

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



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



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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

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

Maya Angelou,
Author



As we begin...

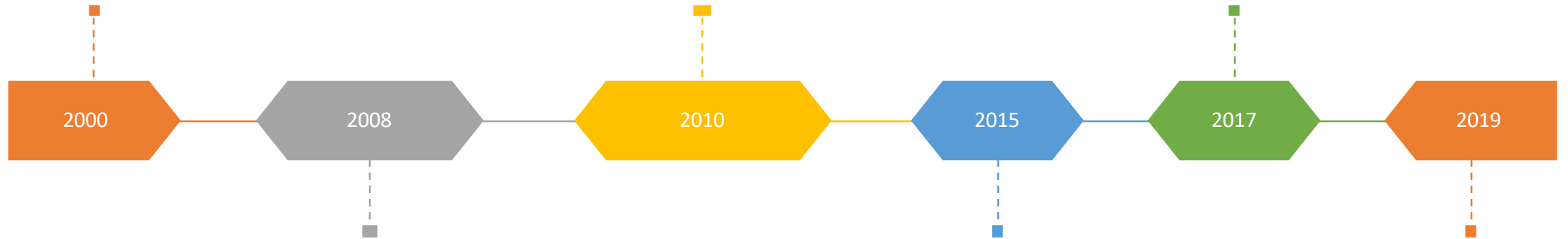
It's not your fault.

How Feeding Guidelines Have Changed

A 20 Year Review

Quick History of Feeding Guidelines

AAP
recommended
avoiding the
top allergens
for 1, 2 or 3
years



NIAID Guidelines for
the Diagnosis and
Management of Food
Allergies

NIAID
Addendum to
the Guidelines

Rescinded guidance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

Consensus
Report

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

J ALLERGY CLIN IMMUNOL
VOLUME 141, NUMBER 1

DU TOIT ET AL 31

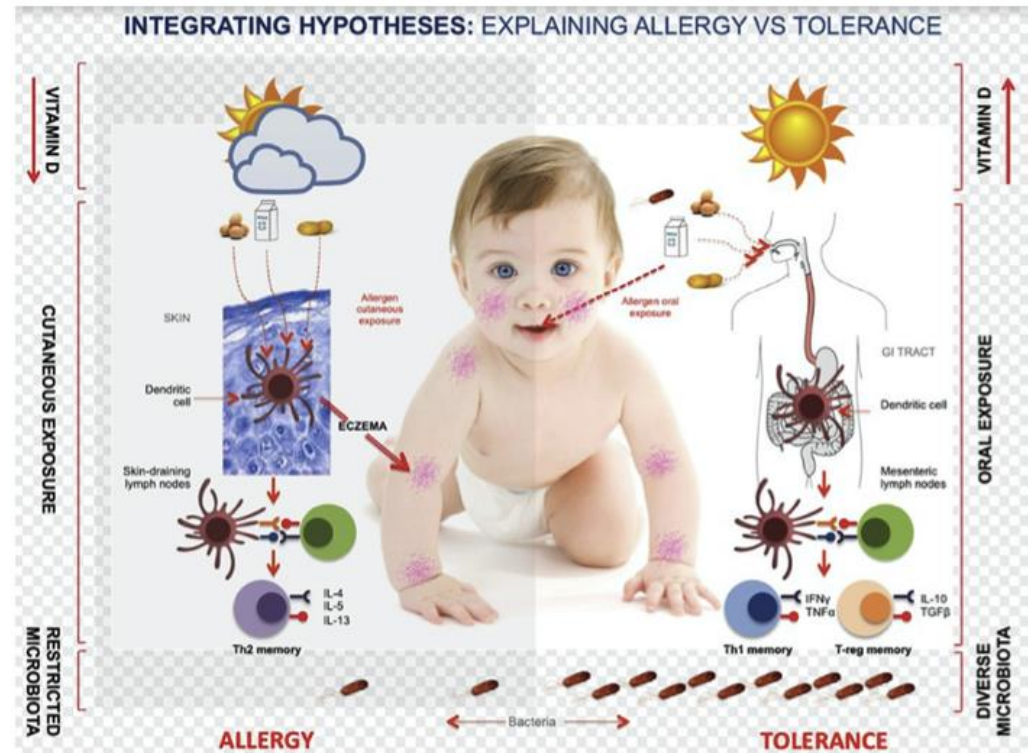


FIG 1. Integration of the vitamin D deficiency, hygiene, and dual-allergen exposure hypotheses. Sufficient levels of vitamin D, a diverse microbiota, and oral allergen exposure support the development of tolerance. Conversely, allergic sensitization is promoted through cutaneous exposure, reduced diversity 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 epidermal barrier function. *GI*, Gastrointestinal; *T-reg*, regulatory T cells. Graphic modified from Lack.⁴ 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 9months-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



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.

Breastfeeding & Formula Feeding

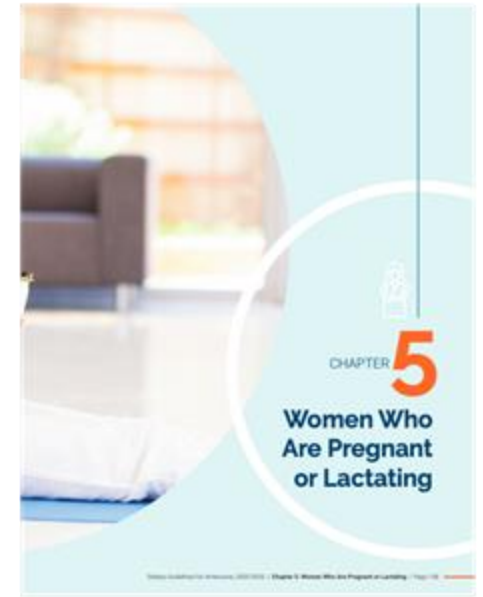
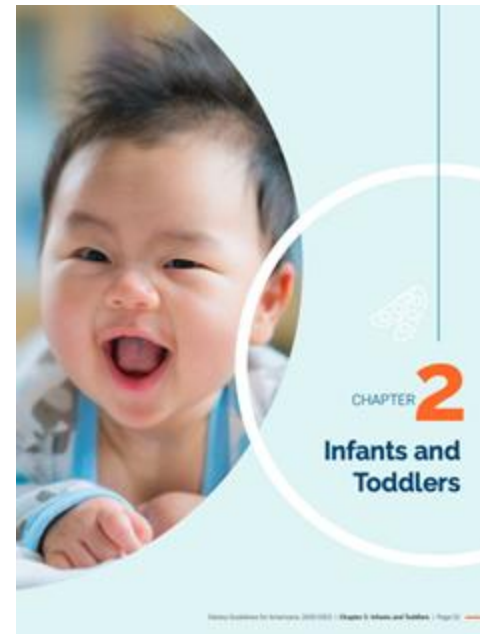
- Guidelines do not support limiting mother's diet during pregnancy or breastfeeding to reduce the risk of food allergies.
- Research shows that introducing allergens and complementary foods, including potential allergens, does not reduce duration of breastfeeding.
- *"There is no protective benefit 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.***

Introduce Infants to Potentially Allergenic Foods Along With Other Complementary Foods

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. Cow milk, as a beverage, should be introduced at age 12 months or later (see "Establish a Healthy Beverage Pattern"). There is no evidence that delaying introduction of allergenic foods, beyond when other complementary foods are introduced, helps to prevent food allergy. For more information, see "For Infants at High Risk of Peanut Allergy, Introduce Peanut-Containing Foods at Age 4 to 6 Months."

BIRTH THROUGH 23 MONTHS



For Infants at High Risk of Peanut Allergy, Introduce Peanut-Containing Foods at Age 4 to 6 Months

If an infant has severe eczema, egg allergy, or both (conditions that increase the risk of peanut allergy), age-appropriate, peanut-containing foods should be introduced into the diet as early as age 4 to 6 months. This will reduce the risk of developing peanut allergy.

Caregivers should check with the infant's healthcare provider before feeding the infant peanut-containing foods. A blood test or skin prick may be recommended to determine whether peanut should be introduced to the infant, and, if so, the safest way to introduce it. More information is available in the Addendum Guidelines for the Prevention of Peanut Allergy in the United States at niaid.nih.gov/sites/default/files/addendum-peanut-allergy-prevention-guidelines.pdf.



And for high risk infants...

*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.



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The Role of the RDN/NDTR

Translating the Science
of Food Allergy
Prevention

Empower Parents for Confident Feeding



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- 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.

What are symptoms of an allergic reaction? What should I look for?

- Mild symptoms can include:
 - a new rash
 - or
 - a few hives around the mouth or face
- More severe symptoms can include any of the following alone or in combination:
 - lip swelling
 - vomiting
 - widespread hives (welts) over the body
 - face or tongue swelling
 - any difficulty breathing
 - wheeze
 - repetitive coughing
 - change in skin color (pale, blue)
 - sudden tiredness/lethargy/seeming limp

If you have any concerns about your infant's response to peanut, seek immediate medical attention/call 911.

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

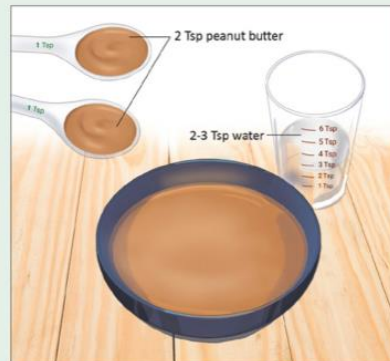
Note: Teaspoons and tablespoons are US measures (5 and 15 mL for a level teaspoon or tablespoon, respectively).



Option 1: Bamba (Osem, Israel), 21 pieces (approximately 2 g of peanut protein)

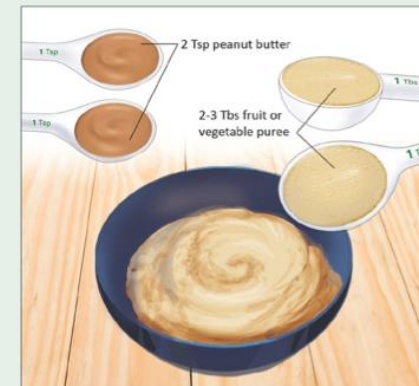
Note: Bamba is named because it was the product used in the LEAP trial and therefore has proven efficacy and safety. Other peanut puff products with similar peanut protein content can be substituted.

- For infants less than 7 months of age, soften the Bamba with 4 to 6 teaspoons of water.
- For older infants who can manage dissolvable textures, unmodified Bamba can be fed. If dissolvable textures are not yet part of the infant's diet, softened Bamba should be provided.



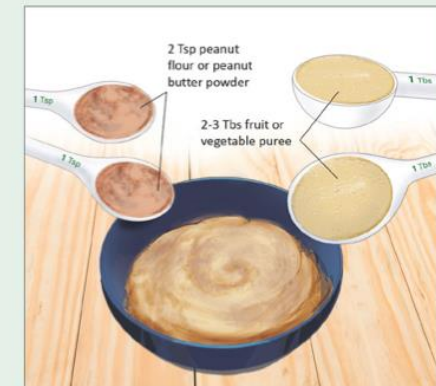
Option 2: Thinned smooth peanut butter, 2 teaspoons (9-10 g of peanut butter; approximately 2 g of peanut protein)

- Measure 2 teaspoons of peanut butter and slowly add 2 to 3 teaspoons of hot water.
- Stir until peanut butter is dissolved, thinned, and well blended.
- Let cool.
- 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 (9-10 g of peanut butter; approximately 2 g of peanut protein)

- Measure 2 teaspoons of peanut butter.
- 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 (4 g of peanut flour or 4 g of peanut butter powder; approximately 2 g of peanut protein)

Note: Peanut flour and peanut butter powder are 2 distinct products that can be interchanged because they have a very similar peanut protein content.

- Measure 2 teaspoons of peanut flour or peanut butter powder.
- Add approximately 2 tablespoons (6-7 teaspoons) 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

4 SIMPLE RECIPES TO INTRODUCE EGGS & PEANUT BUTTER TO INFANTS

All recipes by: Sherry Coleman Collins, MS, RDN, LD

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 or stirred into infant cereal is a great way to introduce peanut 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 mmm's!

EGGY PEANUT BUTTER MUFFINS

Suggested age: self-feeding infants 9+ months



Ingredients:

- ¼ cup powdered peanut butter (16g)
- ¼ cup whole wheat flour
- ¼ teaspoon baking powder
- ¼ teaspoon baking soda
- Pinch of cinnamon
- 1 egg plus 1 egg white (9.3g)
- ¼ cup well-mashed/pureed sweet potato or pumpkin puree
- 1 tablespoon maple syrup (optional)

Directions:

Preheat the oven to 350 degrees. Spray mini muffin pan with pan spray. Mix the 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 8 mini muffin tin holes. Bake for 12-15 minutes or until a toothpick inserted into the middle of a muffin comes out clean.

Note: Each muffin contains approximately 2g peanut protein and 1.2g egg protein

Nutrition information per serving:

Calories 35, Fat 0.5g, Trans fats 0g, Cholesterol 25mg, Carbohydrate 5g, Protein 3g, Fiber 1g, Sodium 55mg

PEANUT BUTTER EGG SCRAMBLE

Suggested age: 4-6 months+



Ingredients:

- 1 egg white
- 1 tablespoon water
- 2 teaspoons peanut butter
- Pan spray

Directions:

Preheat a small non-stick pan over medium-low heat. In a small bowl, scramble the egg white with the water and peanut butter. Spritz the pan with a bit of spray oil and then add the egg and peanut butter mixture. Cook until mixture is cooked through and soft-crumblly, with no liquid remaining, stirring occasionally.

Note: Contains approximately 2g peanut protein and 2g egg protein

Nutrition information per serving:

Calories 70, Fat 6g, Trans fats 0g, Cholesterol 0mg, Carbohydrate 3g, Protein 4g, Fiber 1g, Sodium 75mg

PEANUT BUTTER OATMEAL WITH EGG

Suggested age: 6+ months when modified for readiness



Ingredients:

- 1 tablespoon quick-cooking oats
- 4 tablespoons water (or more to adjust consistency as needed)
- 2 teaspoons peanut butter
- 1 egg yolk

Directions:

In a microwave-safe bowl, mix together oats and water and cook for 30 seconds on high. Add the peanut butter and egg yolk and stir until completely mixed. Cook an additional 30-40 seconds until the mixture is steaming and cooked through. Allow to cool before feeding baby. Add a tablespoon of breastmilk or formula to thin out if needed.

Note: Contains approximately 2g peanut protein and 2.7g egg protein

Nutrition information per serving:

Calories 70, Fat 6g, Trans Fats 0g, Cholesterol 0mg, Carbohydrate 3g, Protein 4g, Fiber 1g, Sodium 75mg

PEANUT BUTTER SWEET POTATO SOUFFLÉ

Suggested age: 4-6 months+ when modified for readiness



Ingredients:

- ¼ cup sweet potato, baked, peeled and mashed well
- 2 teaspoons peanut butter
- 1 egg yolk

Directions:

Preheat the oven to 350 degrees. Prepare a small oven-safe bowl or dish, such as a ramekin, by spraying with oil. Mix all ingredients together and pour into the ramekin. Bake for 20 minutes, or until a thermometer measures 165 degrees. Allow to cool before feeding to baby. Add a little breastmilk, formula or water to thin or soften as needed.

Note: Contains approximately 2g peanut protein and 2.7g egg protein

Nutrition information per serving:

Calories 170, Fat 10g, Trans fats: 0g, Cholesterol 195mg, Carbohydrate 13g, Protein 6g, Fiber 2g, Sodium 70mg

Recipes photos: Kenan Hill

Peanut and egg are the two common allergens with the most research to support introducing them to infants before their first birthday. Experts agree that the evidence does not support withholding allergens as a means to prevent food allergies.

National Peanut Board

ENC EGG NUTRITION CENTER

<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



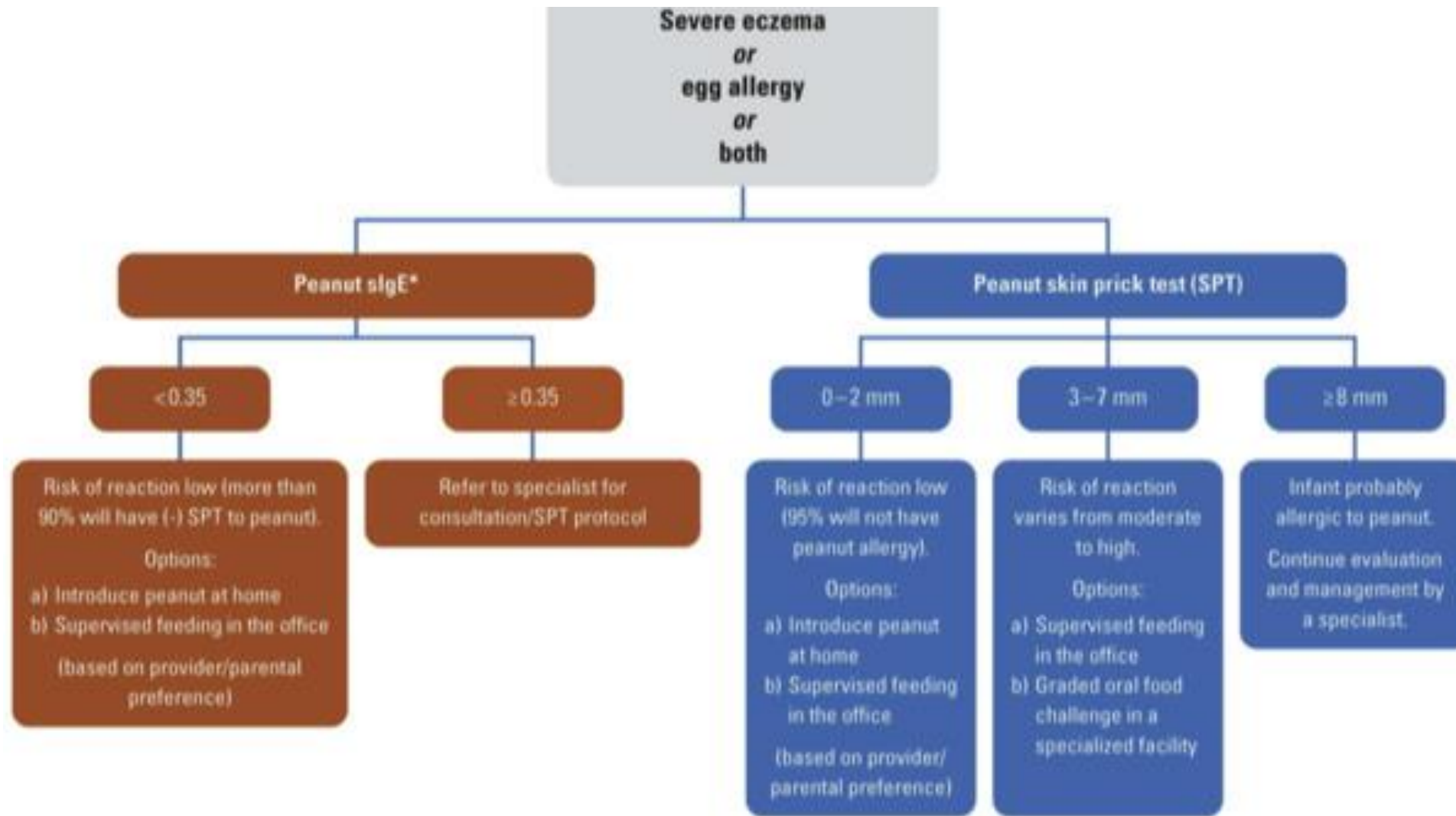
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- As many as 2/3 of pediatricians are not implementing the guidelines fully
- Parents and other HCP need more information and PCP is #1

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





*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



[Introducing Solid Foods](#)

[Assess the Risk](#)

[FAQs](#)

You Can Help Reduce
the Risk of Food
Allergies for Your
Baby



Enter your name..

Enter email...

Enter zip code...

[JOIN NOW](#)



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

preventpeanutallergies.org



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/dollops 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.



NIP ALLERGIES IN THE *Bub*

TO HELP PREVENT
FOOD ALLERGY,
GIVE YOUR BABY
THE COMMON
ALLERGY CAUSING
FOODS

*before they
turn one*



HEALTH PROFESSIONALS



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

References

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Q & A

*Please type your questions
into the CHAT box.*



THANK YOU

