OIT for Infants & Toddlers

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Early Peanut OIT is Safe and Highly Effective Vickery 2017

- 37 toddlers randomized 1:1 to <u>1 or 10 peanuts</u>
 - Build up: 89% reached target
 - 95% had reactions: 85% mild, 15% mod., 1 epi
 - Maintenance ~1.5 yr, 16 peanut challenge: 81% passed
 - 1 month no peanut, re-challenge: 78% sustained unresponsiveness

• No differences in immunologic responses between <u>1 or 10 peanuts</u>



Early Peanut OIT - 5 Year Follow Up- Vickery

- 29 responders to phone survey
 - 93% continued to eat peanut
 - 62% regularly carried epinephrine devices
 - 59% no longer saw an allergist
 - 31% chronic GI complaints (2 EoE: 1 egg, 1 peanut: 3%)



Wasserman JACI Pract 2019



FIGURE 4. The probability of reaching the escalation target based

on pretreatment PSIgE level and age at the start of therapy.

Each year of delay after age 5 decreases the likelihood of success by 17%

First Real-World Safety Analysis/Effectiveness of Preschool Peanut OIT

- 270 Canadian preschoolers
 - Build up to target dose 1 peanut
 - 90% Reached target
 - 68% Had OIT reactions- most mild/moderate, 1 severe
 - 11 Received epi (4%)

- Follow up: 1 year on 1 peanut daily
 - 79% Passed 13 peanuts (Vickery 85%)
 - 98% Passed >3 peanuts



2022 Infant (<12 mon) Analysis:

• 62/69 (90%) infants reached maintenance



- Infants who completed buildup had fewer grade 2+ reactions during baseline OFC or buildup
- Build up: One infant (1.60%) received epinephrine
- Infants had no grade 2+reactions during follow-up 13 peanut OFC

First Real-World Safety Analysis/Effectiveness of Preschool Tree Nut OIT

- 92 patients started Tree Nut-OIT
 - 79 (85.9%) underwent single-food TN-OIT
 - 13 (14.1%) underwent multi-food TN-OIT to 2 (10.8%) or 3 (3.3%) Tree Nuts
- Eighty-nine (96.7%) patients reached maintenance
- Sixty-five (70.7%) patients experienced reactions during buildup:
 - 35 (38.0%) grade 1 reactions
 - 30 (32.6%) grade 2 reactions
 - no grade 3 or 4 reactions
 - 2 (2.17%) received epinephrine



Efficacy and Safety of OIT in 1– 3-Year-Old Children with Peanut Allergy: IMPACT Trial



- 146 children aged 12 to < 48 months, reactive to ≤500 mg peanut protein
 - 96 children randomized to 8 peanuts/day
 - 50 children given placebo for ~2.5 years
- Then challenged to 20 peanuts = <u>desensitization</u>
- Followed by 6 months of avoidance
- Rechallenged to 20 peanuts = <u>remission</u>

IMPACT TRIAL Results



- 71% of the Peanut OIT vs 2 % placebo were desensitized
- 21% of the Peanut OIT vs 2% placebo had remission
- The median Cumulative Tolerated Dose during the remission challenge was 755 mg for peanut OIT
- Most participants (98% Peanut OIT vs. 80% placebo) experienced at least 1 OIT dosing reaction
 - Predominantly mild-moderate and occurring more frequently in Peanut OIT
 - 35 OIT dosing events with moderate symptoms were treated with epinephrine in 21 peanut OIT

IMPACT Trial Results



White numbers are the probability of remission

Preschool Peanut vs Multi-Food OIT

<=60 months oldc	Ν	Age (median)	Day 1 reaction	Day 1 Epi	Maintenance < 1 year	Maintenance	Epi reactions
Peanut	58	40 months	9 (16%)	1	40 (69%)	51 (88%)	5 (9%)
Multi-food	35	43 months	5 (14%)	0	21 (60%)	28 (80%)	3 (9%)

Data: Windom Allergy AAAAI Abstract 2022

How I Select Preschool OIT Candidates

- Are they likely to outgrow peanut allergy?
 - Severity of reaction
 - Severity of eczema
 - Testing 95% PPV persistent allergy:
 - 1 yo 13 mm wheal, sIgE 5 Peters, JACI 2015
 - 2 yo 6 mm wheal, sIgE 3 **HO, JACI 2008**
 - Resolution: Decrease in testing
 - Windom Allergy: slgE/total lgE, repeat testing in 6 mon
 - **Proactive Parents/Anxiety/Shared Decision**



You don't fight a hurricane ... or a wildfire ... or natural events

You minimize risk

The greatest, and easiest way to minimize risk in food allergy is to start OIT early



References

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