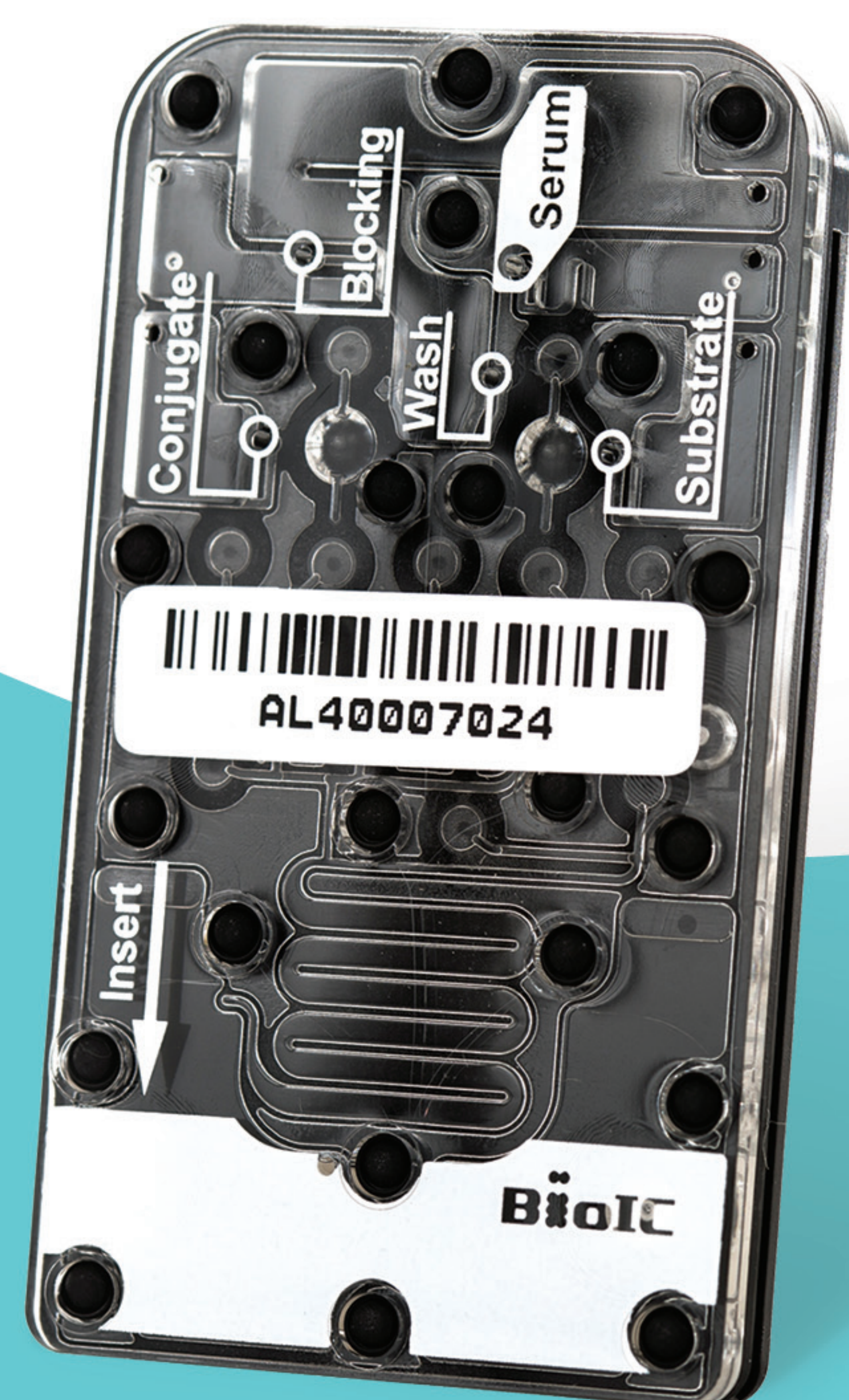




# BioIC<sup>®</sup> – South East Asia Multiplex Panel 70 SEAMP70

 **BioiC**  
BioIC Technology International Limited

BioIC Technology International Limited  
Email | [info@bioic-hk.com](mailto:info@bioic-hk.com)



**Lab on a chip**



# BiolC<sup>®</sup> – South East Asia Multiplex Panel 70




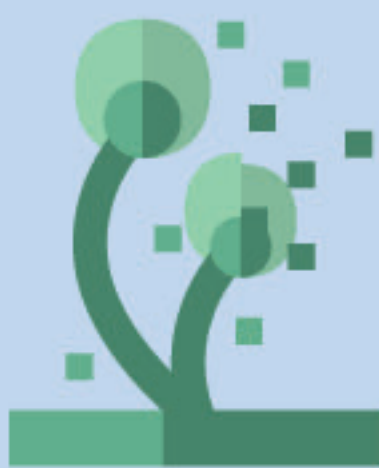




SEAMP70

## Innovative, Patented Microfluidics Chips Technology for Allergen IgE Assay: Lab on a Chip!

Includes total IgE and specific IgE for 84 Allergens (2 special allergens, 74 extracts and 8 components)

Microfluidics Technology: High sensitivity and specificity with minimum serum volume (less than 2ml whole blood)

ISO 13485, QMS (GMP), CE-IVD, China FDA, Taiwan FDA ●●●

 <b>Mites</b>	<ul style="list-style-type: none"><li>● <b>Blomia tropicalis</b></li><li>● <b>Dermatophagoides farinae</b></li><li>● <b>Dermatophagoides pteronyssinus</b></li><li>● <b>Glycyphagus domesticus</b></li><li>● <b>Tyrophagus putrescentiae</b></li></ul>	 <b>Insects</b>	<ul style="list-style-type: none"><li>● <b>Cockroach, Mixed</b> German Cockroach American Cockroach Oriental Cockroach</li><li>● <b>Honey Bee, Venom</b></li></ul>
 <b>Epidermals</b>	<ul style="list-style-type: none"><li>● <b>Cat dander</b></li><li>● <b>Chicken feathers</b></li><li>● <b>Dog dander</b></li><li>● <b>Duck feathers</b></li></ul>	 <b>Yeast &amp; Moulds</b>	<ul style="list-style-type: none"><li>● <b>Mould. Mixed</b> Penicillium notatum Cladosporium herbarum Aspergillus fumigatus Candida albicans Alternaria alternata</li><li>● <b>Yeast</b></li></ul>
 <b>Pollens</b>	<ul style="list-style-type: none"><li>● <b>Grass and Weed, Mixed</b> Bermuda Timothy Ragweed, Short Mugwort, Common Goldenrod</li><li>● <b>Palm, Queen</b></li><li>● <b>Tree, Mixed</b> Birch Pine Acacia</li></ul>	 <b>Special</b>	<ul style="list-style-type: none"><li>★ <b>Staphylococcal Enterotoxin A</b></li><li>★ <b>Staphylococcal Enterotoxin B</b></li></ul>
 <b>Latex</b>	<ul style="list-style-type: none"><li>● <b>Latex</b></li></ul>	 <b>Milk</b>	<ul style="list-style-type: none"><li>● <b>Cheese, cheddar</b></li><li>● <b>Milk, Bovine</b></li><li>+ <b>Milk, Alpha-lactalbumin, Bos d 4</b></li><li>+ <b>Milk, Beta-lactoglobulin, Bos d 5</b></li><li>+ <b>Milk, Casein, Bos d 8</b></li></ul>





Chicken Egg

- Egg White
- Egg Yolk
- + Egg Ovomucoid, Gal d 1
- + Egg Ovalbumin, Gal d 2



Meat

- Beef
- Chicken Meat
- Duck meat
- Lamb
- Pork



Seafood

- Shrimp
- Crab
- Lobster
- Shellfish, Mixed
  - Blue Mussel
  - Oyster
- Codfish
- Salmon
- Tuna Fish




Seeds and Nuts

- Almond
- Cashew nut
- Cacao Bean
- Hazelnut
- Sesame seed




Cereals

- Barley
- Corn
- Rice
- Wheat, Whole
- + Wheat, Omega 5 -Gliadin (Tri a 19)
- Gluten




Legume

- Soybean
- Peanut
- + Peanut, Ara h 2 (2S albumin)
- + Peanut, Ara h 6 (2S albumin)



Fruits

- Apple
- Banana
- Blackberry
- Kiwi Fruit
- Mango
- Peach
- Raspberry
- Citrus, Mixed
  - Orange
  - Lemon
  - Grapefruit



Vegetables

- Carrot
- Celery
- Cucumber
- Garlic
- Potato
- Tomato

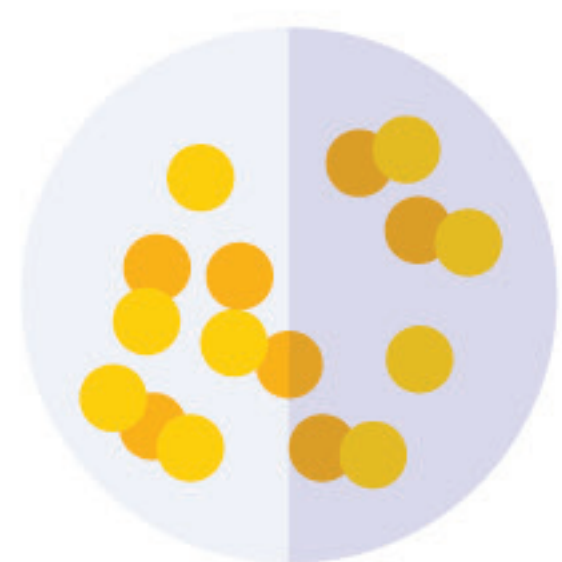


- whole extract
- + component
- ★ special allergen





# Unique tests for Eczema sufferers missing from most allergy panels!



**Staphylococcal enterotoxins A and B (SEA and SEB)** are potent toxins secreted by *Staphylococcus aureus*, a bacterium frequently found on the skin of individuals with Atopic Dermatitis (AD). Emerging evidence suggests that these enterotoxins can function as superantigens or specific allergens, provoking an exaggerated immune response. This reaction includes the production of IgE antibodies directed against the enterotoxins, which may contribute to the worsening of skin inflammation in certain AD patients.

## Diagnostic Value of specific IgE testing to SEA and SEB:

### Uncovers Hidden Sensitizations:

SEA and SEB function as superantigens, provoking intense immune activation. The presence of IgE antibodies against these toxins indicates a unique form of sensitization that may be missed by conventional allergy testing.

### Differentiates Allergy Subtypes:

SE-IgE testing aids in distinguishing atopic from non-atopic individuals. Research shows that SE-IgE positivity is significantly more prevalent among patients who are also sensitized to common aeroallergens, suggesting a distinct immunological profile.

### Associates with Disease Severity:

Elevated SE-IgE levels are linked to increased risk and severity of allergic conditions such as asthma, allergic rhinitis, and eczema, particularly in patients with high eosinophil counts and elevated fractional exhaled nitric oxide (FeNO), markers of type 2 inflammation.

### Forecasts Exacerbation Risk:

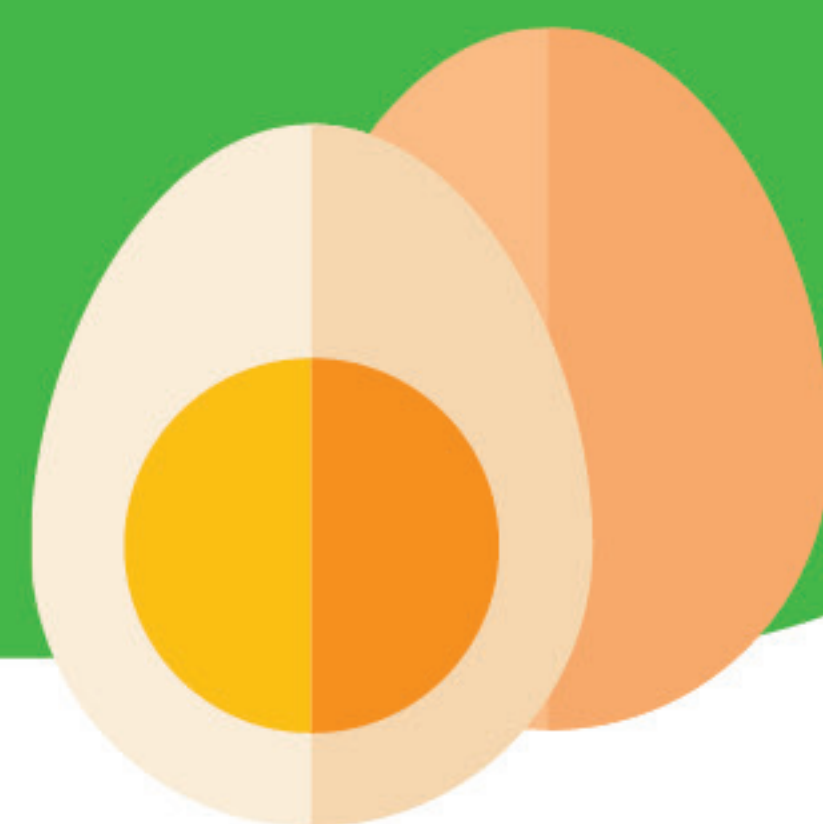
In chronic respiratory diseases like asthma and COPD, sensitization to staphylococcal enterotoxins is associated with more frequent exacerbations and poorer disease control, highlighting its potential role as a prognostic biomarker.



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Arch Dermatol. 1996;132:27-33  
Eur J Dermatol. 1996;6:552-4  
Eur Respir J. 2020; 56: Suppl. 64, 2071  
J Allergy Clin Immunol. 1999;103:119-24.  
J Allergy Clin Immunol 2000;105:820-6.  
J Allergy Clin Immunol Pract 2023;11:564-71  
J Clin Med. 2024, 13(19), 5836  
J Clin Invest. 1993;92:1374-80.  
Pediatr Int. 2004;46:337-41.  
Postepy Dermatol Alergol. 2019 Aug 30;36(4):485-491  
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# Eggs aren't always Off the Table: Rethinking IgE Sensitization



## Egg White – whole extract

- **Includes Key Egg Allergens**

Combines the most prevalent major allergens commonly recognized by individuals with egg allergy, enhancing diagnostic relevance.

- **Supports Early Diagnosis:** Serves as a valuable tool in the initial assessment of suspected egg allergy, guiding further clinical evaluation.

- **Correlates with Severity:** Levels of egg white-specific IgE may reflect the severity of allergic reactions, offering insight into the potential risk of clinical symptoms.

A systematic review on the diagnosis of egg allergy in children established specific IgE cutoff values that correlate with a high likelihood of clinical allergy to raw egg. In children under 2 years of age, raw egg allergy is considered very likely when specific IgE levels are  $\geq 1.7$  kUA/L. For children aged 2 years and older, the threshold increases, with levels  $\geq 7.3$  kUA/L indicating a strong probability of allergy.

## Ovomucoid (Gal d 1) – Components of Egg White

- **Highly Allergenic and Heat-Stable**

This allergen retains its potency even after cooking, making it a persistent trigger across various food preparations.

- **Broad Reactivity Risk**

Individuals sensitized to this component may react to all forms of egg, including baked and processed products.

- **Indicator of Persistent Allergy**

Elevated levels of specific IgE may suggest a sustained or long-term egg allergy, potentially requiring ongoing dietary avoidance and monitoring.

## Ovalbumin (Gal d 2) – Components of Egg White

- **Heat-Labile Allergen**

Easily denatured by high temperatures, reducing its allergenic potential in extensively heated foods.

- **Primary Egg White Protein**

Gal d 2 is the most abundant protein in egg white, making it a key target in egg allergy diagnostics.

- **Associated with Raw Egg Reactivity**

Sensitization to Gal d 2 is linked to allergic reactions from raw or lightly cooked egg products.

- **Potential Tolerance to Baked Goods**

Many patients sensitized to Gal d 2 may tolerate extensively baked egg-containing foods such as cakes and muffins.

- **Presence in Certain Vaccines**

Gal d 2 may be found in trace amounts in some vaccines, including influenza and yellow fever, warranting caution in egg-allergic individuals.

## Egg Yolk – whole extract

- **Lower Allergenicity**

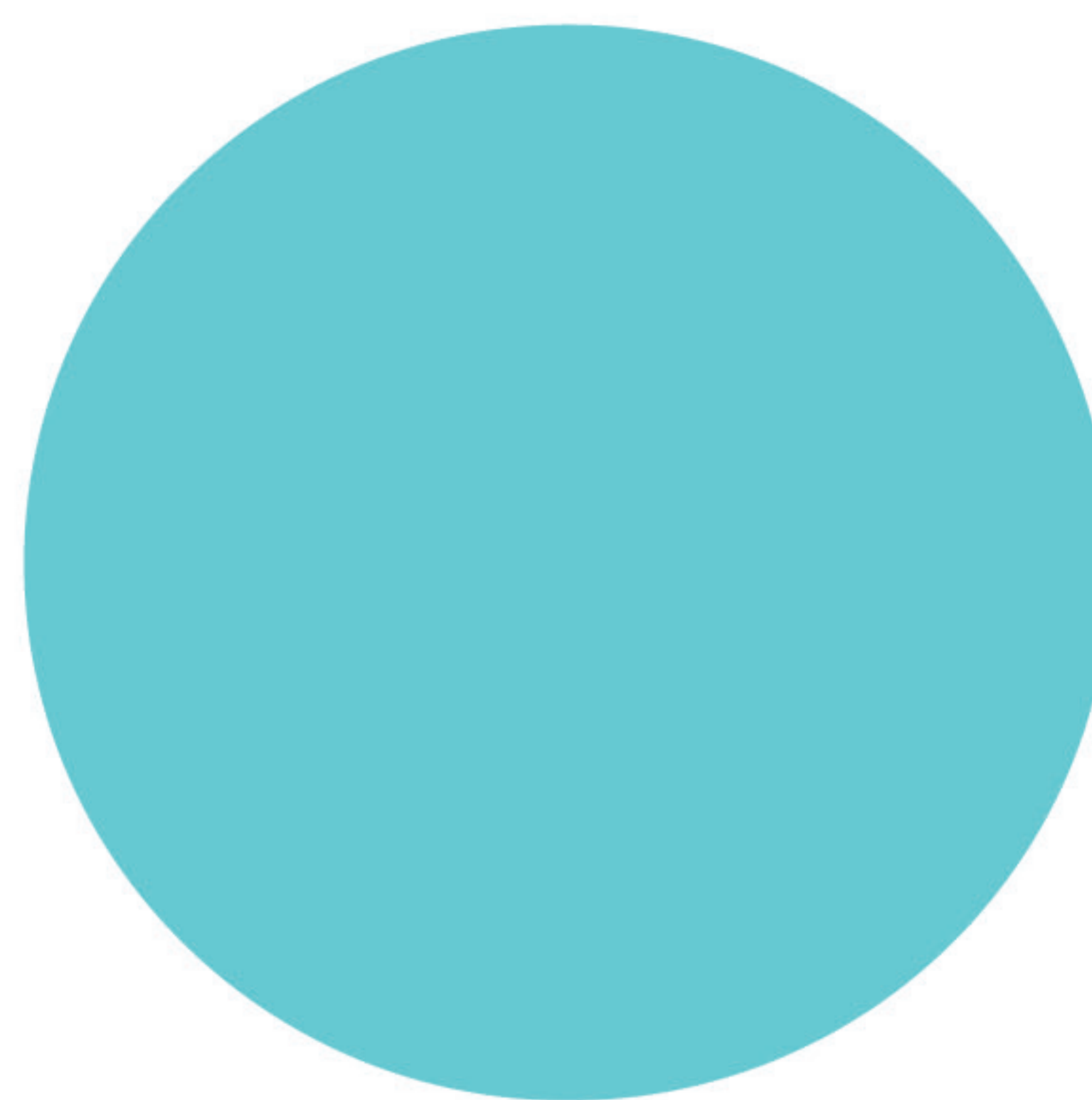
Egg yolk proteins are generally less allergenic than those found in egg white, making reactions to yolk less common.

- **Bird-Egg Syndrome Connection**

Bird-egg syndrome is a respiratory condition, often presenting as asthma and/or allergic rhinitis that typically begins with primary sensitization to airborne bird allergens such as feathers, droppings, dander, or bird serum. This is frequently followed by secondary or cross-sensitization to egg yolk proteins after ingestion, due to shared antigenic structures.



# Sensitized to Milk? You may still Celebrate with Birthday Cake!



## **Milk** – Whole extract

Combines the most common major allergens recognized by milk allergic patients.

Casein (Bos d 8) is the most common allergen, followed by whey proteins like  $\beta$ -lactoglobulin (Bos d 5) and  $\alpha$ -lactalbumin (Bos d 4).

## **Alpha-lactalbumin, Bos d 4**

– Component of Milk

## **Beta-lactoglobulin, Bos d 5**

– Component of Milk

- **Heat-Labile Allergen**

This milk protein is sensitive to heat, often losing its allergenic properties during baking, which allows many patients to tolerate baked milk products.

- **Typically Linked to Milder Symptoms**

Sensitization is generally associated with less severe allergic reactions compared to other milk proteins.

- **Potential for Natural Resolution**

Many children with this form of milk allergy may eventually outgrow it, especially if they can tolerate baked milk early on.

## **Casein, Bos d 8** – Component of Milk

- **Highly Allergenic and Heat-Stable**

This milk protein retains its allergenic properties even after extensive heating, making it a potent trigger in both raw and baked dairy products.

- **Linked to Persistent Allergy**

Sensitization is strongly associated with long-lasting milk allergy and adverse reactions to milk, often indicating a more severe and enduring allergic profile

## **Cheese, cheddar** – Whole extract

Cheddar cheese allergy typically stems from a reaction to milk proteins, primarily casein and whey, which are present in all dairy products including cheddar.

- **True Allergy vs. Intolerance**

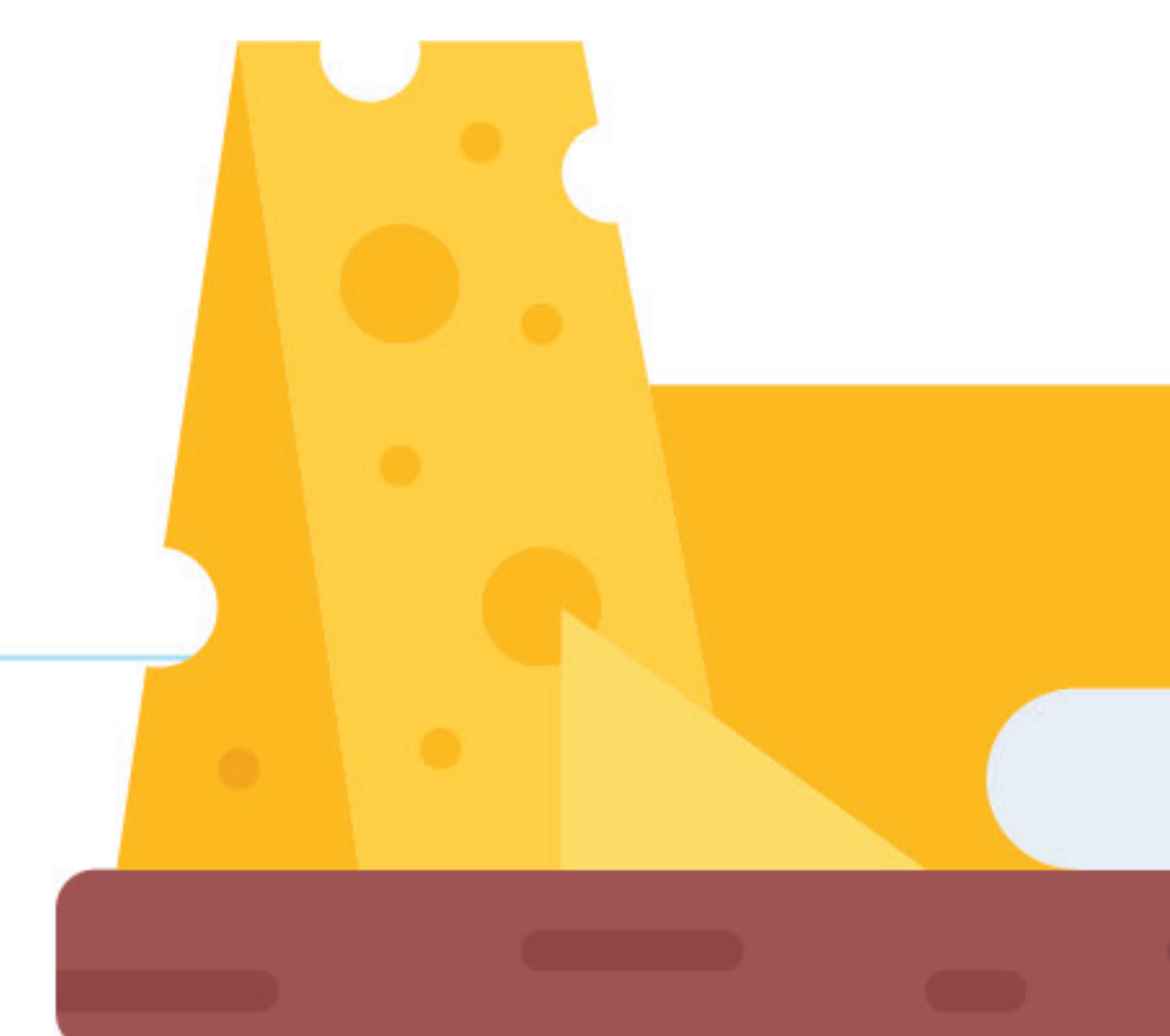
A genuine cheddar cheese allergy involves an immune system response to milk proteins, often triggering symptoms like hives, wheezing, vomiting, diarrhea, or even anaphylaxis in severe cases. This is different from lactose intolerance, which is a digestive issue and not immune-related.

- **Histamine Sensitivity**

Aged cheeses like cheddar naturally contain high levels of histamine. People with histamine intolerance may experience allergy-like symptoms such as rashes, headaches, or nasal congestion after consuming cheddar, even if they're not allergic to milk proteins.

- **Cross-Reactivity**

Individuals allergic to other dairy products are likely to react to cheddar as well, since it contains the same allergenic proteins. However, some may tolerate cheeses made from goat or sheep milk, which have different protein structures.



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CRFSFS 2018 Jan;17:137-164.  
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Molecular Allergy User's Guide 2.0. EAACI, 2022.



# When Wheat and Exercise Collide: A Hidden Threat to Life



## Wheat – Whole extracts

- **Valuable in Diagnosing Baker's Asthma**  
Wheat allergens play a key role in occupational respiratory conditions such as baker's asthma, making targeted testing clinically relevant.
- **Limitations of Whole Wheat Extract Testing**  
Due to cross-reactivity with other allergens, particularly grass pollens, IgE measurement to whole wheat extract often yields low specificity and may lead to false positives.
- **Enhanced Specificity with Component-Resolved Diagnostics**  
Testing for sensitization to individual wheat components, such as gluten proteins and Tri a 19, offers greater diagnostic accuracy for IgE-mediated wheat allergy compared to whole extract testing alone.

## Omega 5-Gliadin (Tri a 19)

– Component of wheat

- **Key Allergen in WDEIA**  
This seed storage protein plays a central role in wheat-dependent exercise-induced anaphylaxis (WDEIA), a condition triggered by wheat ingestion in combination with co-factors such as physical exertion, medication, alcohol, or stress.
- **Strong Diagnostic Value in Children**  
It demonstrates a high positive predictive value for clinically relevant wheat allergy, particularly in early childhood.
- **Common Sensitization Marker**  
Approximately 50% to 70% of individuals with wheat allergy are sensitized to this specific protein, making it a critical target in component-resolved diagnostics.

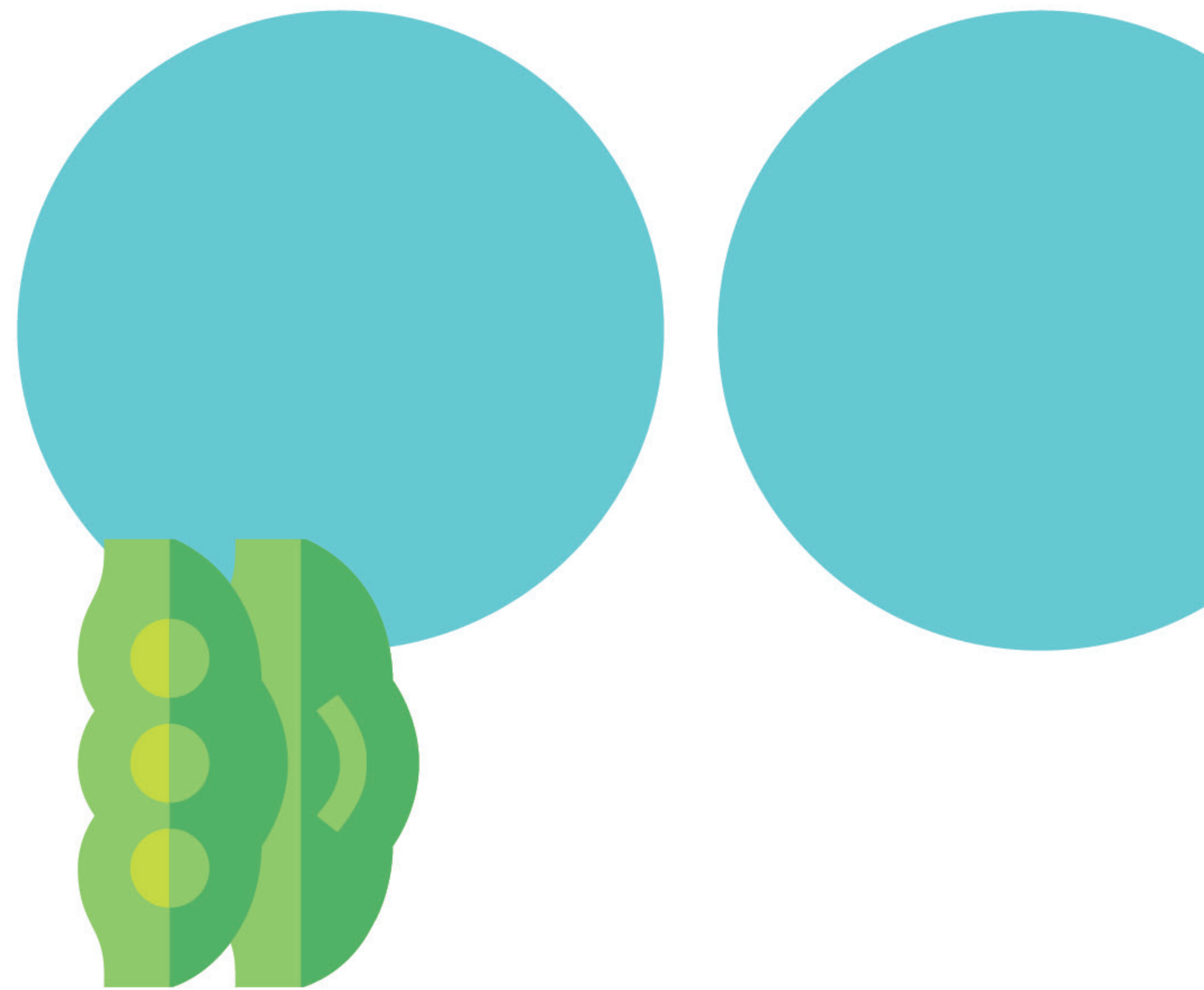
## Gluten proteins

- **Confirms Sensitization**  
The presence of gluten-specific IgE indicates that the immune system has developed a hypersensitivity to gluten proteins, particularly gliadins and glutenins. This is a hallmark of IgE-mediated allergy, not autoimmune or non-IgE reactions.
- **Supports Diagnosis of Wheat Allergy**  
Especially useful in diagnosing conditions like baker's asthma, food-induced anaphylaxis, or wheat-dependent exercise-induced anaphylaxis (WDEIA). Component-resolved diagnostics (e.g., testing for omega-5 gliadin) can further refine the diagnosis.
- **Guides Risk Assessment**  
Elevated gluten-specific IgE levels may correlate with more severe allergic reactions, including systemic symptoms like urticaria, respiratory distress, or anaphylaxis upon gluten ingestion.
- **Differentiates from Other Conditions**  
Helps distinguish IgE-mediated wheat allergy from celiac disease (which involves IgA and T-cell responses) and non-celiac gluten sensitivity (which lacks immunologic markers). This distinction is vital for appropriate dietary and medical management.
- **Informs Dietary Recommendations**  
A confirmed IgE-mediated allergy to gluten necessitates strict avoidance, including vigilance for hidden sources in processed foods, medications, and cosmetics.

Austin J Allergy. 2014;1(2): 4.  
Clin Exp Allergy 2016;46(1):10–20  
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Sci Rep 2025;15:10976.  
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Ann Allergy Asthma Immunol 2009;102(5):410–5.



# Not All Peanut Allergies are Equal—Ara h 2 & Ara h 6 tells you Why



## Peanut – Whole extracts

- **Includes Key Peanut Allergens**

Combines the most clinically relevant major peanut allergens commonly recognized by individuals with peanut allergy, enhancing diagnostic precision.

## Ara h 2 – Component of peanut

- **Ara h 2 as a Strong Predictor**

In peanut-allergic patients, approximately 90% of those sensitized to Ara h 2 experience true and often severe allergic reactions. In contrast, only about 70% of individuals with IgE to whole peanut extract are genuinely allergic, highlighting Ara h 2's superior predictive value.

- **Seed Storage Proteins with High Thermal Stability**

These proteins are resistant to heat and digestion, maintaining their allergenic potential even after cooking or processing.

- **Linked to Severe Allergic Reactions**

Sensitization to these proteins is strongly associated with serious clinical responses, including anaphylaxis.

- **Roasting Enhances Allergenicity**

Thermal processing, especially roasting, can increase the allergenic potency of these proteins by altering their structure and enhancing immune recognition.

- **Strict Avoidance Required**

Complete elimination from the diet is essential to prevent accidental exposure and reactions.

- **Emergency Medication Essential**

Patients must carry adrenaline (epinephrine) nasal spray or injector at all times due to the risk of life-threatening reactions.

## Ara h 6 – Component of peanut

- **Seed Storage Proteins with High Thermal Stability**

These proteins are resistant to heat and digestion, maintaining their allergenic potential even after cooking or processing.

- **Linked to Severe Allergic Reactions**

Sensitization to these proteins is strongly associated with serious clinical responses, including anaphylaxis.

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Clin Exp Allergy. 2015;45(4):720–730  
Allergy Clin Immunol 2017;Jan; 139(1): 358–360.  
Clin Exp Allergy 1998;28(1):7–9.  
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