

Update Immunotherapy and Biologicals in Allergy

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Systemic reactions after allergen immunotherapy

Rate of reaction: 7.4% (9.7% in SCIT and 5.9% in SLIT), severe reactions rare (0.2%)

	Mildn (%)	Moderate/severen (%)	Total
Phase of occurrence			
Build up	46 (73.1%)	17 (26.9%)	63
Early maintenance (4–6 weeks)	26 (78.8%)	7 (21.2%)	33
Late maintenance (>6 weeks)	10 (90.9%)	1 (9.1%)	11
Route of administration			
SCIT	47 (71.2%)	19 (28.8%)	66
SLIT	35 (85.4%)	6 (14.6%)	41
Onset of SR			
≤30 min	39 (79.6%)	10 (20.4%)	49
30–60 min	9 (69.2%)	4 (30.8%)	13
>60 min	13 (81.2%)	3 (18.8%)	16

Reactions after 30min in ca. 1.8% of patients

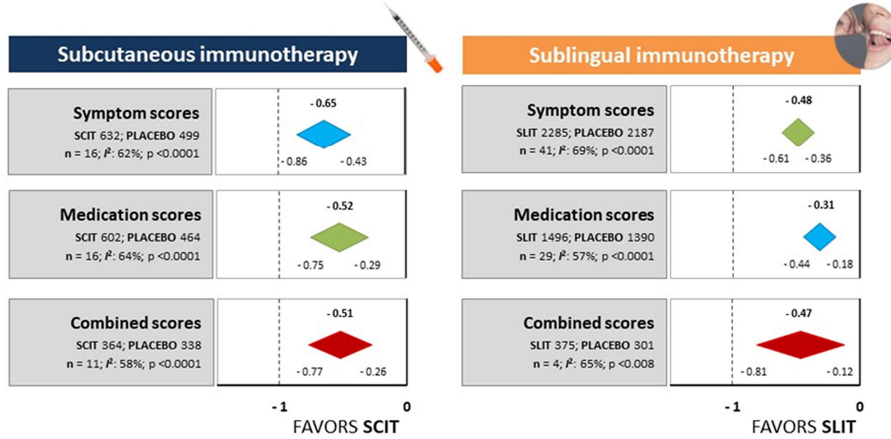
Risk factors for reactions after SIT

	P	OR	95% CI lower –higher
SCIT	<0.001	2.126	1.412–3.202
Presence of asthma	0.012	1.657	1.115–2.462
Allergic rhinitis	0.085	5.794	0.783–42.898
AIT with birch	<0.001	2.789	1.606–4.844
AIT with mugwort	0.010	3.388	1.332–8.620
AIT with cat epithelia	0.004	3.810	1.526–9.513
Natural extracts	0.035	2.447	1.066–5.615
Constant	0.000	.003	

Asllani J, et al; ADER Study Group. Allergen immunotherapy adverse events in adults with respiratory allergies-data from ADER: An EAACI task force report. Allergy. 2025 Mar;80(3):775-784. doi: 10.1111/all.16286.

Comparison SLIT and SCIT – which is better

There are no direct phase III studies comparing SCIT with SLIT drops/tablets. Indirect comparisons based on meta-analyses suggest that the overall efficacy of the treatments is similar.



Creticos PS, et al. Allergen Immunotherapy: The Evidence Supporting the Efficacy and Safety of Subcutaneous Immunotherapy and Sublingual Forms of Immunotherapy for Allergic Rhinitis/Conjunctivitis and Asthma. J Allergy Clin Immunol Pract. 2024 Jun;12(6):1415-1427. doi: 10.1016/j.jaip.2024.04.034.

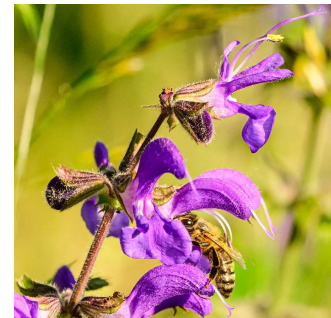
Insel Gruppe –

Possible U-Rush protocol with Alutard ALK

TABLE 1. Ultra-rush desensitizing protocol.

Time, minute	Dose, <i>USQ</i> (Alutard <i>Vespula</i> and Alutard <i>Apis mellifera</i>)	Dose, <i>mcg</i> (Anallergo thyrusine <i>Polistes dominula</i> and <i>Vespa crabro</i>)
0	100	0.1
30	1000	1
60	10,000	10
90	20,000	20
120	30,000	30
150	40,000	40

Buonomo A et al. Safety and Tolerability of a 3-h Build-Up Phase With Hymenoptera Venom Depot Extracts: Preliminary Results. Allergy. 2025 Mar 24. doi: 10.1111/all.16532

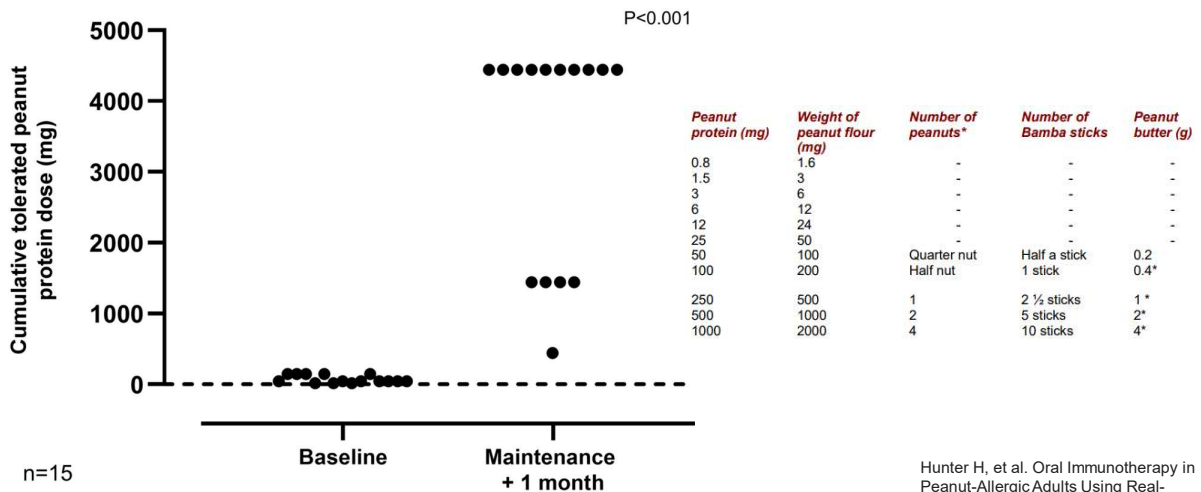


Alternative: 7-Step up dosing with Alutard ALK

Schrautner C, et al. A safe and efficient 7-week immunotherapy protocol with aluminum hydroxide adsorbed vespid venom. *Allergy*. 2020 Mar;75(3):678-680.

Week	Concentration, SQ-U/ml	Volume (ml)	Dose (µg)	Dose (SQ-U)
1	10000	0.1	1	1000
2	10000	0.5	5	5000
3	100000	0.1	10	10000
4	100000	0.2	20	20000
5	100000	0.4	40	40000
6	100000	0.6	60	60000
7	100000	0.8	80	80000
8	100000	1.0	100	100000

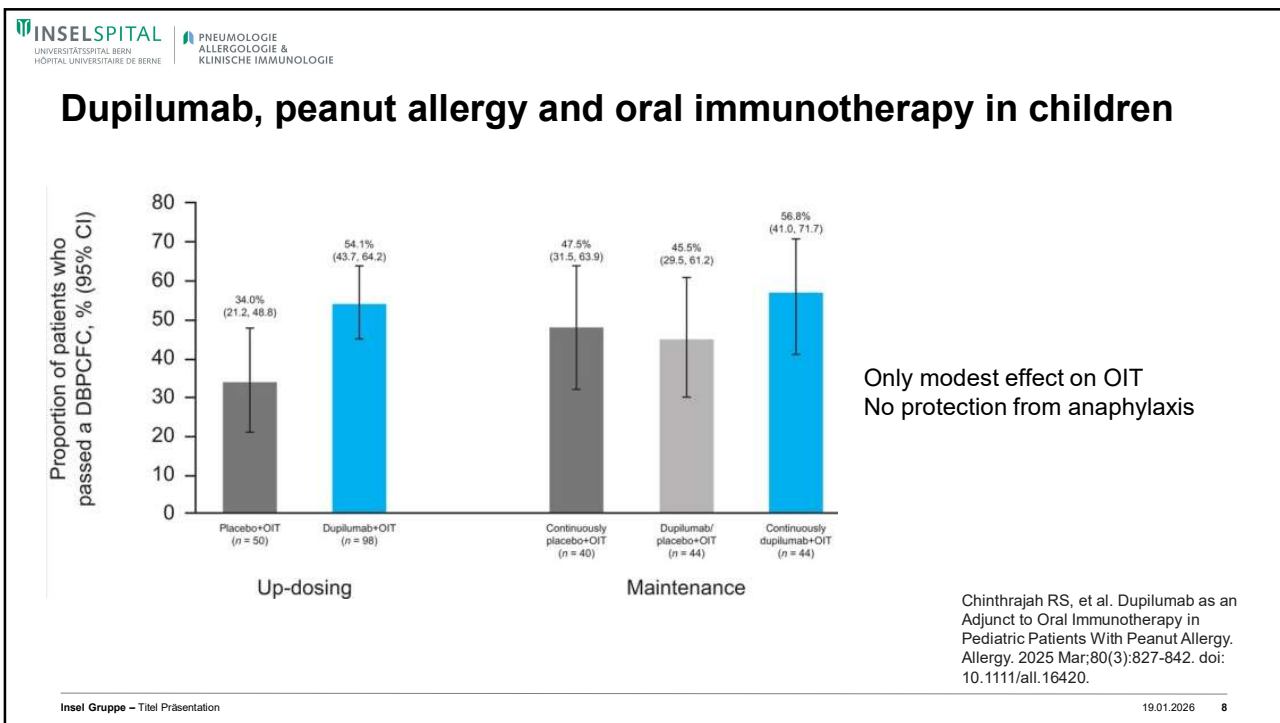
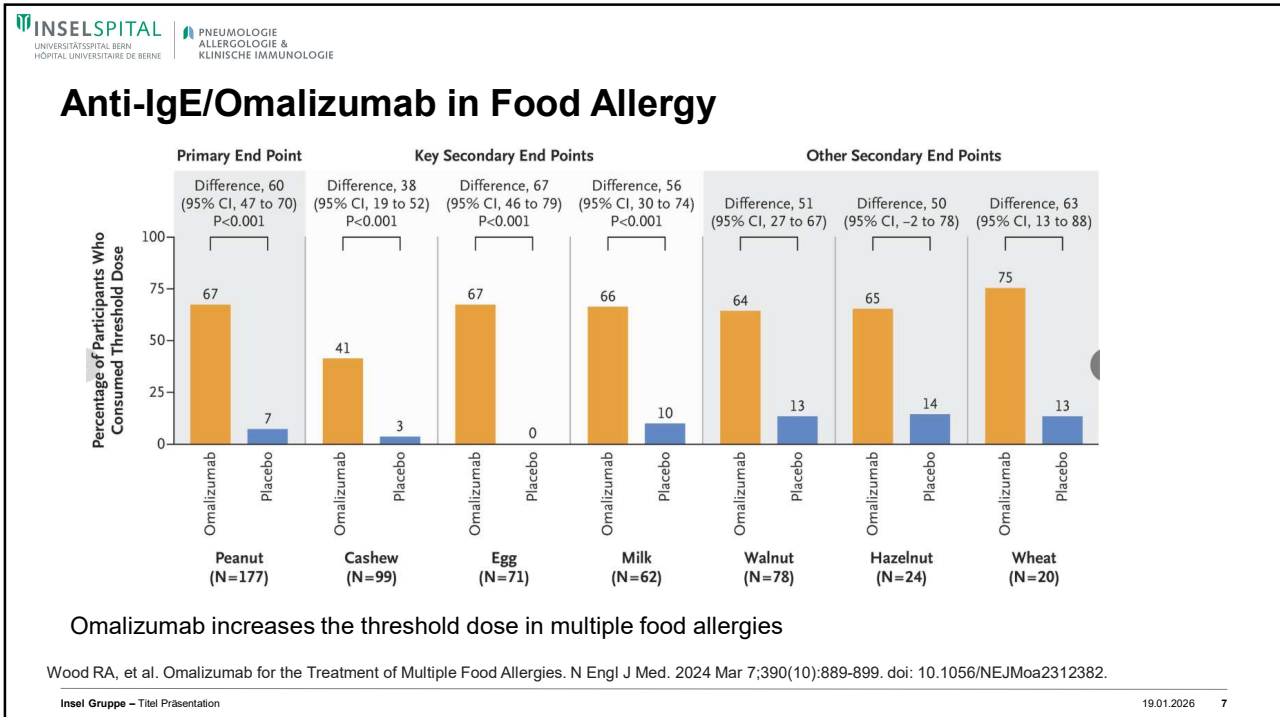
Oral Immunotherapy in Peanut allergic adults



n=15

OIT with defatted peanut flour effective in adults

Hunter H, et al. Oral Immunotherapy in Peanut-Allergic Adults Using Real-World Materials. *Allergy*. 2025 Aug;80(8):2310-2318. doi: 10.1111/all.16493.



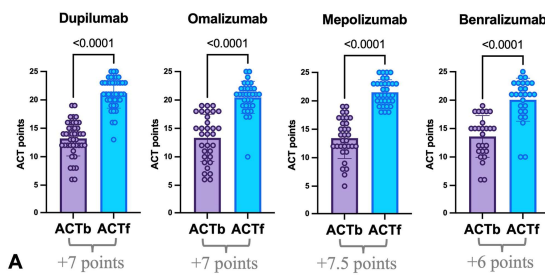
Outlook: Dupilumab and Food protein induced enterocolitis syndrome

Age; sex	Indication	Foods	Symptom	IgE	Dose	Time to full remission
18 mo; F	Eczema	Milk, soy, egg, all grains	Vomiting in 2 h	2	200 q4w	All foods were reintroduced in a 3-wk period without any symptoms
38 y; M	Prurigo nodularis	Multiple (>10)	Diarrhea and bloating lasting 2-3 d	10	300 q2w	All foods reintroduced in 2-mo period. Patient stated gaining so much weight that he had to start Ozempic
4 y; M	Eczema	Milk	Vomiting	5	300 q2w	Milk reintroduced in 2 wk
30 y; M	Asthma	Milk, soy, wheat	Diarrhea, bloody stool	18	300 q2w	Foods introduced in the order of milk, soy, and wheat over a course of 4 wk
28 y; F	Nasal polyps	Shellfish, fish	Vomiting, stomach pain	122	300 q2w	Passed multifoed challenge in 2 wk after therapy
2 y; M	Eczema	Milk	Vomiting in 1 h	19	200 q4	Passed milk challenge in 4 wk after therapy
68 y; F	Asthma	Walnut, cashew, pistachio	Diarrhea, colitis	10	300 q2	Passed challenge in 3 mo

Dupilumab might be a promising treatment for FPIES.

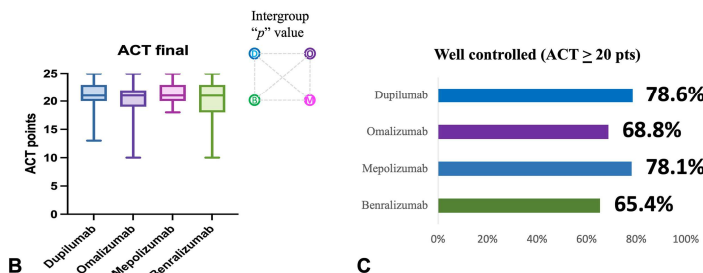
Plassmeyer M, et al. Dupilumab opens a therapeutic window in food protein-induced enterocolitis syndrome by unlicensing dendritic cells. *J Allergy Clin Immunol Glob.* 2025 Oct 30;5(1):100592. doi: 10.1016/j.jacig.2025.100592.

Head to head effectiveness comparison in allergic and eosinophilic asthma



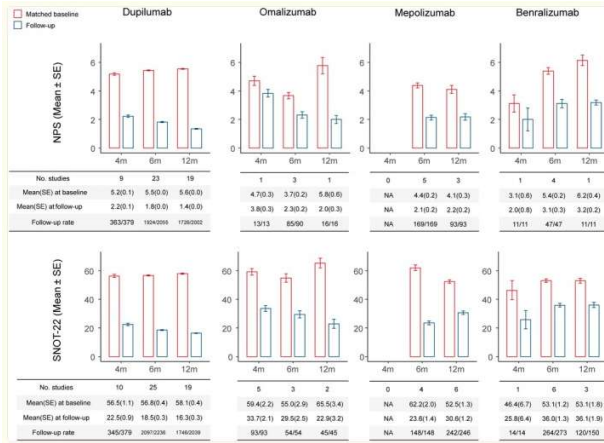
No significant difference between the 4 biologicals in most outcomes, statistically higher increase in FEV1 with Dupilumab and Mepolizumab. Benralizumab higher adherence.

Cave: n=133



Sánchez J et al. Head-to-Head Effectiveness Comparison of Biological Therapies in Patients With Mixed Eosinophilic and Allergic Severe Asthma. *J Allergy Clin Immunol Pract.* 2025 Jul;13(7):1776-1785. doi: 10.1016/j.jaip.2025.03.035.

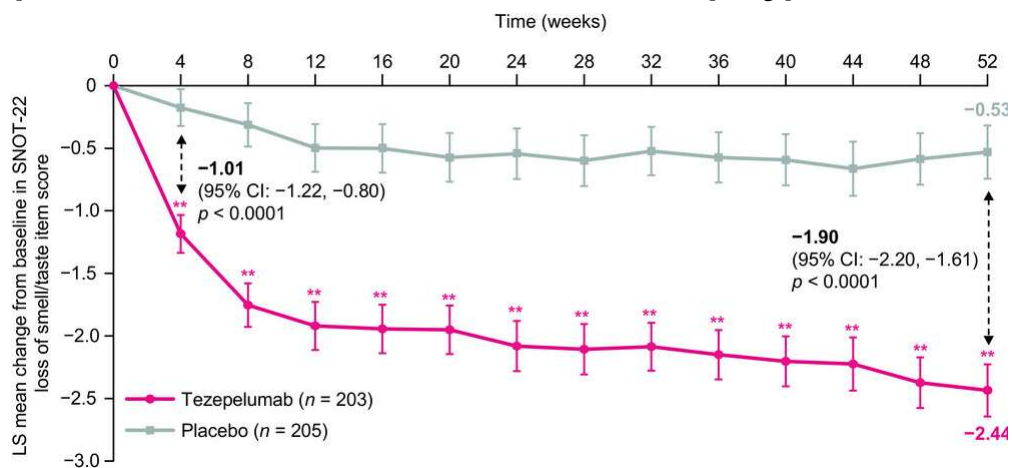
Biologicals in chronic rhinosinusitis with polyposis nasi – Meta analysis real world evidence



Direct comparison difficult:
Dupilumab often outperforms
other biologicals in CRSwNP

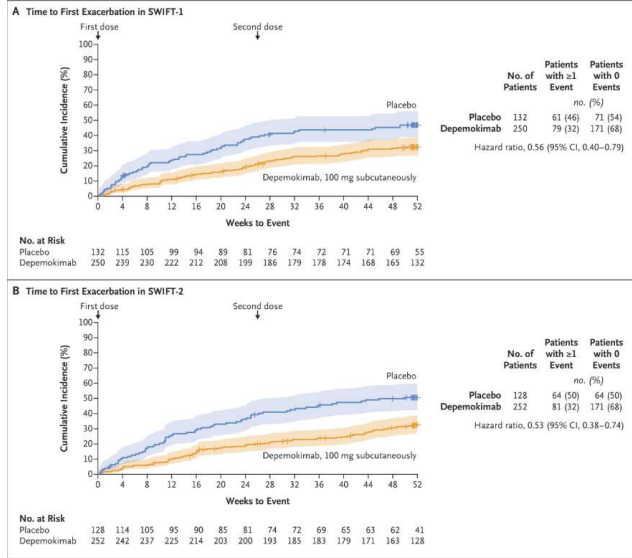
Cai S, Xu S, Zhao Y, Zhang L. Efficacy and Safety of Biologicals for Chronic Rhinosinusitis With Nasal Polyps: A Meta-Analysis of Real-World Evidence. Allergy. 2025 May;80(5):1256-1270. doi: 10.1111/all.16499.

Tezepelumab in chronic rhinosinusitis with polyposis nasi



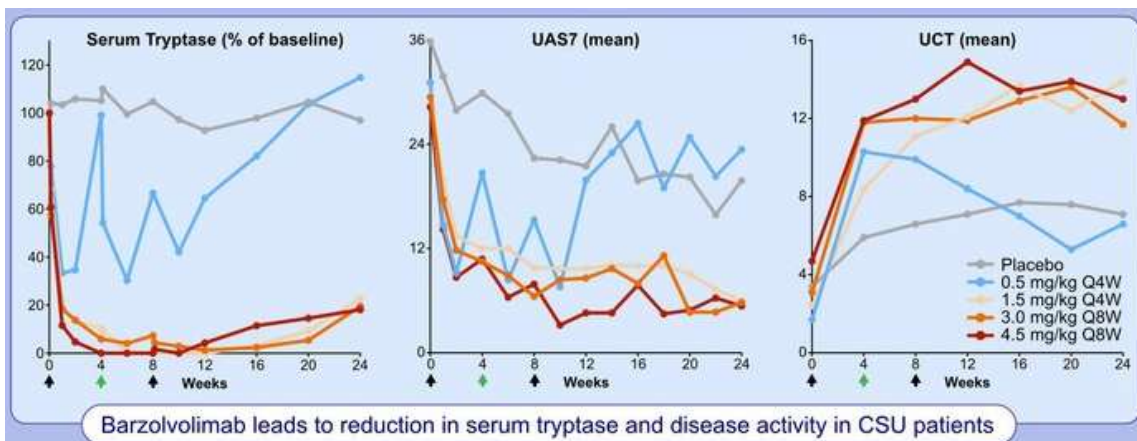
Mullol J et al. Early and Sustained Improvements in Sense of Smell With Tezepelumab Treatment in Patients With Chronic Rhinosinusitis With Nasal Polyps (WAYPOINT). Int Forum Allergy Rhinol. 2026 Jan 6. doi: 10.1002/alr.70090.

Depemokimab in severe Asthma – A long acting drug



Jackson DJ, et al.; SWIFT-1 and SWIFT-2 Investigators; SWIFT-1 Investigators; SWIFT-2 Investigators. Twice-Yearly Depemokimab in Severe Asthma with an Eosinophilic Phenotype. N Engl J Med. 2024 Dec 19;391(24):2337-2349. doi: 10.1056/NEJMoa2406673.

Anti-KIT biological – Barzolvolimab in urticaria



Maurer M, et al. Anti-KIT Barzolvolimab for Chronic Spontaneous Urticaria. Allergy. 2025 Aug;80(8):2178-2186. doi: 10.1111/all.16598.

Summary

- Immunotherapy Aeroallergens: Risk factors for systemic reactions
- Hymenoptera venom immunotherapy: U-Rush with depot venom preparations
- Oral immunotherapy in food allergy: peanut OIT effective in adults

- Omalizumab in food allergy: effective in increasing threshold dose to multiple food
- Dupilumab in food allergy and OIT: Modest effect on OIT, no protection from anaphylaxis
- Effectiveness of biologicals in eosinophilic asthma: Similar effect
- Biologicals in chronic rhinosinusitis and polyposis nasi: Tezepelumab as a new treatment option
- Omalizumab in drug allergy
- Future developments of biologicals: Depemokimab, Barzolvolimab