

Allergen immunotherapy and/or biologicals for IgE-mediated food allergy

A systematic review and meta-analysis¹

de Silva D, et al. Allergy. 2022;77:1852–62.

Aims: To understand the efficacy, safety and cost-effectiveness of allergen-specific immunotherapy (AIT) and biologicals – alone or combined – for the treatment of immunoglobulin E (IgE)-mediated food allergies.
To identify the most favourable route of administration for these therapies.



Methods: Search for **randomised controlled trials** for **allergen-specific immunotherapy (AIT)** or **biologicals alone** or as **combination therapy** for people with confirmed food allergy

6 databases  **Data pooling** using random-effects meta-analysis

Results

Included studies

AIT:

Biologicals:

 **36** trials

2,126 participants (mainly children)

118 participants (mainly teenagers and adults)
sample size too small to draw conclusions

 **3** trials

Oral AIT

Peanut  **Placebo**

Cow's milk  **Placebo**

Hen's egg  **Placebo**

Desensitisation while on treatment

Total number of participants	1,023	249	259
%	68 6	68 15	84 5
Absolute difference	62% (P<0.05)	53% (P<0.05)	79% (P<0.05)
Relative risk (95% CI)	9.9 (4.5, 21.4)	5.7 (1.9, 16.7)	8.9 (4.4, 18.0)
Certainty of evidence	High	Moderate	Moderate

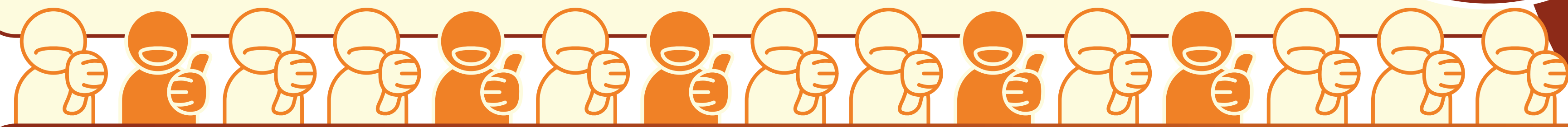
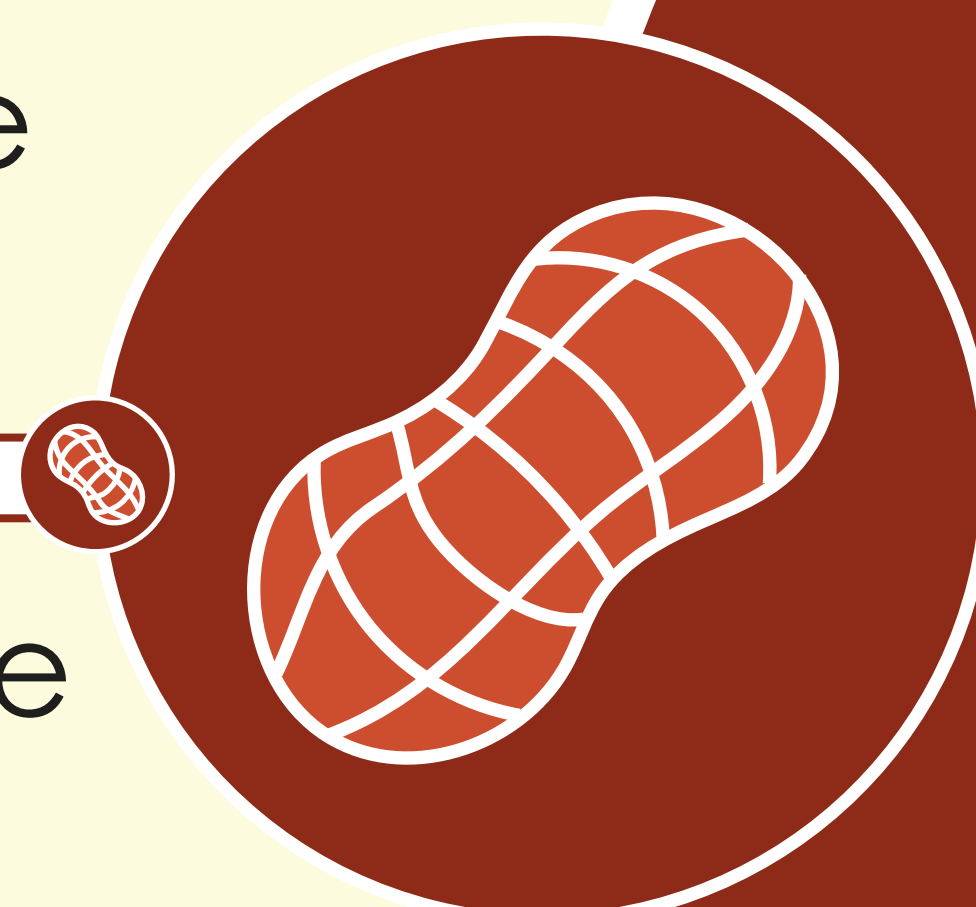
Adverse reactions

Total number of participants	953	210	291
%	98 89	85 17	79 8
Absolute difference	9% (P>0.05)	67% (P<0.05)	71% (P<0.05)
Relative risk (95% CI)	1.1 (1.0, 1.2)	3.9 (2.1, 7.5)	7.0 (2.4, 19.8)
Mild in severity	80–90%	Mostly	~95%
Certainty of evidence	Low	Low	Moderate

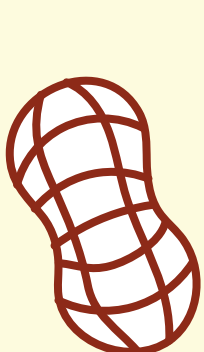
Compared with controls, **participants with peanut allergy** receiving oral AIT were:

6x more likely to tolerate a single dose of **300 mg peanut protein** (NNT: 2)

17x more likely to tolerate a single dose of **1,000 mg peanut protein** (NNT: 2)



About 1 in 3 participants maintained tolerance in the short term (3 months) after ending oral AIT for **peanut** or **hen's egg allergy***

 **Peanut AIT did not increase** the rate of adverse reactions or severe AR

 **An increase in the rate** of mild AR, but not severe AR, was seen with **cow's milk** and **hen's egg** AIT 

Routes of administration

Oral AIT increased tolerance while on treatment for **peanut, cow's milk** and **hen's egg** allergy 

Epicutaneous AIT increased tolerance while on treatment for **peanut** allergy[†]

Conclusions: **Oral AIT can help desensitise people with peanut, cow's milk or hen's egg allergy.** However, the tolerance may only last while on treatment. Adverse reactions to AIT are common but mostly mild. More research is needed to evaluate different routes of administration, cost-effectiveness, and the benefits and risks of biologicals for treating food allergies.