Mite Group 1 guidelines to interpret the risk of sensitization.

**Q2.** The high and medium values proposed for Fel d 1 and Can f 1 seem like they are reversed. Is this correct?

**A2.** The values are correct as printed. The results are based on two studies that observed individuals who were frequently exposed to high levels of Fel d 1 and Can f 1, developed a tolerance to these allergens which resulted in mild allergic symptoms when exposed to 8-20µg/g dust. Individuals with less frequent exposure to high levels of Fel d 1 and Can f 1, 1-8µg/g dust, may experience more severe allergic symptoms because their immune system has not developed a tolerance.

**Q3.** How do we explain this phenomenon to customers?

**A3.** The bottom line: If the allergen concentration falls in the range of 1-20µg/g dust, there is potential risk for individuals becoming sensitized. If the individual already has a known allergy to Fel d 1 and/or Can f 1 then the severity of their allergic symptoms may vary depending on whether they have developed a tolerance.

**Q4.** Why are Bla g 1 results reported in Units per gram (U/g) dust while all other allergens are in microgram per gram dust (µg/g)?

**A4.** There are no national or international reference standards for cockroach allergens. These references are necessary to calculate an accurate conversion from U/g to µg/g. Some investigators are of the opinion that any detectable level of cockroach allergens is clinically significant because the presence of allergen identifies a building in which persons who are cockroach allergic are at risk to develop symptoms due to exposure.

**Q5.** What are the guidelines for mouse and rat allergens, Mus m 1 and Rat n 1?

**A5.** There are no published studies which have defined allergen exposure threshold levels for sensitization. Any positive result identifies a potential rodent presence in the building and should be remediated.