

Egg allergy

ImmunoCAP™ Specific IgE tests

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SCIENTIFIC

ImmunoCAP™
Whole Allergen

ImmunoCAP™
Allergen Components

Sensitisation to multiple egg allergens may be a prognostic marker that could be useful for patient management.²

- Sensitisation to non-ovomucoid component predicts high chances of spontaneous tolerance.
- Isolated ovomucoid sensitisation doubles the risk of persistence.
- Sensitisation to multiple egg allergens quadruples the risk of persistence.



Egg white (f1)

Gal d 1 (f233)
Ovomucoid

**Risk of reaction
to raw and cooked egg¹**

- Resistant to heat denaturation
- Marker of persistent egg allergy
- Heat and digestion stable
- Highly allergenic

Gal d 2 (f232) / Gal d 3 (f323)
Ovalbumin / Conalbumin

**Risk of reaction
to raw egg¹**

- Susceptible to heat denaturation*
- Ovalbumin is the most abundant egg white protein
- Risk for clinical reaction to raw and lightly cooked egg

Gal d 4 (k208)
Lysozyme

**Risk of reaction
to raw egg¹**





















- Susceptible to heat denaturation*
- Risk for clinical reaction to raw and lightly cooked egg
- Lysozyme, a glycosidase, has been reported to be extensively utilized by food (cheese, wine, etc.) and pharmaceutical (like eye drops) industry as a preservative due to its antibacterial properties³⁻⁶

* Recommended method of heating is to bake in the oven at 180°C for 30 min.⁷

Egg yolk (f75) also contains specific allergens such as livetin/chicken serum albumin (Gal d 5).
Egg yolk may be somewhat less allergenic than egg white,⁸ but sensitisation to Gal d 5 in egg yolk is related to the bird/egg syndrome.⁹ The allergen component Gal d 5 is available on ImmunoCAP ISAC[®]12₂ test.

References: 1. Dramburg S, et al. *Pediatr Allergy Immunol* 2023;34(Suppl 28):e13854 2. Dang TD, et al. *Allergy*. 2019 Feb;74(2):318-326. 3. Everberg H, et al. *Int. Arch. Allergy Immunol.* 2011;154(1):33-41 4. Caubet J-C, et al. *Curr Opin Allergy and Clin Immunol*. 2011;11(3):210-5. 5. Benedé S, et al. *Int. Arch. Allergy Immunol.* 2014;165(2):83-90. 6. Weber P, et al. *Mol Nutr Food Res*. 2009;53(11):1469-77. 7. Ando H, et al. *J Allergy Clin Immunol.* 2008;122(3):583-58 8. Lemon-Mulé H, et al. *J Allergy and Clin Immunol* 2008;122:977-983. 9. Urisu A, et al. *J Allergy Clin Immunol* 1997;100:171-176. 10. Benhamou Senouf AH, et al. *Pediatr Allergy Immunol* 2015;26:12-17 11. Gray CL, et al. *Pediatr Allergy Immunol* 2016;27:709-15. 12. Bernhisel-Broadbent J, et al. *J Allergy Clin Immunol* 1994;93:1047-1059. 13. Jarvinen KM, et al. *Allergy* 2007; 62:758-765. 14. Benhamou AH, et al. *Allergy* 2010; 65: 283-289. 15. Pérez-Calderón R, et al. *J Investig Allergol Clin Immunol.* 2007;17(4):264-6. PMID: 17694700. 16. Santos AF, et al. *Allergy*. 2023 Dec;78(12):3057-3076.

Official product names: ImmunoCAP Allergen f1, Egg white; ImmunoCAP Allergen f233, Allergen component nGal d 1 Ovomucoid, Egg; ImmunoCAP Allergen f232, Allergen component nGal d 2 Ovalbumin, Egg; ImmunoCAP Allergen f323, Allergen component nGal d 3 Conalbumin, Egg; ImmunoCAP Allergen k208, Allergen component nGal d 4 Lysozyme, Egg; ImmunoCAP Allergen f75, Egg yolk

Egg white (f1)	Ovalbumin Gal d 2	Conalbumin Gal d 3	Lysozyme Gal d 4	Ovomucoid Gal d 1	Interpretation*	Management consideration
					<ul style="list-style-type: none"> Patient is at high risk to have reactions to both raw and cooked egg^{1,6,7,10-14} Probability of a persistent egg allergy^{1,2,6,7,10-14} 	<ul style="list-style-type: none"> Egg avoidance^{1,6,7,10-14} Consider, in context of other risk factors, prescription of an adrenaline autoinjector^{1,6,7,10-14} Reassessment of egg allergic children at regular intervals is suggested to identify possible development of spontaneous tolerance¹⁶
					<ul style="list-style-type: none"> Indicates a risk to react to raw egg and a probability to have tolerance to cooked/baked egg, especially if Gal d 1 is negative or at low levels^{1,6,7,10-14} 	<ul style="list-style-type: none"> Avoidance of raw egg^{1,6,7,10-14} Consider oral food challenge (OFC) with cooked/baked egg^{1,6,7,10-14} Reassessment of egg allergic children at regular intervals is suggested to identify possible development of spontaneous tolerance¹⁶
						
					<ul style="list-style-type: none"> Indicates a risk to react to raw egg and a probability to have tolerance to cooked/baked egg, especially if Gal d 1 is negative or at low levels^{1,6,7,10-14} Interest to identify sensitivity to lysozyme among individuals allergic to eggs in order to specify protective measures to prevent recurrent reactions.^{3-6,13} 	<ul style="list-style-type: none"> Avoidance of raw eggs^{1,6,7,10-14} Consider an OFC with cooked/baked egg^{1,6,7,10-14} Reassessment of egg allergic children at regular intervals is suggested to identify possible development of spontaneous tolerance¹⁶ Patients must be advised to carefully read the list of food and drug ingredients looking for the presence of this enzyme, taking into account that lysozyme is sometimes identified as E1105 on food labels.^{3-6,15}

* Results should always be interpreted in the context of the clinical history.

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