GUIDELINES FOR FOOD INTRODUCTION

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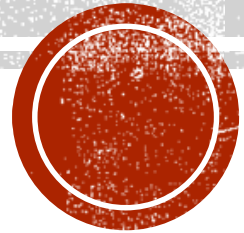

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- **Faculty:** [Elissa Abrams]

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WHY EARLY PEANUT INTRODUCTION?

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Randomized Trial of Peanut Consumption in Infants at Risk for Peanut Allergy

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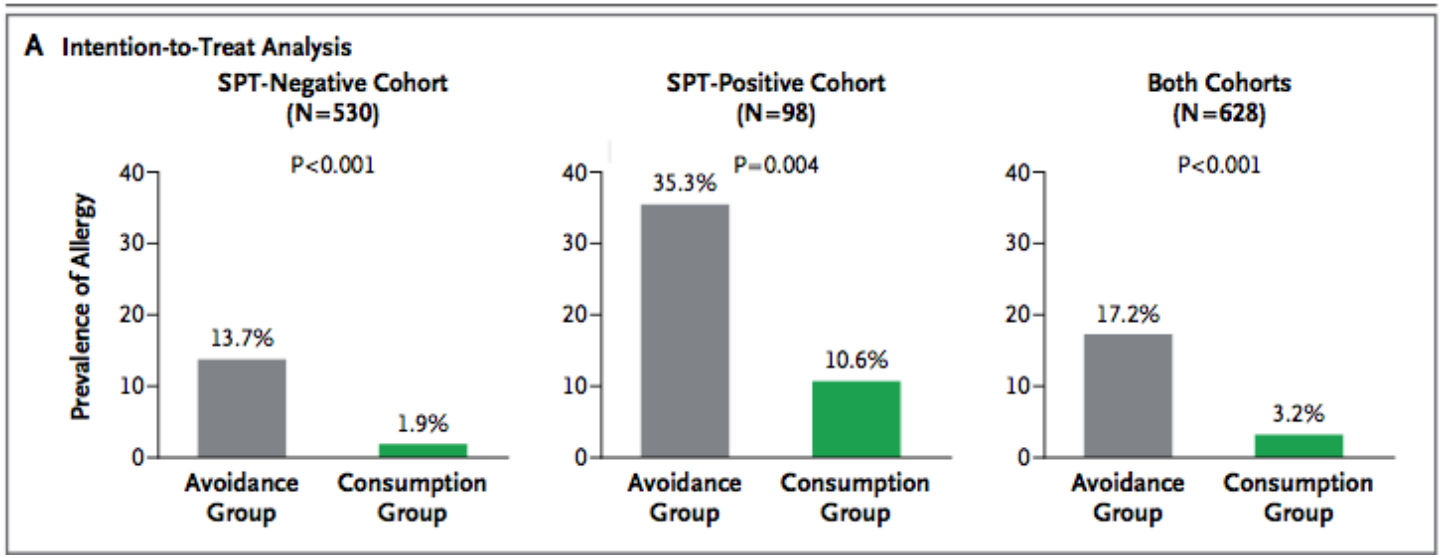

2017 NIAID Guideline for the Prevention of Peanut Allergy

National Institute of Allergy and Infectious Diseases

Summary of Addendum Guidelines

Addendum Guideline	Infant Criteria	Recommendations	Earliest Age of Peanut Introduction
1	Severe eczema, egg allergy, or both	Strongly consider evaluation with peanut-specific IgE and/or skin prick test and, if necessary, an oral food challenge. Based on test results, introduce peanut-containing foods.	4 to 6 months

Togias A, Cooper SF, Acebal ML et al. Addendum guidelines for the prevention of peanut allergy in the United States: Report of the National Institute of Allergy and Infectious Diseases-sponsored expert panel. *J Allergy Clin Immunol* 2017;139:29-44.

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2	Mild to moderate eczema	Introduce peanut-containing foods.	Around 6 months

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2	Mild to moderate eczema	Introduce peanut-containing foods.	Around 6 months
3	No eczema or any food allergy	Introduce peanut-containing foods.	Age-appropriate and in accordance with family preferences and cultural practices

Togias A, Cooper SF, Acebal ML et al. Addendum guidelines for the prevention of peanut allergy in the United States: Report of the National Institute of Allergy and Infectious Diseases-sponsored expert panel. *J Allergy Clin Immunol* 2017;139:29-44.

DECONSTRUCTING THE NIAID GUIDELINES

A CASE

- 6 month old female seen for well baby check. Brother has peanut allergy.
- Eczema since first month of life; emollient used daily but topical corticosteroids only used infrequently
- Child has never eaten peanut
- Examination unremarkable other than widespread eczema
- **WHAT NOW? DOES THIS INFANT REQUIRE PRE-EMPTIVE TESTING?**

DOES THIS INFANT REQUIRE PRE-EMPTIVE PEANUT TESTING?

- How do you define "severe eczema"?

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Study/Guideline	Definition of Severe Eczema
LEAP[2]	An eczematous rash that either scores >40 using a modified SCORAD evaluation or "requires application of topical creams, ointments, or both containing corticosteroids or calcineurin inhibitors and that, if the participant is <6 months of age, lasted for at least 12 of 30 days on 2 occasions or, if the participant is >6 months of age, lasted for at least 12 of 30 days on 2 occasions in the last 6 months."
NIAID[1]	"Persistent or frequently recurring eczema with typical morphology and distribution assessed as severe by a health care provider and requiring frequent need for prescription-strength topical corticosteroids, calcineurin inhibitors, or other anti-inflammatory agents despite appropriate use of emollients."

Abrams EM, Chan ES. *Journal of Pediatrics* 2018 Jan 15 [epub ahead of print]

DEFINITION OF SEVERE ECZEMA

- US Survey of Children's Health – prevalence of eczema 12.97%, of which only 7.0% had severe disease (0.9% of infants in the United States).
- With large prevalence of eczema, even small shift could result in over-screening ("screening creep")
  - Australian study – if moderate/severe eczema was defined more broadly, could result in testing 16% of population
- In addition, how do you define "frequent need" for topical medications?
  - Compliance traditionally terrible with eczema medications
  - How do you categorize parental refusal?

Abrams EM, Chan ES. *Journal of Pediatrics* 2018 Jan 15 [epub ahead of print]
O'Connor C, Kelleher M, O'B Hourihane J. Calculating the effect of population-level implementation of the Learning Early About Peanut Allergy (LEAP) protocol to prevent peanut allergy. *J Allergy Clin Immunol* 2016;137:1263-4
Turner PJ, Campbell DE. Implementing primary prevention for peanut allergy at a populational level. *JAMA* 2017;317:1111-1112.

DOES SIBLING WITH PEANUT ALLERGY NECESSITATE PRE-EMPTIVE SCREENING?

IS SIBLING ALLERGY AN INDICATION FOR PRE-EMPTIVE SCREENING?

- Are siblings at increased genetic risk?
- SAGE study: in 514 families, PA higher in siblings (OR 6.72; 95%CI: 2.04-22.12)
- Recent large cohort refutes these findings – in 2834 children PA in child not significant risk for PA in sibling
- Has been hypothesized that increased risk of PA in siblings related to delayed ingestion
  - Canadian Peanut Registry: If siblings born after a child with PA they were more likely to have never been exposed to peanut (OR 6.2; 95%CI 4.1-9.4) and/or to be labeled as peanut allergic without confirmatory testing or supportive clinical history (OR 12.7; 95%CI 1.3-120.7).

Abrams EM, Chan ES, Sicherer SH. *J Allergy Clin Immunol Pract* 2018 Jan 31 [epub ahead of print]
Liem J, Huq S, Kozyrskyj AL, Becker AB.. *Allergy Asthma Clin Immunol* 2008;4(4):144-9.
Hourihane JO, Dean TP, Warner JO. *BMJ* 1996;313(7056):518-21.
Gupta RS, Walkner MM, Greenhawt M et al. *J Allergy Clin Immunol Pract* 2016;4(5): 956-62.
Lavine E, Clarke A, Joseph L et al. *Clin Exp Allergy* 2015;45(1): 249-54.
Begin P, Graham F, Killer K, Paradis J, Paradis L, Des Roches A.. *Allergy* 2016;71:1762-71.

IS SIBLING ALLERGY AN INDICATION FOR PRE-EMPTIVE SCREENING?

- Will families introduce peanut without pre-emptive screening?
- Significant anxiety about introduction at home without screening:
  - Begin et al – highest level of anxiety related to at-home introduction without testing
  - When asked what they would do if their physician recommended at-home peanut introduction without pre-emptive evaluation 82% (95% CI, 75% to 88%) stated that they would continue to avoid peanut, and 53% (95% CI, 45% to 63%) stated that they would seek a second opinion.
- However, anxiety about peanut introduction may be endemic even without a sibling who has allergy
  - Survey of 644 Canadian parents with food allergic child - if a family chose to delay introduction of allergenic foods to a younger sibling, peanut was the most common food that was delayed or avoided (90.7%) despite only 48.8% of the index children having peanut allergy

Abrams EM, Chan ES, Sicherer SH. *J Allergy Clin Immunol Pract* 2018 Jan 31 [epub ahead of print]
Begin P, Graham F, Killer K, Paradis J, Paradis L, Des Roches A.. *Allergy* 2016;71:1762-71.

IS SIBLING ALLERGY AN INDICATION FOR PRE-EMPTIVE SCREENING?

- A retrospective study of all anaphylaxis fatalities in children in the UK and Ireland over a 10-year period - 8 anaphylaxis fatalities overall (risk 1 in 800,000 per year), the majority of which were to milk (4/8 fatalities). There were no peanut fatalities in children below 13 years of age, and no near-fatal reactions caused by peanut.
- A 2015 review of anaphylaxis literature over a 10-year period -incidence of 0.12 to 1.06 deaths per million person- years.
  - associated with older age, causes other than food allergy, and, in the case of food allergy, almost always occurs in those with a previously diagnosed food allergy, rather than on a first exposure.

McHenryM, WatsonW. Allergy Asthma Clin Immunol 2014;10:26.
Macdougall CF, Cant AJ, Colver AF. Arch Dis Child 2002;86:236-9.

Should Younger Siblings of Peanut Allergic Children Be Screened for Peanut Allergy?

Elissa M. Abrams, MD[a,b], Edmond S. Chan, MD[b], and Scott H. Sicherer, MD[c] *Winnipeg, MB, Canada; Vancouver, BC, Canada; and New York, NY*

In conclusion, testing siblings of peanut allergic children carries the risk of overdiagnosis of peanut allergy, as well as delayed peanut introduction due to the lack of resources available for this screening. Delayed peanut introduction in young siblings due to a blanket screening policy could ironically negate the benefits of early introduction identified by the LEAP study. However, this must be carefully balanced against the risk that if a family is concerned about peanut introduction, they may delay if no pre-emptive testing is offered as well.

DOES EGG NEED TO BE INTRODUCED BEFORE PEANUT?

WHAT ABOUT EATING EGG BEFORE PEANUT INTRODUCTION?

Early Infant Feeding Guidelines FAQs

The new Addendum Guidelines for the Prevention of Peanut Allergy in the U.S. were released in January 2017. This report from the National Institute of Allergy and Infectious Diseases (NIAID) represents a dramatic shift from previous advice to parents and caregivers regarding the introduction of peanut in a child's diet.

The Canadian Society of Allergy and Clinical Immunology (CSACI) and Food Allergy Canada have compiled this list of FAQs from the most common questions parents asked about these guidelines. These questions are answered by Canadian Pediatric Allergists Dr. Elissa M. Abrams and Dr. Kyla J. Hildebrand. We hope you find these FAQs helpful and informative.

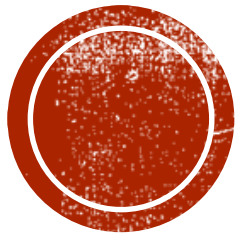
As always, we advise parents to speak with their physician if they have any concerns.

Canadian Society of Allergy and Clinical Immunology

Food Allergy Canada

10. How do you know your child is egg allergic if they haven't eaten egg yet at 4 months? Do they need testing to egg, or to eat egg, before eating peanut?	Allergic symptoms to egg include rash, swelling, vomiting, or breathing problems after eating egg products. In the NIAID guidelines, egg allergy is defined as having a history of reacting to egg and either a positive scratch test to egg or a reaction to egg on an observed feed at an allergist's office. Your child does not need to eat egg before eating peanut. However, if your child is known to be allergic to egg, or has had allergic symptoms with egg, they should be evaluated before eating peanut.

Parents or practitioners may erroneously believe that egg should be introduced prior to peanut due to the presence of this criteria, and it must be reiterated that the NIAID guideline does not require, nor recommend, egg introduction prior to peanut introduction.



WHY DOES IT MATTER IF WE OVER-SCREEN?

- "Screen creep" to test to more than peanut
- Delaying introduction waiting for necessary steps such as allergy referral
- Overdiagnosis - <40% of those with positive peanut screening are clinically allergic

Turner PJ, Campbell DE. Implementing primary prevention for peanut allergy at a populational level. *JAMA* 2017;317:1111-1112.
Koplin JJ, Peters RL, Dharmage SC et al. Understanding the feasibility and implications of implementing early peanut introduction for prevention of peanut allergy. *J Allergy Clin Immunol* 2016;138:1131-41.
Abrams EM, Chan ES. *Journal of Pediatrics* (epub ahead of print)

ARE OTHER GUIDELINES MAKING THE SAME RECOMMENDATIONS?

PROPOSED CPS PRACTICE POINT RECOMMENDATIONS

- Allergenic solids be introduced into diet “at around six months but not before four months” of age, while continuing to breastfeed
- Once introduced, if tolerated, regular exposure to the allergenic food is important for maintenance of tolerance

Abrams EM, Hildebrand K, Blair B, Chan ES. Revisions completed. With CPS Board of Directors.

LETTER TO THE EDITOR Open Access

Primum non nocere—first do no harm. And then feed peanut

Kyla Jade Hildebrand[1*], Elissa Michele Abrams[2], Timothy K. Vander Leek[3], Julia Elizabeth Mainwaring Upton[4], Douglas P. Mack[5], Linda Kirste[6], Christine McCusker[7] and Sandeep Kapur[8]

COULD REGULAR EMOLLIENT USE HAVE PREVENTED ECZEMA, AND FOOD ALLERGY, IN THIS CHILD?

- Eczema is due to skin barrier dysfunction; food sensitization occurs through the skin
- Meta-analysis: increased risk of eczema (OR 4.78; 95%CI: 3.31-692) with filaggrin mutations
- FLG also associated with early persistent eczema, aeroallergen sensitization, asthma, and FA
- Thought this might explain the concept of transcutaneous sensitization to foods

Irvine AD, McLean WH, Leung DY. *N Engl J Med* 2011;365(14): 1315-27.
van den Oord RA, Sheikh A. *BMJ* 2009;339: b2433.
Henderson J, Northstone K, Lee SP et al. *J Allergy Clin Immunol* 2008;131(4): 872-7.
Venkataraman D, Soto-Ramirez N, Kurukulaaratchy RJ et al. *J Allergy Clin Immunol* 2014;134(4): 876-882.

- Two small studies have suggested that regular use of emollients from birth can reduce the risk of eczema.
  - RCT of 124 neonates at high risk of eczema found that full-body emollient therapy at least once a day in the first 3 weeks of life significantly reduced the incidence of eczema at 6 months of age compared to no emollient use (relative risk, 0.50; 95%CI 0.28-0.9; P=0.17)
  - RCT of 118 infants at high risk of eczema also found that regular emollient use from the first week of life for 32 weeks significantly reduced the cumulative incidence of eczema (32% reduction, P=0.012). This study did not find a statistically significant difference in rate of egg sensitization, but that was a secondary outcome only.

Lack G, Fox D, Northstone K, Golding J. *N Engl J Med* 2003;348(11): 977-85.
Simpson EL, Chalmers JR, Hanifin JM et al. *J Allergy Clin Immunol* 2014;134: 818-23.

ARE THERE ANY CURES FOR PEANUT ALLERGY ON THE HORIZON?

Early oral immunotherapy in peanut-allergic preschool children is safe and highly effective

Brian P. Vickery, MD,[a] Jelena P. Berglund, PhD,[b] Caitlin M. Burk, BA,[a] Jason P. Fine, PhD,[a] Edwin H. Kim, MD, MHS,[a] Jung In Kim, MS,[a] Corinne A. Keet, MD, PhD,[c] Michael Kulis, PhD,[a] Kelly G. Orgel, BS,[a] Rishu Guo, MD, PhD,[a] Pamela H. Steele, CPNP,[a] Yamini V. Virkud, MD, MPH,[d] Ping Ye, PhD,[a] Benjamin L. Wright, MD,[e] Robert A. Wood, MD,[c] and A. Wesley Burks, MD[a] *Chapel Hill and Durham, NC, Baltimore, Md, Boston, Mass, and Scottsdale, Ariz*

- 40 children aged 9-36 months with suspected or known PA (OFC at baseline)
- Goal maintenance doses of 300 or 30000 mg/day in DB fashion
- Overall 78% achieved sustained unresponsiveness over median 29 months (per-protocol was 91%)
- S/E common but mild to moderate (no anaphylaxis)

QUESTIONS?