

Jill is about to have  
an asthma exacerbation,  
and she won't know why

Timothy grass

Dog dander

House dust mites

ASTHMA

 **ImmunoCAP**<sup>®</sup>  
*Is it allergy?*

Underlying allergies affect **asthma**

**Discover the connection**

**ImmunoCAP**<sup>®</sup> **blood** testing helps you identify allergy triggers and develop an exposure reduction plan for improved patient well-being

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# Discover the connection between asthma and allergy

DISCOVER THE CONNECTION

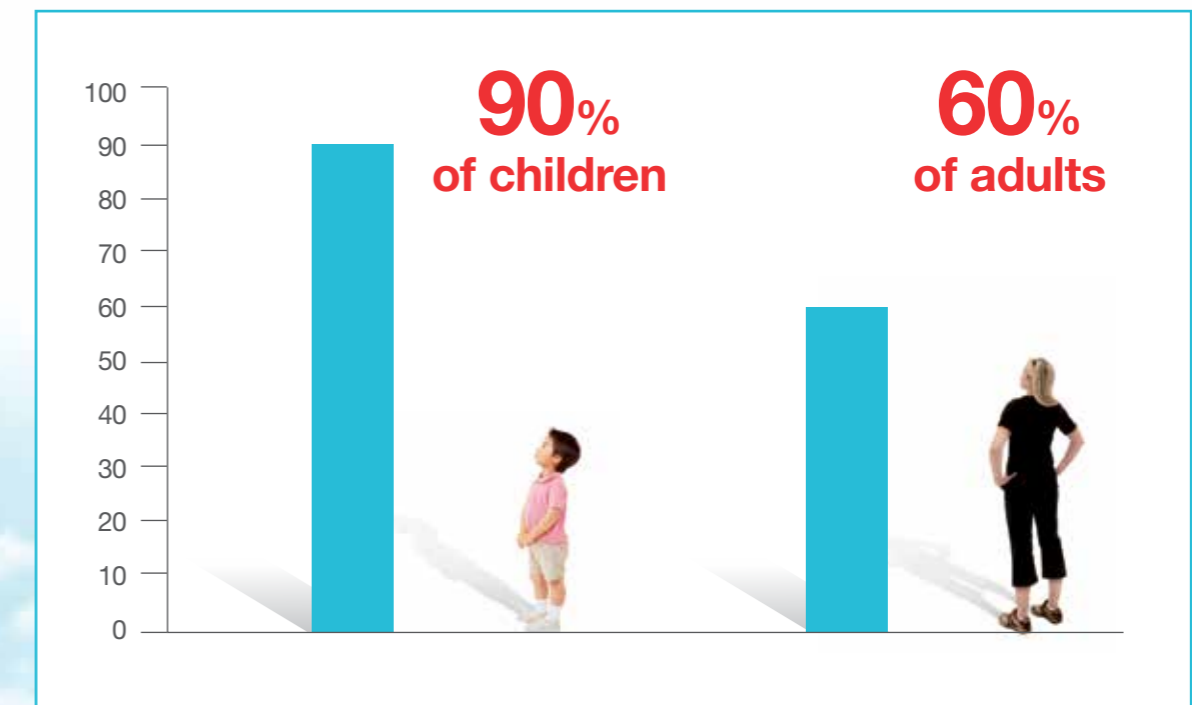
## It may be time to go beyond asthma controller therapy

- Up to **2/3 of patients** report that their asthma symptoms are uncontrolled<sup>1,2</sup>

## Common triggers that may induce or worsen asthma:



## The majority of asthma patients suffer from allergies<sup>3-5</sup>

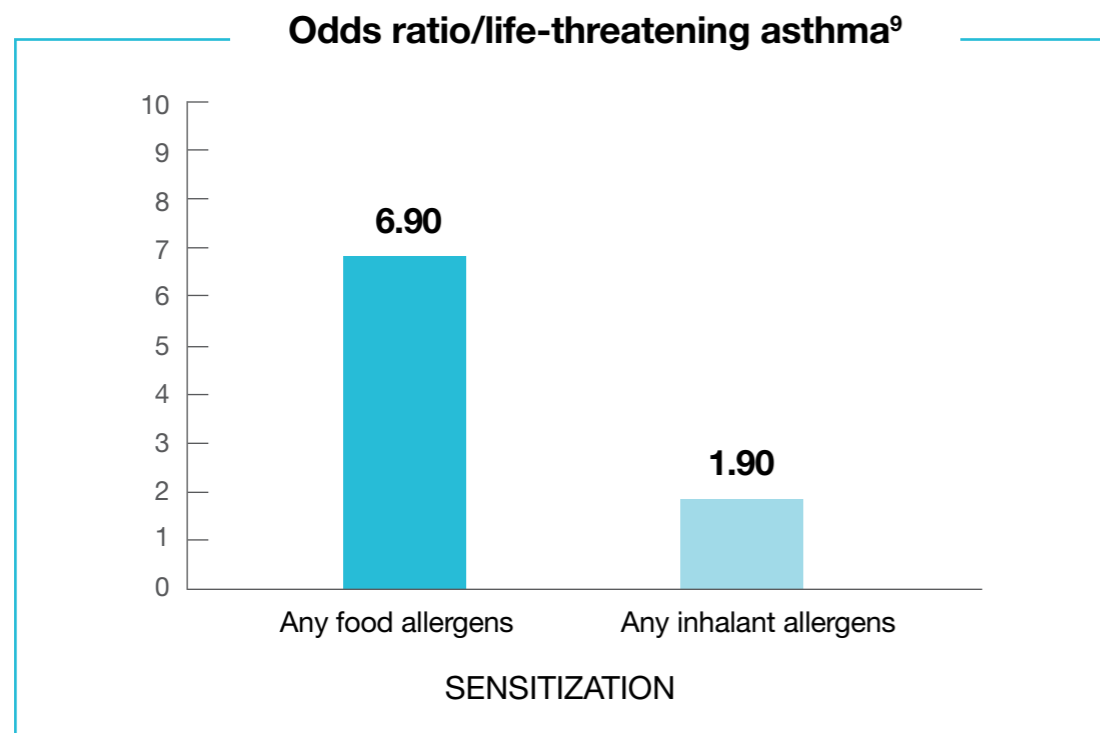


- Case history alone may overlook relevant inhalant and food allergies

# Recognize the risk of allergy in your asthma patients

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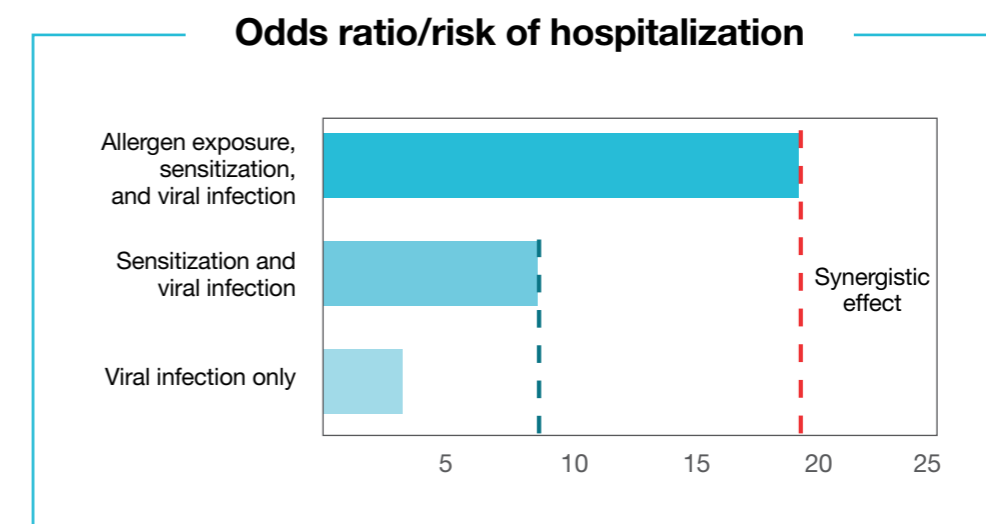
## Allergy increases the risk for severe asthma<sup>6-9</sup>



Independent risk factors for life-threatening asthma, from a case-controlled analysis of children ventilated for asthma exacerbation.<sup>9</sup>

- Children with asthma and concomitant food allergy have a **7x higher risk** for life-threatening asthma exacerbations<sup>9,10</sup>

## Combination of allergy and viral infections increases the risk for severe asthma<sup>11</sup>



Multivariate analysis of odds ratios (95% CI) for risk factors of hospital admission for acute asthma exacerbation in children ages 3 to 17 years.<sup>11</sup>

- A nearly **20-fold** increased risk for hospitalization in patients with asthma, allergen exposure, and viral infection compared to patients with asthma alone<sup>11</sup>



Identifying triggers early is the key to improved patient management and overall well-being

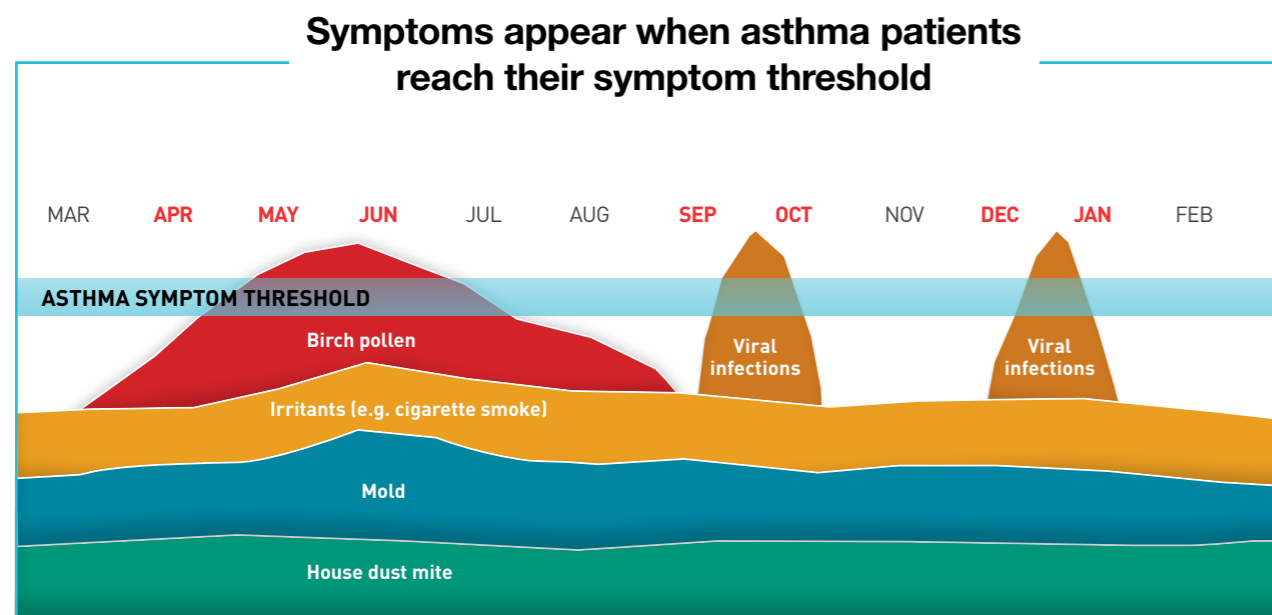


# Uncover the benefits of allergen exposure reduction

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## Identify the allergy triggers that can lead to asthma symptoms

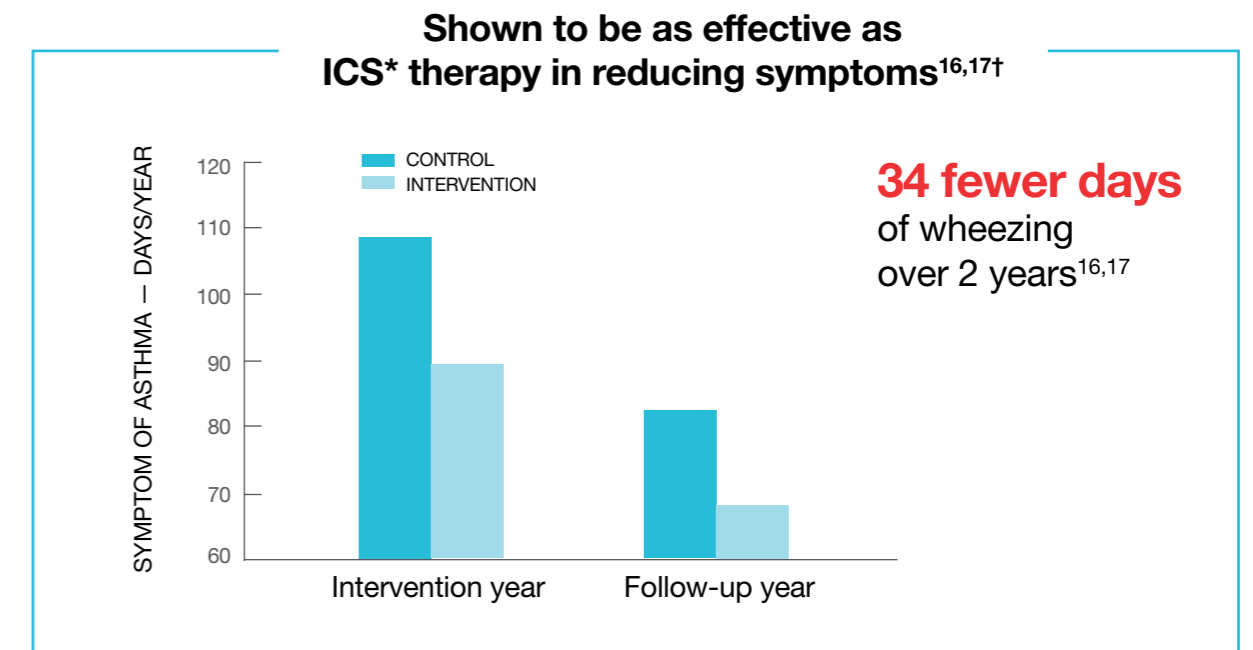
- Inhalant allergens may have additive effects on symptoms<sup>12,13</sup>



- Up to 80%** of allergic patients are sensitized to several allergen extracts, on average **3 allergens**<sup>14,15</sup>

Identifying the sensitizing allergens will help you outline an exposure reduction plan to keep patients below symptom threshold

## Reducing allergen exposure improves asthma control



- 4-5** Fewer missed school days/year<sup>16†</sup>
- 13%** Fewer emergency room/clinic visits per year<sup>16†</sup>
- > 50%** Reduction in ICS\* usage in majority of patients<sup>18‡</sup>

\* Inhaled corticosteroid therapy.

† Education and remediation decreased exposure to indoor allergens, including cockroach and dust-mite allergens, resulting in reduced asthma-associated morbidity. Effect was achieved without worsening symptoms, lung function or increased need for rescue medication.

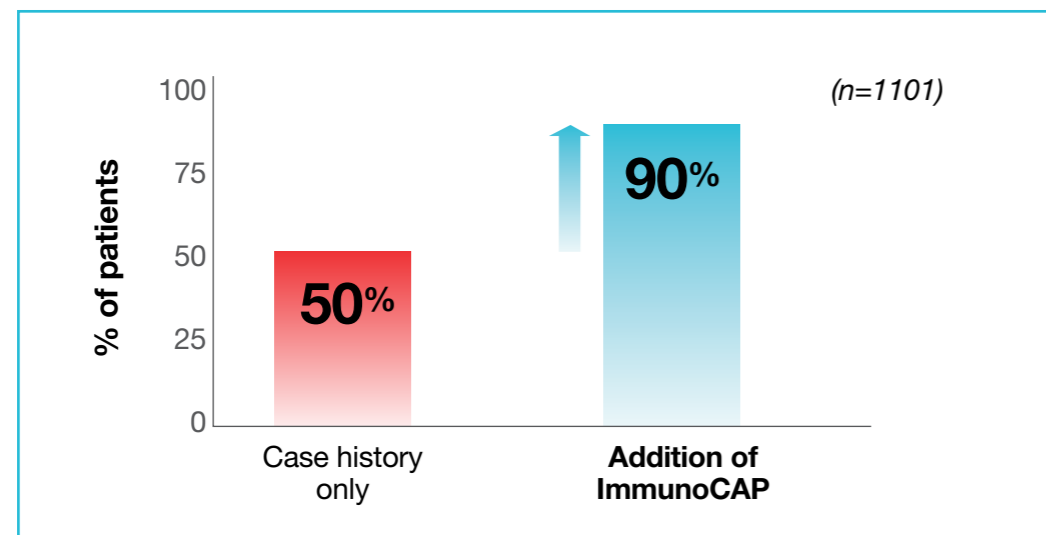
‡ Reduction was reached in 73% (active treatment group) vs. 24% (control group) at 12 months ( $p > 0.01$ ) using bedding encasements in dust mite allergic patients.

# ImmunoCAP plus case history improves diagnostic certainty

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## Case history alone is not enough to identify allergy triggers

Diagnostic certainty in ruling in or ruling out allergy has been shown to increase when ImmunoCAP Complete Allergen results are added to clinical history<sup>19,20</sup>



Adapted from: Duran-Tauleria E. Allergy 2004; 59 (suppl 78): 35-41. Niggemann B. Pediatr Allergy Immunol. 2008; 19:325-331.

Study among patients with symptoms of eczema, wheezing and/or asthma, and rhinitis in primary care.<sup>19,20</sup>

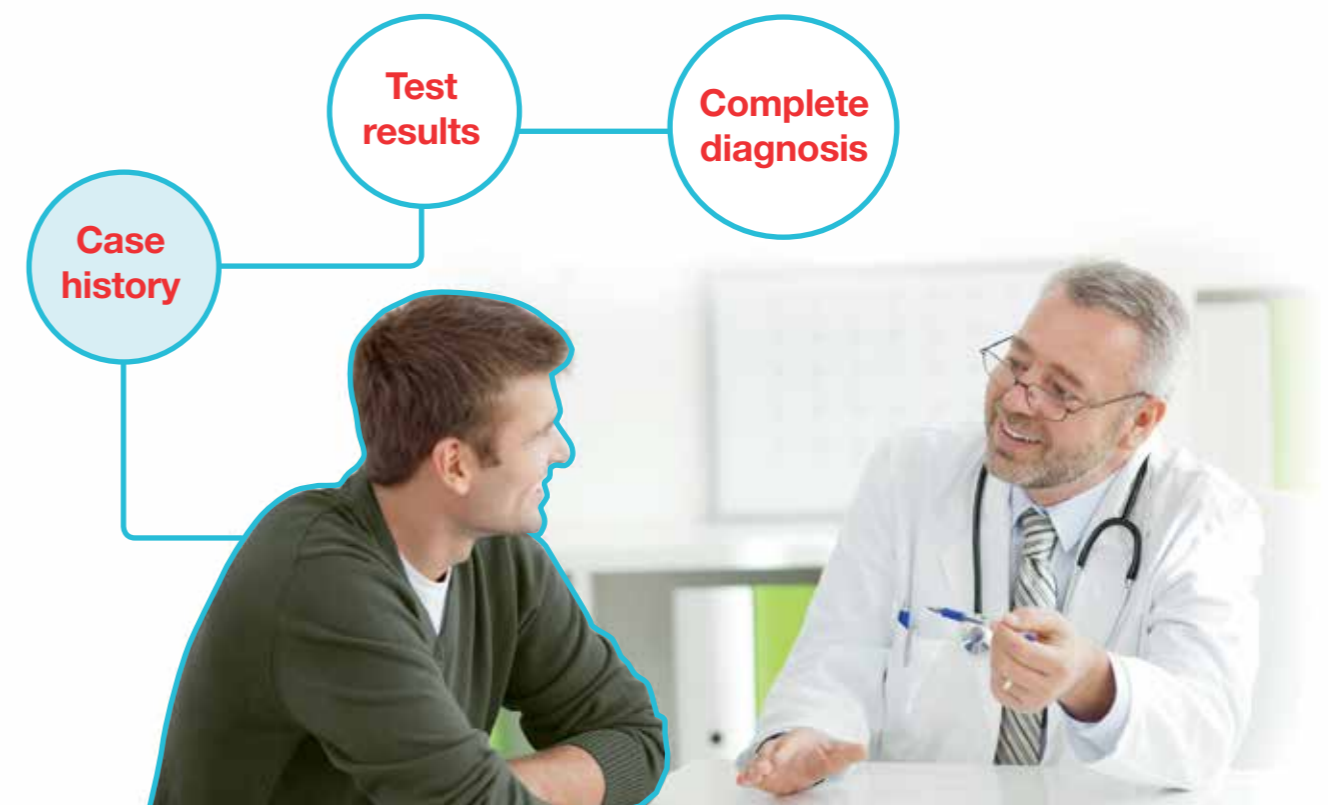
- ImmunoCAP Complete Allergens help rule in or rule out allergy and identify allergy triggers<sup>19-21</sup>

Guidelines recommend IgE testing, such as ImmunoCAP, in addition to clinical history and physical exam for patients with asthma<sup>21-23</sup>

## ImmunoCAP testing can easily be performed irrespective of<sup>24-27</sup>:

- Patient age
- Skin condition
- Medication
- Disease activity
- Pregnancy status

No precaution for severe reactions as with skin-prick test (SPT)<sup>23,24</sup>



# ImmunoCAP Complete Allergens

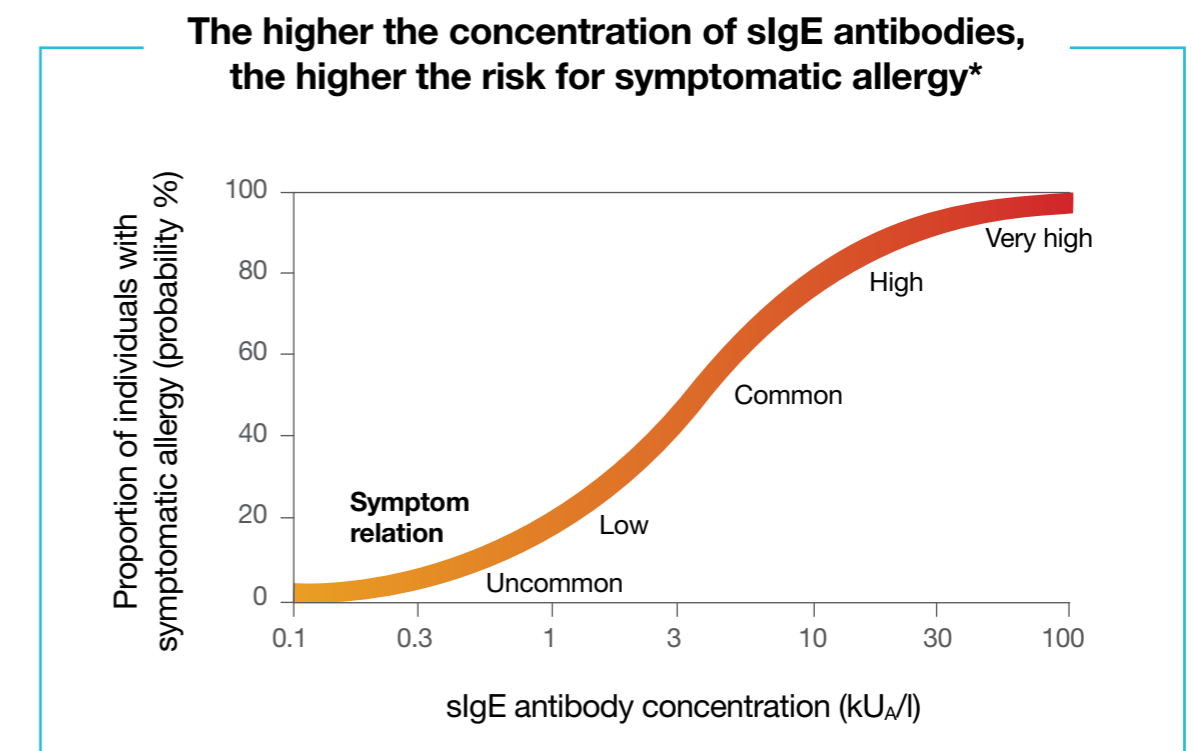
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## Common inhalant and food allergens in wheezing and/or asthma patients

Wheezing/Child	Asthma/Adult
g6 Timothy	g6 Timothy
t3 Birch	t3 Birch
t25 Ash	t25 Ash
w6 Mugwort	w1 Ragweed
e1 Cat	w6 Mugwort
e5 Dog	e1 Cat
d1 House dust mite	e5 Dog
f1 Egg white	d1 House dust mite
f2 Cows' milk	m6 <i>Alternaria</i>
f13 Peanut	i6 Cockroach

A 1-mL sample of whole blood is sufficient to test for up to 10 different allergens

## ImmunoCAP provides true quantitative results for accurate decisions<sup>12,28,29</sup>



\* Factors to consider for a final diagnosis: Age, degree of atopy, allergen load, type of sensitizing allergens, previous symptoms, other triggering factors. Any reading of  $\geq 0.10$  kU<sub>A</sub>/l indicates sensitization.

ImmunoCAP is the most extensively studied and widely used IgE blood test available

ImmunoCAP Allergen Components offer a second step for improved diagnosis<sup>30</sup>

Up to 70% of pollen allergic patients suffer from pollen-related food allergies<sup>31</sup>

ImmunoCAP Allergen Components help you distinguish between cross-reactive and specific food sensitization<sup>30</sup>

- Allows you to assess the risk of systemic reactions in patients with allergies to peanuts, tree nuts, and other plant-derived foods<sup>30, 32-34</sup>
- Helps you decrease the need for provocation testing and improve recommendations for allergen avoidance<sup>30</sup>





## Jill, 12 years old—case history:

- Eczema as an infant and toddler
- Egg allergy diagnosed as a young child
- Outgrew both conditions, developed rhinitis at age four
- Diagnosed with asthma at six
- Frequent asthma exacerbations when having a cold
- On inhaled steroids during spring and summer
- Uses bronchodilators during asthma exacerbations

## Current situation:

Jill eats a chocolate bar containing peanuts and suddenly experiences urticaria and coughing



Jill's doctor orders ImmunoCAP Complete Allergen tests to get a better understanding of her allergy triggers

## ImmunoCAP test results:

Timothy grass	Birch	Cat dander	Dog dander	House dust mite	Alternaria	Peanut
20.5 kU <sub>A</sub> /l	7.5 kU <sub>A</sub> /l	<0.1 kU <sub>A</sub> /l	7.4 kU <sub>A</sub> /l	5.2 kU <sub>A</sub> /l	<0.1 kU <sub>A</sub> /l	4.1 kU <sub>A</sub> /l

## Interpretation and management:

- Jill should avoid peanuts, as they may elicit asthma and other symptoms
- She may need to carry an adrenaline auto-injector
- She should avoid triggers, especially when she has a cold
- She should avoid visiting friends who have a dog
- Pollen exposure can be reduced by drying clothes and bed sheets indoors and minimizing time outdoors during pollen season
- House dust mite exposure can be reduced by controlling indoor climate and using hypoallergenic bedspreads and pillowcases

## Outlook:

- With these precautions, Jill's asthma should be kept in better control
- Doctor decides to order ImmunoCAP Allergen Component tests to evaluate if Jill is at risk for a systemic reaction to peanuts



You've discovered the connection

# Now consider the benefits of ImmunoCAP

## Asthma is a serious condition affected by underlying inhalant and food allergies

- Up to **7x higher risk** for life-threatening asthma than in children with asthma alone<sup>6-10</sup>
- Inhalant allergens add up and may push the patient over the symptom threshold<sup>12-15</sup>

## Reducing allergen exposure improves asthma control

- Fewer symptoms, fewer hospital visits, and improved quality of life<sup>16-18</sup>

## ImmunoCAP helps you identify allergy triggers

- The most extensively studied and widely used sIgE blood test available
- Increases certainty in diagnosis from **50% to 90%** when added to clinical history<sup>19,20</sup>
- Can easily be performed irrespective of patient's age, skin condition, medication, disease activity, and/or pregnancy status<sup>24-27</sup>

**References:** 1. Rabe KF, et al. *J Allergy Clin Immunol.* 2004;114:40-7. 2. Cazzoletti L, et al. *J Allergy Clin Immunol.* 2007;120:1360-7. 3. Arbes SJ, Jr., et al. *J Allergy Clin Immunol.* 2007;120:1139-45. 4. Allen-Ramey F, et al. *J Am Board Fam Pract.* 2005;18:434-9. 5. Host A, et al. *Allergy.* 2000;55:600-8. 6. Simpson AB, et al. *Pediatr Pulmonol.* 2007;42:489-95. 7. Schroeder A, et al. *Clin Exp Allergy.* 2009;39:261-70. 8. Malmberg LP, et al. *Clin Exp Allergy.* 2010;40:1491-7. 9. Roberts G, et al. *J Allergy Clin Immunol.* 2003;112:168-74. 10. Liu AH, et al. *J Allergy Clin Immunol.* 2010;126:798-806 e13. 11. Murray CS, et al. *Thorax.* 2006;61:376-82. 12. Simpson A, et al. *J Allergy Clin Immunol.* 2005;116:744-9. 13. Stoltz DJ, et al. *Clin Exp Allergy.* 2013;43:233-41. 14. Ciprandi G, et al. *Eur Ann Allergy Clin Immunol.* 2008;40:77-83. 15. Petersson CJ, et al. Sensitization profile in undiagnosed children with skin and respiratory allergy-like symptoms in primary care. Abstract presented at WAO, Buenos Aires, Argentina 6-10 December 2009. 16. Morgan WJ, et al. *N Engl J Med.* 2004;351:1068-80. 17. Szefer S, et al. *New Engl J Med.* 2000;343:1054-63. 18. Halken S, et al. *J Allergy Clin Immunol.* 2003;111:169-76. 19. Adapted from Duran-Tauleria E, et al. *Allergy.* 2004;59 Suppl 78:35-41. 20. Adapted from Niggemann B, et al. *Pediatr Allergy Immunol.* 2008;19:325-31. 21. Eigenmann PA, et al. *Pediatr Allergy Immunol.* 2013;24:195-209. 22. Expert Panel Report 3 (EPR-3) *J Allergy Clin Immunol.* 2007;120:S94-138. 23. Walsh J, et al. *Br J Gen Pract.* 2011;61:473-5. 24. Siles RI, et al. *Cleve Clin J Med.* 2011;78:585-92. 25. Bonnelykke K, et al. *J Allergy Clin Immunol.* 2008;121:646-51. 26. Belhocine W, et al. *Pediatr Allergy Immunol.* 2011;22:600-7. 27. Bacharier LB, et al. *Allergy.* 2008;63:5-34. 28. Soderstrom L, et al. *Allergy.* 2003;58:921-8. 29. Sampson HA. *J Allergy Clin Immunol.* 2001;107:891-6. 30. Canonica GW, et al. *World Allergy Organ J.* 2013;6:17. 31. Vieths S, et al. *Ann N Y Acad Sci.* 2002;964:47-68. 32. Fernandez-Rivas M, et al. *J Allergy Clin Immunol.* 2006;118:481-8. 33. Asarso J, et al. *Allergy.* 2010;65:1189-95. 34. Masthoff LJ, et al. *J Allergy Clin Immunol.* 2013;132:393-9.

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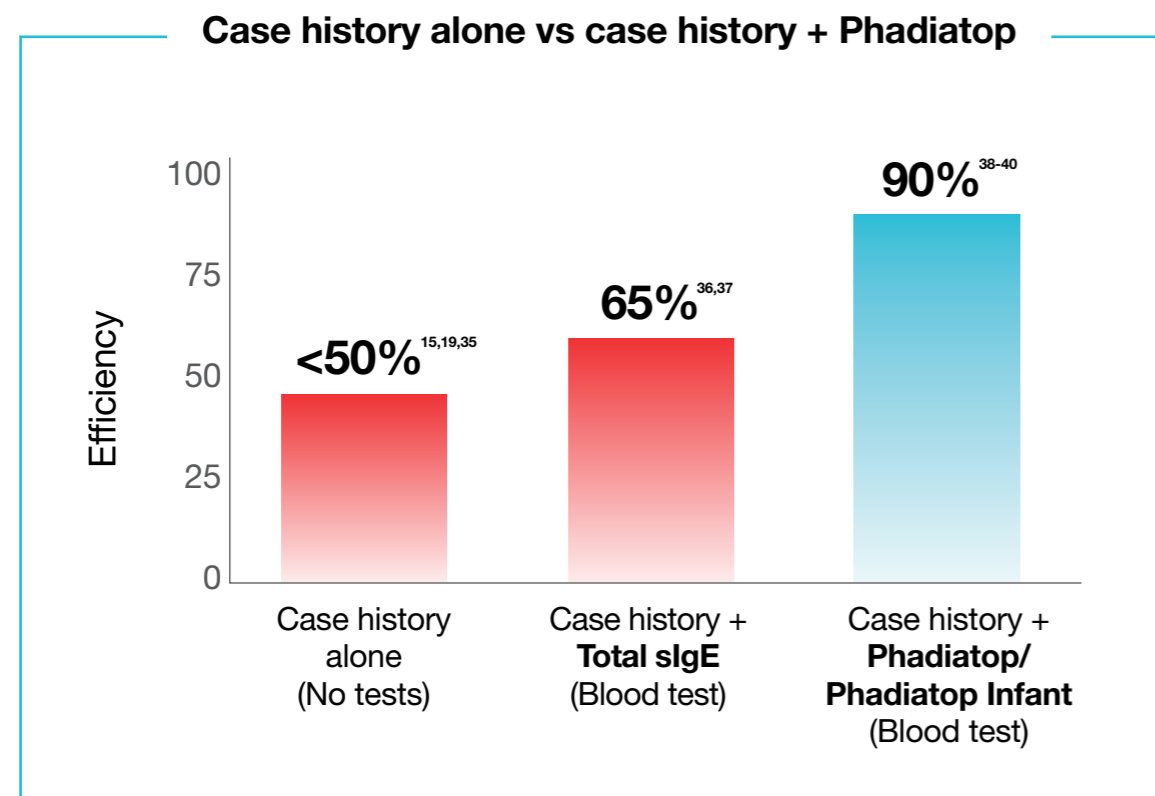
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# See if it is allergy or not

DISCOVER THE CONNECTION

## Phadiatop® correctly classifies more than 9 out of 10 patients as allergic or non-allergic

- Phadiatop indicates whether or not your patients' symptoms are due to atopy



## Rule in or rule out allergy early with Phadiatop

- Phadiatop measures sIgE antibodies to a list of common inhalant allergens, like grasses, trees, weeds, household pets, dust mites, and molds
- Phadiatop Infant® is optimized for children under 5 years of age and includes common inhalant and food allergens

## Phadiatop:

- Differentiates sIgE-mediated atopic allergy from other allergy-like symptoms<sup>41-46</sup>
- Identifies patients who need further specific IgE testing for allergen identification and continued management<sup>41-46</sup>

