Preventing Food Allergies: The Impact of What and When We Feed Babies

Presented by: Sherry Coleman Collins, MS, RDN, LD
Welcome!

This webinar is powered by Egg Nutrition Center.
Today’s Presenter

Sherry Coleman Collins, MS, RDN, LD
Disclosure

- Consultant: National Peanut Board
- Consultant: Mission Mighty Me
- President/CEO: Southern Fried Nutrition Services, LLC
Objectives

- Explain why there have been changes to the recommendations for feeding infants potential allergens
- Utilize the latest research and evidence-based guidelines to recommend what potentially allergenic foods to incorporate into infant diets and when to incorporate those foods
- Provide practical recommendations and resources for clients, parents and caregivers to easily facilitate the early introduction of potential allergens
As we begin...

It’s not your fault.

“Do the best you can until you know better. Then when you know better, do better.”

Maya Angelou, Author
How Feeding Guidelines Have Changed

A 20 Year Review
AAP recommended avoiding the top allergens for 1, 2 or 3 years.

Rescinded guidance on avoidance, stating that the research doesn’t support avoidance as a way to prevent allergies, “more research is needed”

NIAID Guidelines for the Diagnosis and Management of Food Allergies

NIAID Addendum to the Guidelines

AAP Revised Report
The Effects of Early Nutritional Interventions on the Development of Atopic Disease in Infants and Children
Revealing Research

Observational to Double-blind Randomized Controlled Trials
A Remarkable Difference
Learning Early About Peanut allergy (LEAP)

• 640 infants at high-risk for peanut allergy d/t egg allergy or mod/severe eczema
• Half ate peanut foods at 4-11 months
• Half avoided
• Up to 86% reduction in peanut allergy at the end of 5 years
• Early introduction is safe and effective

Dual Exposure Hypothesis

FIG 1. Integration of the vitamin D deficiency, hygiene, and dual-allergen exposure hypotheses. Sufficient levels of vitamin D, a diverse microbiota, and oral allergen exposure support the development of tolerance. Conversely, allergic sensitization is promoted through cutaneous exposure, reduced diversity of the microbiota, and vitamin D deficiency. Diminished microbial diversity and vitamin D deficiency are thought to interrupt the regulatory mechanisms of oral tolerance, with the latter also contributing to decreased epithelial barrier function. GI, Gastrointestinal; T-reg, regulatory T cells. Graphic modified from Lack. Copyright © 2008 Elsevier. Reprinted with permission.
PETIT Trial

• Two step introduction of egg to 147 high-risk (eczema) infants
• Used heated egg white powder
  • 50mg/day at 6 months-9 months
  • 250mg/day 9 months-12 months
• Stopped early because it so successfully reduced egg allergy
Enquiring About Tolerance (EAT)

Recruited breastfed infants for early intro of 6 foods
  • Milk
  • Egg
  • Peanut
  • Wheat
  • Sesame
  • Fish

Outcomes:
  • Difficult to adhere to protocol
  • Decreased food allergies overall in the EAT babies
  • Decreased peanut and egg allergy in per protocol when 2g protein per week or more each was eaten

http://www.jacionline.org/article/S0091-6749(16)00135-4/abstract
Child Study

Study design

- N=2669 birth through 3 years
- Population cohort study
- Compared rates of sensitization to peanut, egg, and milk among those who ate these foods early to those who ate them later

Results

“General-population infants introduced to peanut after age 12 months were more likely to have sensitization and probable clinical allergy to peanut at 3 years.”
Guidelines Take Shape

Putting Research Into Clinical Recommendations
### NIAID Addendum Guidelines

#### Group 1 (High-risk)
**Infants with egg allergy or severe to moderate eczema or both**
- Discuss with pediatrician or allergist before introducing peanut foods
- Skin prick testing may be recommended
- Depending on SPT results, first oral intro may happen at doc’s office
- Intro recommended at 4-6 months
- Children should eat 2g peanut protein three times per week thereafter

#### Group 2 (Moderate-risk)
**Infants with mild eczema**
- Not necessary to discuss with pediatrician first, but may
- Should introduce at home
- At or after 6 months

#### Group 3 (Low-risk)
**Infants without risk factors**
- Introduce at home at or after 6 months
- Age-appropriate and in accordance with family preferences and cultural practices

AAP Guidance

There is no evidence that delaying the introduction of allergenic foods, including peanuts, eggs, and fish, beyond 4-6 months prevents atopic disease.

There is now evidence that the early introduction of infant-safe forms of peanuts reduces the risk for peanut allergies. Data are less clear for timing of introduction of eggs.

The new recommendations for the prevention of peanut allergy are based largely on the LEAP trial and are endorsed by the AAP.
• Guidelines do not support limiting mother’s diet during pregnancy or breastfeeding to reduce the risk of food allergies.

• Research shows that introducing allergens and complementary foods, including potential allergens, does not reduce duration of breastfeeding.

• “There is no protective benefit from the use of hydrolyzed formula in the first year of life against food allergy or food sensitization.” – Fleischer, et al.
New Practice Parameters AAAAI, ACAAI, CSACI

• Introduce peanut foods and egg without screening regardless of risk at around 6 months, but not before 4 months
• Do not delay other potentially allergenic foods once complementary feeding starts
• Once successfully introduced, keep allergens in regular rotation along with a diverse diet

• No protection against food allergy from hydrolyzed formula
• Breastfeeding recommended, but evidence does not show protective against food allergies

Translating to Public Health Advice

Dietary Guidelines for Americans 2020-2025
Dietary Guidelines for Americans 2020-2025
Here’s what the DGAs say about introducing allergens...

Potentially allergenic foods (e.g., peanuts, egg, cow milk products, tree nuts, wheat, crustacean shellfish, fish, and soy) should be introduced when other complementary foods are introduced to an infant’s diet. **Introducing peanut-containing foods in the first year reduces the risk that an infant will develop a food allergy to peanuts.**
For Infants at **High Risk** of Peanut Allergy, Introduce Peanut-Containing Foods at Age 4 to 6 Months

- Severe eczema
- Egg allergy

Check with healthcare provider before introducing peanut foods.
The Role of the RDN/NDTR

Translating the Science of Food Allergy Prevention
Empower Parents for Confident Feeding

- Meet new parents where they are!
- They may be overwhelmed
- Food allergies can be scary
- Assess the baby’s risk
- Work with parents
- Remember: Allergens EARLY and OFTEN
APPENDIX D. INSTRUCTIONS FOR HOME FEEDING OF PEANUT PROTEIN FOR INFANTS AT LOW RISK OF AN ALLERGIC REACTION TO PEANUT

These instructions for home feeding of peanut protein are provided by your doctor. You should discuss any questions that you have with your doctor before starting. These instructions are meant for feeding infants who have severe eczema or egg allergy and were allergy tested (blood test, skin test, or both) with results that your doctor considers safe for you to introduce peanut protein at home (low risk of allergy).

General Instructions
1. Feed your infant only when he or she is healthy; do not do the feeding if he or she has a cold, vomiting, diarrhea, or other illness.
2. Give the first peanut feeding at home and not at a day care facility or restaurant.
3. Make sure at least 1 adult will be able to focus all of his or her attention on the infant, without distractions from other children or household activities.
4. Make sure that you will be able to spend at least 2 hours with your infant after the feeding to watch for any signs of an allergic reaction.

Feeding Your Infant
1. Prepare a full portion of one of the peanut-containing foods from the recipe options below.
2. Offer your infant a small part of the peanut serving on the tip of a spoon.
3. Wait 10 minutes.
4. If there is no allergic reaction after this small taste, then slowly give the remainder of the peanut-containing food at the infant's usual eating speed.

How to: Excellent tips for safer feeding at home

• Start with a healthy baby
• Feed at home, not at daycare or restaurant
• Make sure at least 1 adult can focus fully on baby for at least 2 hours
• Prepare a full portion, but start with just a taste, wait 10 minutes
• If no reaction, proceed to feed full portion or until baby is no longer interested in eating
Prepare infant-safe and appropriate food

- Use the NIAID tools for early introduction of peanut foods AND...
  - cultural sensitivity
  - family preferences
  - families with food allergies

Four Recipe Options, Each Containing Approximately 2g of Peanut Protein

**Option 1:** Banana (Chen, Israel), 21 pieces (approximately 2 g of peanut protein)

- Note: Banana is named because it was the product used in the EGG trial and therefore has proven efficacy and safety. Other peanut puff products with similar peanut protein content can be substituted.
  - For infants less than 7 months of age, cut the Banana into 3-6 teaspoons of water.
  - For older infants who can manage digestible textures, softened Banana can be used. If digestible textures are not yet part of the infant’s diet, softened banana should be provided.

**Option 2:** Thinned smooth peanut butter; 2 teaspoons (9–10 g of peanut butter; approximately 2 g of peanut protein)

- a. Measure 2 teaspoons of peanut butter and slowly add
  - 2 to 3 teaspoons of hot water.
  - b. Stir until peanut butter is dissolved, thinned, and well blended.
  - c. Let cool.
  - d. Increase water amount if necessary (or add previously tolerated infant cereal) to achieve consistency comfortable for the infant.

**Option 3:** Smooth peanut butter puree, 2 teaspoons (8–10 g of peanut butter; approximately 2 g of peanut protein)

- a. Measure 2 teaspoons of peanut butter
  - b. Add 2 to 3 tablespoons of pureed tolerated fruit or vegetables to peanut butter. You can increase or reduce volume of puree to achieve desired consistency.

**Option 4:** Peanut flour and peanut butter powder, 2 teaspoons (16 g of peanut flour or 4 g of peanut butter powder; approximately 2 g of peanut protein)

- a. Measure 2 teaspoons of peanut flour or peanut butter powder.
  - b. Add approximately 2 tablespoons (0.5–1 teaspoon) of pureed tolerated fruit or vegetables to flour or powder. You can increase or reduce volume of puree to achieve desired consistency.
Prepare Simple Recipes

Did you know peanut foods and eggs can be introduced to babies early to help prevent potential allergies? Recent guidelines from the National Institutes of Allergy and Infectious Disease identify the risk factors for developing peanut allergy as having severe eczema or existing egg allergy. For babies with one or both of these conditions, talk to your healthcare professional before introducing peanut foods. Babies without severe eczema or egg allergy can introduce peanut foods and eggs starting around 6 months, or whenever baby is developmentally ready. Two teaspoons of peanut butter thinned with breast milk, formula or water stirred into infant cereal is a great way to introduce peanuts foods. Scrambled eggs or egg yolk mashed into infant cereal is a great way to introduce egg. Once introduced, keep peanut foods and eggs in the diet often, about three times per week. For other potential allergens introduction should begin at or after six months of age and within the first year of life. Visit PreventPeanutAllergies.org for more information.

Once your little one has successfully enjoyed peanut and egg separately, you can try all sorts of fun combinations. Give these fun recipes a try and enjoy the funny faces and smiles!

**EGG PEANUT BUTTER MUFFINS**

**Suggested age: Self-feeding infants 9+ months**

**Ingredients:**
- ½ cup powdered peanut butter (alg)
- ½ cup whole wheat flour
- ⅔ cup all-purpose flour
- ⅓ cup brown sugar
- 1 tablespoon baking soda
- ½ teaspoon cinnamon
- 1 egg
- 1 tablespoon maple syrup

**Directions:**
Preheat the oven to 350 degrees. Spray mini muffin pan with cooking spray. Mix dry ingredients in a medium bowl. In a small bowl, mix the wet ingredients. Add the wet ingredients to the dry ingredients and mix just until no more flour is visible. Divide between 12 mini muffin tin holes. Bake for 10-15 minutes or until a toothpick inserted into the middle of a muffin comes out clean.

**Nutrition information per serving:**
- Calories: 247
- Carbohydrate: 27 g
- Protein: 8 g
- Fat: 15 g
- Sodium: 383 mg

**NUTRITION INFORMATION PER SERVING:**

**BUTTER OATMEAL WITH EGG**

**Suggested age: 6+ months**

**Ingredients:**
- 1 egg yolk
- 1 tablespoon water (or more as needed)
- 2 teaspoons peanut butter

**Directions:**
Mix ingredients in a small bowl. Serve with rice, pasta or an apple sauce.

**Nutrition information per serving:**
- Calories: 150
- Carbohydrate: 21 g
- Protein: 5 g
- Fat: 7 g
- Sodium: 113 mg

**BUTTER SWEET POTATO CUSTARD**

**Suggested age: 6+ months**

**Ingredients:**
- ¼ cup sweet potato, baked, peeled and mashed with 1 teaspoon peanut butter

**Directions:**
Bake in the oven at 350 degrees until a toothpick inserted into the center comes out clean.

**Nutrition information per serving:**
- Calories: 180
- Carbohydrate: 26 g
- Protein: 3 g
- Fat: 16 g
- Sodium: 34 mg

https://www.nationalpeanutboard.org/content/1126/files/PeanutEggRecipes-08.31.20.pdf
Convenience Products for Early Introduction

Peanut Purees (ready-to-feed)

- Happy Family Organics Nutty Blends
- Square Baby
- MyPeanut
- Inspired Start
Peanut Puffs & Bars (supports self-feeding, convenient)

- Bamba
- Mission MightyMe
- Gerber BabyPops
- Earth’s Best Organic Puffs
- Puffworks Baby
- Plum Organics Mighty Nut Bar
Allergen Powders (offers a prescribed approach)

- Lil Mixins
- Ready, Set, Food
- SpoonfulOne
Advocate for Early Introduction

• As many as 2/3 of pediatricians are not implementing the guidelines fully
• Parents and other HCP need more information and PCP is #1
Proper Diagnosis: Lay the Groundwork

- Know and teach families s/s recognition
- Take a diet history to uncover possible food allergy
- Understand limitations of blood and skin tests
Severe eczema  
or  
egg allergy  
or  
both

Peanut sIgE*

< 0.35
Risk of reaction low (more than 90% will have (-) SPT to peanut).
- Options:
  a) Introduce peanut at home
  b) Supervised feeding in the office (based on provider/parental preference)

≥ 0.35
Refer to specialist for consultation/SPT protocol

Peanut skin prick test (SPT)

0–2 mm
Risk of reaction low (95% will not have peanut allergy).
- Options:
  a) Introduce peanut at home
  b) Supervised feeding in the office (based on provider/parental preference)

3–7 mm
Risk of reaction varies from moderate to high.
- Options:
  a) Supervised feeding in the office
  b) Graded oral food challenge in a specialized facility

≥ 8 mm
Infant probably allergic to peanut.
Continue evaluation and management by a specialist.

*To minimize a delay in peanut introduction for children who may test negative, testing for peanut sIgE may be the preferred initial approach in certain healthcare settings. Food allergen panel testing or the addition of sIgE testing for foods other than peanut is not recommended due to poor positive predictive value.
Resources

Where to Find More Information
You Can Help Reduce the Risk of Food Allergies for Your Baby
INTRODUCING PEANUTS TO YOUR INFANT EARLY CAN HELP PREVENT A PEANUT ALLERGY

WE ARE HERE TO HELP YOU TAKE THE FIRST STEP
5 EASY WAYS TO INTRODUCE PEANUT FOODS TO YOUR INFANT

1. MIX WITH WATER, FORMULA OR BREAST MILK
   Thin 2 tsp. of peanut butter with 2-3 tsp. hot water, formula or breast milk. Allow to cool before serving.

2. MIX WITH FOOD
   Blend 2 tsp. of peanut butter into 2-3 Tbsp. of foods like infant cereal, yogurt (if already tolerating dairy), pureed chicken or tofu.

3. MIX WITH PRODUCE
   Stir 2 tsp. of powdered peanut butter into 2 Tbsp. of previously tolerated pureed fruits or vegetables.

4. PEANUT SNACKS
   Give your baby a peanut-containing teething food, such as peanut puffs.

5. TEETHING BISCUITS
   Teething infants who are older and self-feeding may enjoy homemade peanut butter teething biscuits. Find a recipe for teething biscuits at nationalpeanutboard.org

Remember:
The recommended way to introduce baby-friendly peanut foods depends on each child’s individual risk factors. Depending on your child’s risk, peanut foods should be introduced according to NIAID guidelines after they’ve already started other solid foods. Whole nuts should not be given to children under 5 years of age. Peanut butter directly from a spoon or in lumps/lobbys should not be given to children less than 4 years of age. This content is not intended to be a substitute for professional medical advice, diagnosis or treatment. Always seek the advice of your pediatrician.

preventpeanutallergies.org
NIP ALLERGIES IN THE Bub

TO HELP PREVENT FOOD ALLERGY, GIVE YOUR BABY THE COMMON ALLERGY CAUSING FOODS BEFORE THEY TURN ONE
In Summary

• Commonly allergenic foods (especially peanut foods and egg) should be fed to babies starting around 6 months, but not before 4 months, when other solid foods begin.
• For high-risk infants, consider discussing with pediatrician first, but do not delay.
• Remember: Early and Often; once started, keep allergens in the diet regularly.
• RDNs can plan an important part in helping parents understand risk and feed babies with confidence.


• Fleischer, D, et al. A Consensus Approach to the Primary Prevention of Food Allergy Through Nutrition: Guidance from the American Academy of Allergy, Asthma, and Immunology; American College of Allergy, Asthma, and Immunology; and the Canadian Society for Allergy and Clinical Immunology. J Allergy Clin Immunol: In Practice. 2021;9:22-43.


Q & A

Please type your questions into the CHAT box.
THANK YOU