

Oral immunotherapy for treatment of food allergy in infants and preschoolers

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1 Oral immunotherapy is a treatment option for infants and preschoolers with food allergy, as an alternative to food avoidance

Food allergy is associated with substantial medical and psychosocial burden.¹ Management was previously restricted to avoidance. Oral immunotherapy builds protection against accidental exposure by reducing the severity and frequency of reactions and the exposure amount required to trigger anaphylaxis.^{2,3}

2 The allergen is administered in increasing doses

Low initial doses (doses beneath the reaction threshold) of the food allergen are initially administered under supervision, followed by daily exposure to the same dose at home. Patients are seen at regular intervals for dose advancement, until a target maintenance dose is reached (Appendix 1, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.231478/tab-related-content). Response to treatment is assessed by skin and serum immunoglobulin E testing and oral challenges. Patients who are receiving treatment carry an epinephrine autoinjector.

3 The evidence favours treatment of infants and preschoolers

For this age group, oral immunotherapy is supported by 2 high-quality randomized controlled trials and large, multicentre studies.²⁻⁵ Adverse effects were typically mild and included pruritus, hives, abdominal pain, or rhinorrhea.² Reactions treated with epinephrine during oral immunotherapy buildup occurred in 1.6% of infants and 5.9% of preschoolers; most received epinephrine for mild to moderate reactions, with about 0.9% of preschoolers receiving epinephrine for severe reactions.³⁻⁵

4 Oral immunotherapy reduces the risk of reaction due to accidental allergen exposure

About 80% of infant or preschooler patients are successfully desensitized after about 1 year of therapy and are able to safely consume up to a serving size of the food.²⁻⁵ This results in reduced anxiety, increased social engagement, reduced fear of accidental exposure, and improved quality of life.¹

5 Early initiation of oral immunotherapy is disease-modifying

Initiation of oral immunotherapy in infants and preschoolers is associated with improved safety and long-term efficacy, with reduced risk of expansion of the number of food allergies. Early and consistent exposure to the allergen results in disease remission despite discontinuation of regular consumption.⁵ Early referral and treatment of patients should be a priority. While waiting for oral immunotherapy, infants should ingest other priority allergens (<https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-allergies-intolerances/food-allergies.html>) regularly to prevent other food allergies from developing.

References

1. Bégin P, Chan ES, Kim H, et al. CSACI guidelines for the ethical, evidence-based and patient-oriented clinical practice of oral immunotherapy in IgE-mediated food allergy. *Allergy Asthma Clin Immunol* 2020;16:20.
2. Jones SM, Kim EH, Nadeau KC, et al.; Immune Tolerance Network. Efficacy and safety of oral immunotherapy in children aged 1–3 years with peanut allergy (the Immune ToleranceNetwork IMPACT trial): a randomised placebo-controlled study. *Lancet* 2022;399:359–71.
3. Du Toit G, Brown KR, Vereda A, et al. Oral immunotherapy for peanut allergy in children 1 to less than 4 years of age. *NEJM Evid* 2023;2:EVIDoa2300145. doi: 10.1056/EVIDoa2300145.
4. Soller L, Carr S, Kapur S, et al. Real-world peanut OIT in infants may be safer than non-infant preschool OIT and equally effective. *J Allergy Clin Immunol Pract* 2022;10:1113–6.e1.
5. Zhu R, Robertson K, Protudjer JLP, et al. Impact of age on adherence and efficacy of peanut oral-immunotherapy using a standardized protocol. *Pediatr Allergy Immunol* 2021;32:783–6.

Competing interests: Samira Jeimy has been a member of advisory boards for Sanofi Genzyme, GSK, and ALK, received honoraria for speaking engagements from GSK and L'Oréal, and provided consultancy services for the Canadian Agency for Drugs and Technologies in Health. Dr. Jeimy has leadership roles with the Ontario Medical Association and the Canadian Society of Allergy and Clinical Immunology. Edmond Chan has received research support from DBV Technologies; has been a member of advisory boards for Pfizer, Miravo, Medexus, LEO Pharma, Kaléo, DBV Technologies, Allergenis, Sanofi Genzyme, Bausch Health, Avir Pharma, AstraZeneca, ALK, and Alladapt Immunotherapies; and was co-lead of the Canadian Society of Allergy and Clinical Immunology (CSACI) oral immunotherapy guidelines. Dr. Chan is an executive of the CSACI, executive of the Canadian Paediatric Society, and member of the Healthcare Advisory Board for Food Allergy Canada. Vicki Cook has been a member of advisory boards for Sanofi Genzyme, Bausch Health, and ALK, has received honoraria from Aralez Pharmaceuticals, ALK, Pfizer, and CSL Behring, and has a leadership role with CSACI. Dr. Cook reports funding to her institution from the Island Health Authority for Physician Quality Im-

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