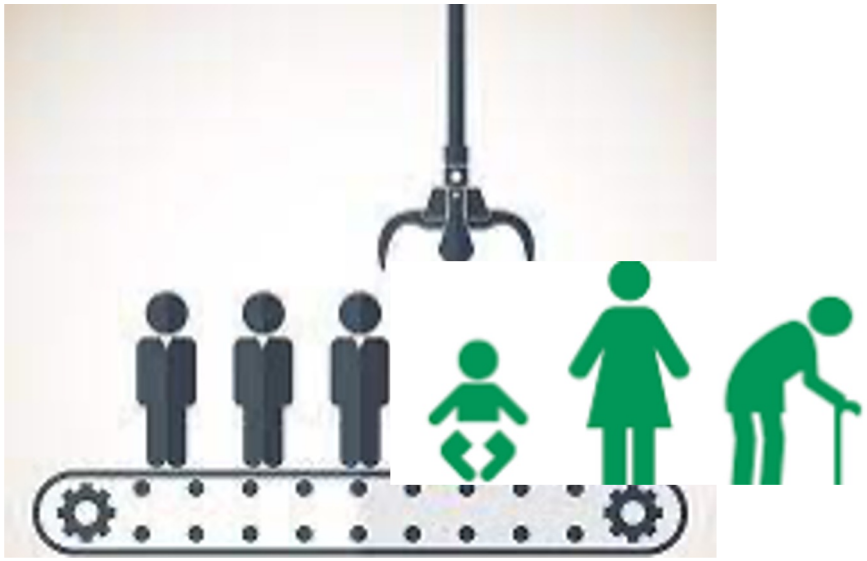
Patient Selection for OIT

Tom Chacko and Jean Ly



Diagnosis: History

- Clear IgE-mediated symptoms attributable to the allergen ingestion
- Consistent sensitization to the allergen
- Oral Food Challenge (OFC) is not required unless:
  - To clarify diagnosis with ambiguous cases
  - Establish baseline threshold pretherapy
  - Shared Decision Making

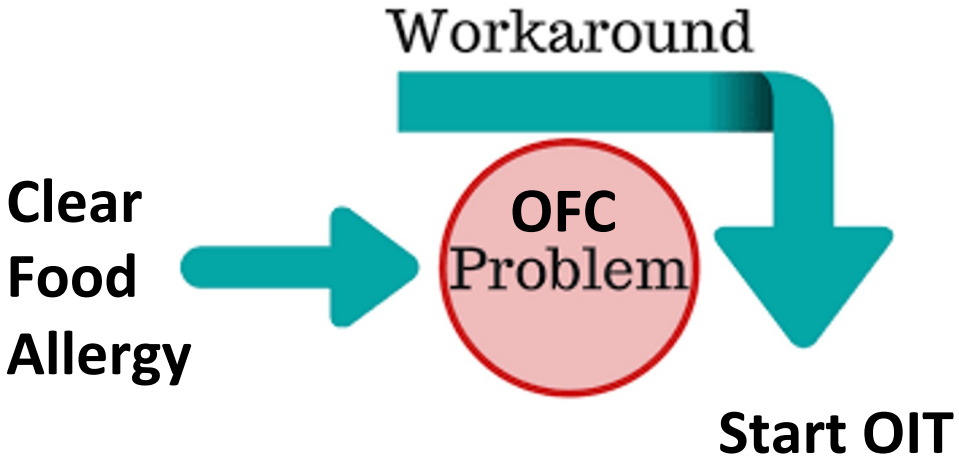


TABLE IV. Iteration 3 criteria for recommended challenge location

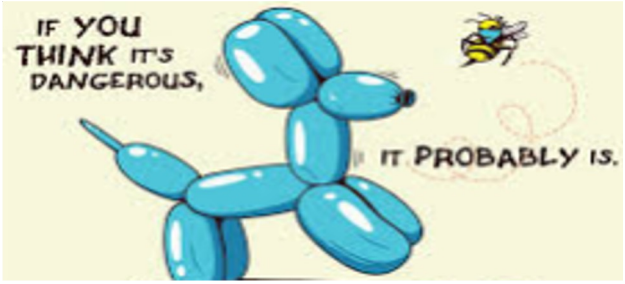
	Best clinical judgment (consider for home)	Home	Clinic	Infusion center	Best clinical judgment (consider for CAT/CR)	Not recommended
Egg		sIgE ≤ 0.35 kU/L SPT ≤ 5 mm	sIgE > 0.35 and ≤ 2 kU/L SPT > 5 and ≤ 7 mm	sIgE > 2 and ≤ 6 kU/L SPT > 7 and ≤ 8 mm	sIgE > 6 and ≤ 10 kU/L SPT > 8 and ≤ 10 mm	sIgE > 10 kU/L SPT >10 mm
Baked egg		EW sIgE ≤ 1 kU/L OVM sIgE ≤ 1 kU/L SPT ≤ 10 mm	EW sIgE > 1 and ≤ 10 kU/L OVM sIgE > 1 and ≤ 10 kU/L SPT > 10 and ≤ 25 mm	EW sIgE >10 and ≤ 20 kU/L OVM sIgE >10 and ≤ 15 kU/L SPT > 25 and ≤ 35 mm	EW sIgE > 20 and ≤ 40 kU/L OVM sIgE >15 and ≤ 35 kU/L SPT > 35 mm	EW sIgE > 40 kU/L OVM sIgE > 35 kU/L
Milk		sIgE ≤ 0.5 kU/L SPT neg (0)	sIgE > 0.5 and ≤ 2 kU/L SPT > 0 and ≤ 8 mm	sIgE > 2 and ≤ 5 kU/L SPT > 8 and ≤ 10 mm	sIgE > 5 and < 15 kU/L SPT > 10 and ≤ 12 mm	sIgE ≥ 15 kU/L SPT > 12 mm
Baked milk		sIgE ≤ 1 kU/L SPT ≤ 10 mm	sIgE > 1 and ≤ 15 kU/L SPT > 10 and ≤ 15 mm	sIgE >15 kU/L and ≤ 20 kU/L SPT > 15 mm and ≤ 20 mm	sIgE > 20 and ≤ 40 kU/L SPT > 20 and ≤ 35 mm	sIgE > 40 kU/L SPT > 35 mm
Peanut	sIgE ≤ 0.35 kU/L SPT neg (0) Ara h2 ≤ 0.35 kU/L		sIgE > 0.35 and ≤ 0.7 kU/L SPT > 0 and ≤ 5 mm Ara h2 ≤ 0.35 kU/L	sIgE > 0.7 and ≤ 1 kU/L SPT > 5 and < 8 mm Ara h2 > 0.35 and ≤ 1 kU/L	sIgE > 1 and < 15 kU/L SPT ≥ 8 and < 10 mm Ara h2 > 1 and < 2 kU/L	sIgE ≥15 kU/L SPT ≥ 10 mm Ara h2 ≥ 2 kU/L
Tree nut	sIgE ≤ 0.35 kU/L SPT neg (0) mm		sIgE > 0.35 and ≤ 0.5 kU/L SPT > 0 and ≤ 5 mm	sIgE > 0.5 and ≤ 3 kU/L SPT > 5 and ≤ 6 mm	sIgE > 3 and <18 kU/L SPT > 6 and < 8 mm	sIgE ≥ 18 kU/L SPT ≥ 8 mm

Boston Children's Article (JACI in Practice 2017) with cut off points on when not to challenge certain foods.

Co-Morbidities Risk Assessment

High Risk

- H/o life-threatening anaphylaxis
- Uncontrolled Asthma
- Pregnancy (build up)
- Type of food (egg/milk -higher risk??



Moderate Risk

- Eosinophilic GI disorders
- Chronic Urticaria
- Mastocytosis/mast cell disorder
- Beta-blocker or ACE- Inhibitor
- Chronic conditions that may lower allergen thresholds

Co-Morbidities Risk Assessment

Nonmedical

- Excessive anxiety
- Taste aversion
- Non-compliance
- Scared of epinephrine
- Distance from home to hospital
- Language Barrier
- Non collaborative family dynamics
- Lack of schedule flexibility

Not Contraindications

- Controlled Asthma
- Mild/moderate anaphylaxis
- Multi food allergies
- High specific food IgE

Food Allergy and Balance

Age

- Younger ages may have better outcomes + fewer systemic reactions
- OIT for all ages
- What is the natural resolution of the Food Allergy (milk or egg)

Wasserman JACI Pract 2019

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

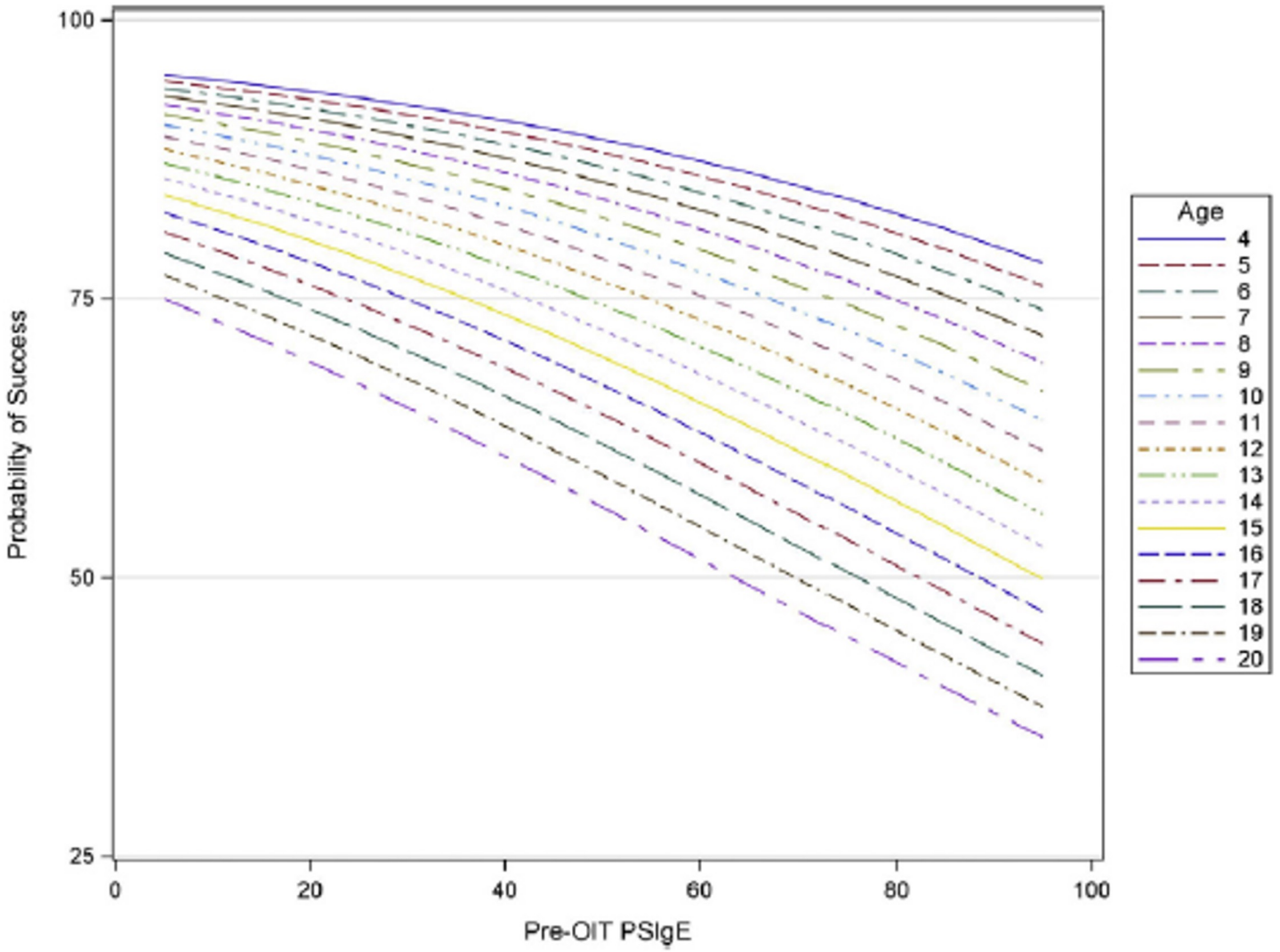


FIGURE 4. The probability of reaching the escalation target based on pretreatment PSIgE level and age at the start of therapy.

Early Peanut OIT is Safe and Highly Effective - Vickery

37 toddlers Randomized 1:1 to 1 or 10 peanuts

Build up: 42 weeks, 21 visits (~97% reached target)

Maintenance: median ~2.5 yr, (at least 12 mon, psIgE <15, ST <8mm)

Eligible for 16 peanut challenge:

81% passed "desensitized"

1 month no peanut, 16 peanut re-challenge:

78% sustained unresponsiveness

Reactions: 85% mild, 15% mod., none severe

No differences in immunologic responses between groups

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 81%)**
  - **98% Passed >3 peanuts**

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

2022 infant (<12 months) analysis:

- Infants: fewer grade 2+ reactions during baseline OFC or buildup
  - (33.9% vs 53.7%; P .002)
- Build up: One infant (1.60%) received epi
- None of the infant dropouts needed epi
- Infants had no grade 2+reactions during follow-up OFC
  - 7.70% of NI-preschoolers did

Preschool Peanut vs Multi-Food OIT

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

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
    - 2 yo 6 mm wheal, sIgE 3
  - Resolution: Decrease in testing
  - **Windom Allergy: sIgE/total IgE, repeat testing in 6 mon**
  - **Proactive Parents/Anxiety/Shared Decision**

Peters, JACI 2015; HO, JACI 2008

Adherence

- OIT discontinuations occur most commonly during build up
  - Systemic reactions
  - Gastrointestinal side effects
  - Taste aversion

- Patients' goals and preferences should be reassessed periodically

Unmet Need - Long Term Follow-Up

Adherence:

	SCIT	SLIT	OIT
2 years	61%	33%	
3 years	36%	14%	
3-8 years			50-92%

5 Year Early Peanut OIT 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%)

References

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