A review of the 2025 food allergy literature: What can new evidence do for my practice?

Elissa M Abrams MD MPH FRCPC FAAAAI

Learning Objectives

- Review updated food allergy literature that is evidence changing for:
  - Food allergy prevention
  - Risk perception
  - Social determinants of health
  - Cow’s milk allergy
  - Non-IgE mediated food allergy

OUTLINE

BROAD THEMES

Prevention

BROAD THEMES

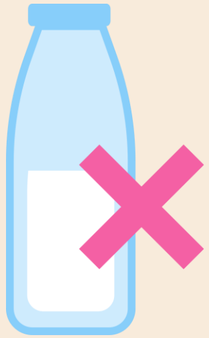
Risk

BROAD THEMES

Social determinants

SOME SPECIFICS

Cows milk allergy



SOME SPECIFICS

Non-IgE mediated food allergy

Prevention: Why this Matters

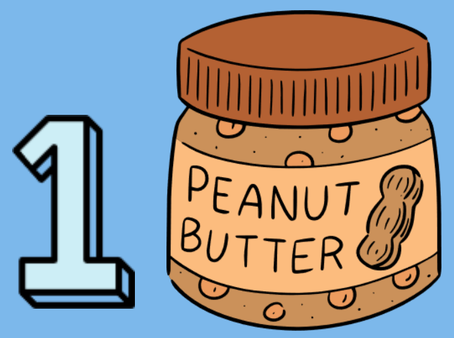
Evidence regarding early food introduction

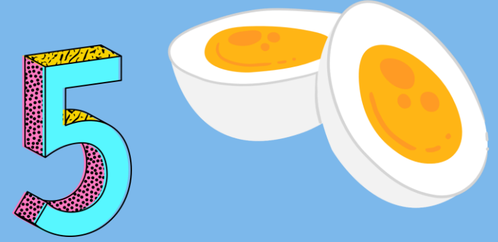
ORIGINAL ARTICLE

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

George Du Toit, M.B., B.Ch., Graham Roberts, D.M., Peter H. Sayre, M.D., Ph.D., Henry T. Bahnson, M.P.H., Suzana Radulovic, M.D., Alexandra F. Santos, M.D., Helen A. Brough, M.B., B.S., Deborah Phippard, Ph.D., Monica Basting, M.A., Mary Feeney, M.Sc., R.D., Victor Turcanu, M.D., Ph.D., Michelle L. Sever, M.S.P.H., Ph.D., et al., for the LEAP Study Team*

Prevention RCTs





Food Allergy Prevention (US)

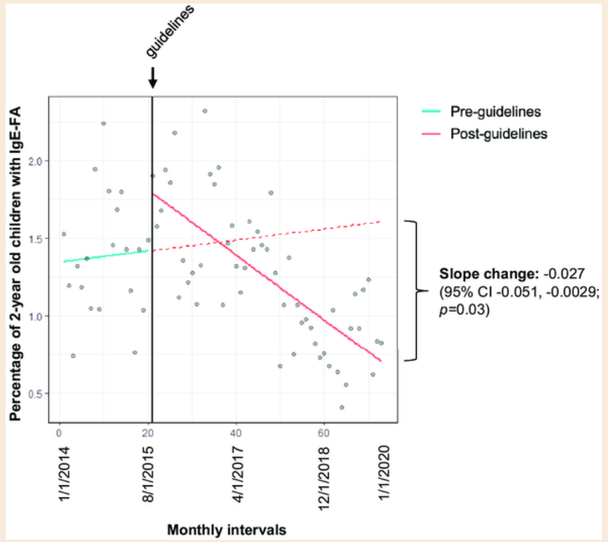
Guidelines for Early Food Introduction and Patterns of Food Allergy

Stanislaw J. Gabryszewski, MD, PhD,[1,2,3] Jesse Dudley, MS,[2] Jennifer A. Faerber, PhD,[2] Robert W. Grundmeier, MD,[2] Alexander G. Fiks, MD, MSCE,[2,4] Jonathan M. Spergel, MD, PhD,[1,3] David A. Hill, MD, PhD[1,3]

Using electronic health record data from defined preguidelines, postguidelines, and postaddendum guidelines cohorts (cohort entry during September 1, 2012, to August 31, 2014; September 1, 2015, to August 31, 2017; and February 1, 2017, to January 31, 2019, respectively)

01 Incidence and risk of peanut allergy reduced (hazard ratio 0.65)

02 Incidence and risk of any food allergy reduced (hazard ratio 0.69)



We detected decreased rates of peanut or any IgE-FA in the period following the publication of early introduction guidelines and addendum guidelines. Our results are supportive of the intended effect of these landmark public health recommendations.

How do we explain this? HealthNuts and EarlyNuts

Introduced to peanut before 12 months:

21.6% (2007-2011) → 85.6% (2017-2018)

Peanut allergy prevalence:

3.1% (2007-2011) → 2.6% (2017-2018)

"The high prevalence of peanut allergy ...despite early peanut introduction, suggests an important contribution of other early life environmental factors. An increase in less-researched environmental risk factors, potentially interacting with genetic susceptibility, could have masked the protective association with earlier peanut introduction."

SORIANO VX, PETERS RL, MORENO-BETANCUR MM ET AL. JAMA 2022;328: 48-56

Is it early introduction, regular ingestion, or both?

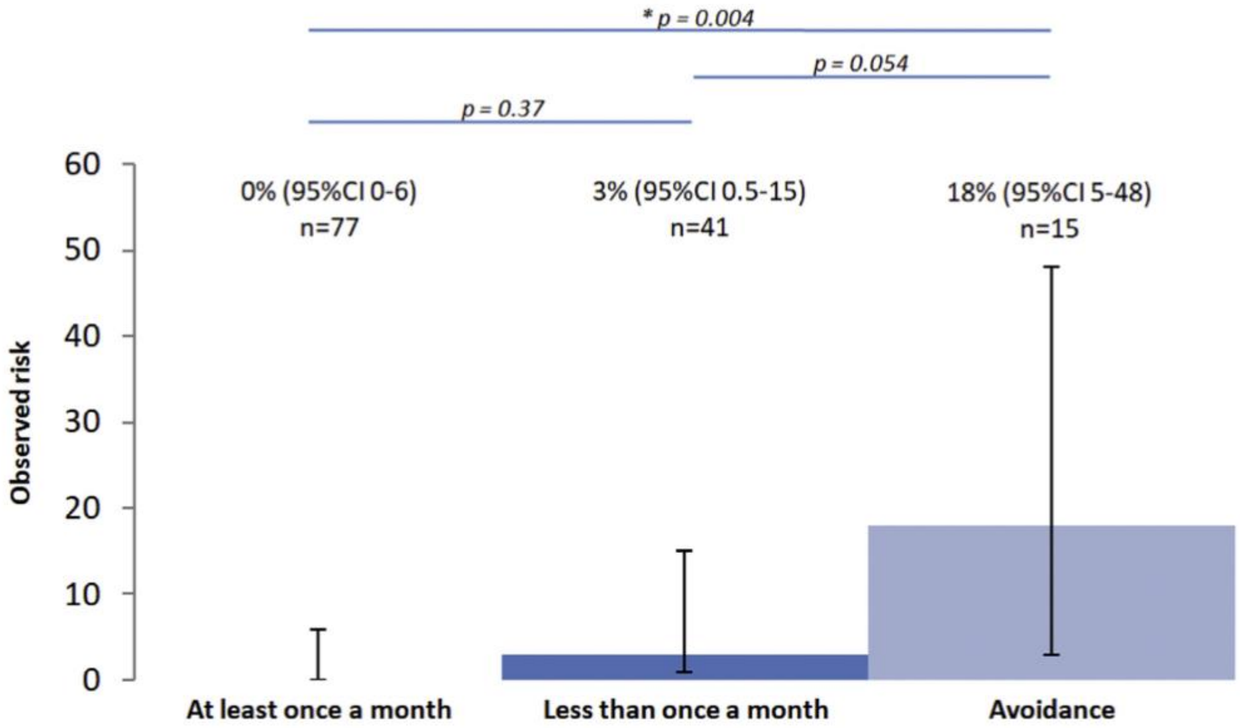


FIGURE 1. Observed risk of developing allergy to peanut based on consumption habits. *P* values were determined by Fisher exact test.

PAQUIN M, PARADIS L, GRAHAM F ET AL. J ALLERGY CLIN IMMUNOL PRACT 2021;9: 539-41

POSITION ARTICLE AND GUIDELINES Open Access

Early introduction is not enough: CSACI statement on the importance of ongoing regular ingestion as a means of food allergy prevention

Elissa M. Abrams[1,2*], Moshe Ben-Shoshan[3], Jennifer L. P. Protudjer[4,5,6,7,8], Elana Lavine[9,10] and Edmond S. Chan[11]

01 REGULAR INGESTION MULTIPLE TIMES PER MONTH IS LIKELY TO BE USEFUL

Both early introduction and regular ingestion of age-appropriate amounts and textures of common allergens multiple times per month (with a goal of at least once each week) are very likely to be useful to establish and maintain tolerance

02 OCCASIONAL OR SINGLE EXPOSURES COULD BE DETRIMENTAL

Once introduced, current evidence suggests that a single exposure or occasional exposures could be detrimental and result in increased risk of sensitization and development of food allergy

03 IF REGULAR INGESTION IS NOT FEASIBLE, AVOIDANCE MAY BE PREFERRABLE

If an allergen is not a common part of the family's diet, and regular ingestion is not feasible for that family, avoidance may be preferable to intermittent ingestion although further research is required

04 THE IDEAL AMOUNT AND FREQUENCY IS NOT KNOWN

The ideal amount and frequency of regular ingestion remains unknown, but the above recommendation is based on a balance of evidence and practicality. A duration of 5 years appears to be enough to maintain tolerance to peanut, and other foods may require similar exposures

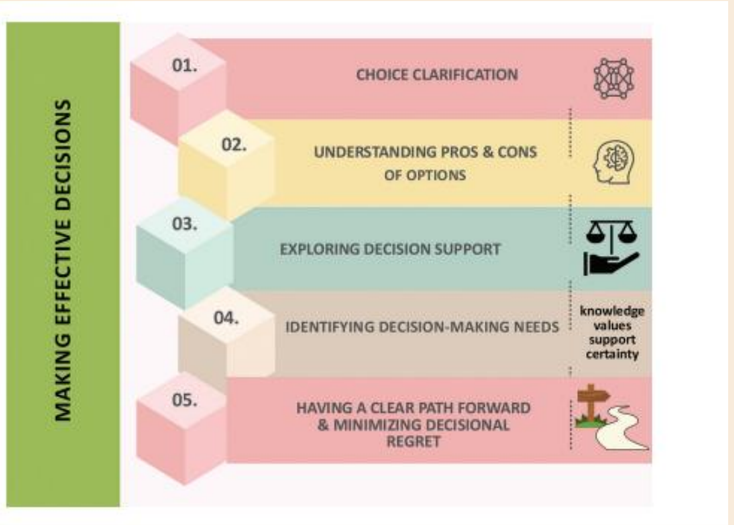
Canadian Society of Allergy and Clinical Immunology

Société canadienne d'allergie et d'immunologie clinique

Risk: Why This Matters

Food allergy thresholds, context, and balance in 2025

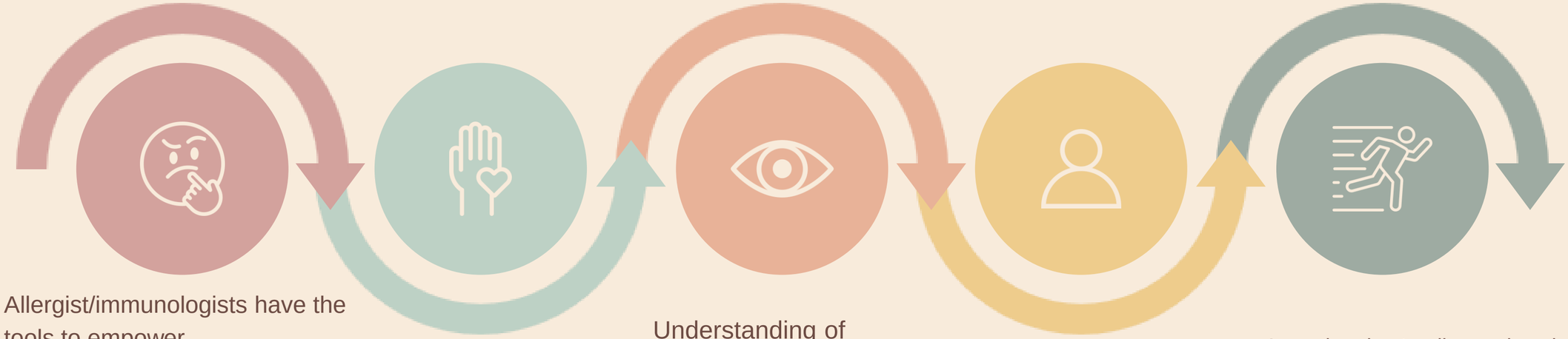
Marcus S. Shaker, M.D., M.S.,[1,2] Jason Sanders, D.O.,[3] and Aikaterini Anagnostou, M.D., Ph.D.[4]



Risk Understanding

Accurate understanding of risk is first step

Thresholds and reaction severity are different constructs



Allergist/immunologists have the tools to empower patients to live their lives fully and to more completely embrace food freedom.

Understanding of thresholds is second step

A good understanding and evaluation of food allergy thresholds may empower individuals with food allergy and have the potential to improve quality of life

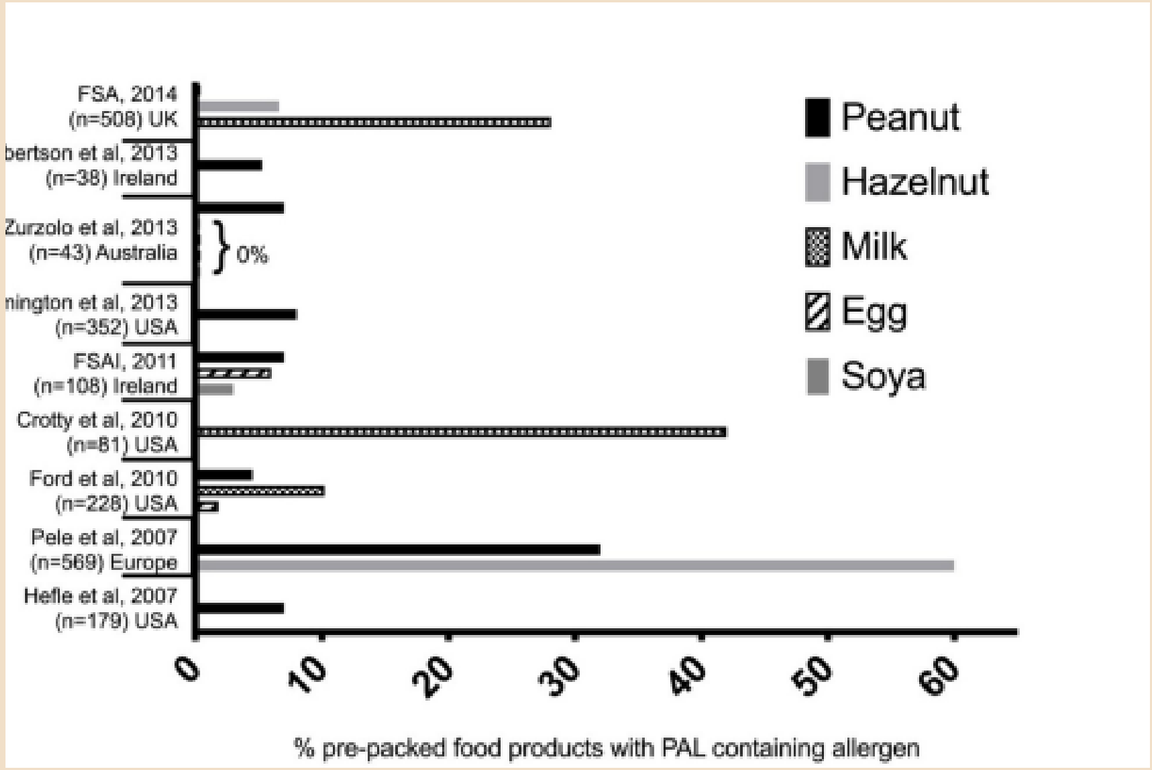
OC-JFAJ250002 27..32

Precautionary Labeling

REVIEW Open Access

Time to ACT-UP: Update on precautionary allergen labelling (PAL)

Paul J. Turner[a], Antonio Bognanni[b,c,d], Stefania Arasi[e], Ignacio J. Ansotegui[f], Sabine Schnadt[g], Sébastien La Vieille[h,i], Jonathan O'B. Hourihane[j,k], Torsten Zuberbier[l], Philippe Eigenmann[m], Motohiro Ebisawa[n], Mario Morais-Almeida[o], Julie Barnett[p], Bryan Martin[q], Linda Monaci[r], Graham Roberts[s], Gary Wong[t], Ruchi Gupta[u,v], Sophia Tsabouri[w], Clare Mills[x], Simon Brooke-Taylor[y], Joan Bartra[z,aa], Michael Levin[ab], Marion Groetch[ac], Luciana Tanno[ad], Elham Hossny[ae], Barbara Ballmer Weber[af], Vincenzo Fierro[e], Ben Remington[ag,ah], Jennifer Gerdts[ai], M. Hazel Gowland[aj], Derek Chu[ak,al], Marjan Van Ravenhorst[am], Jennifer Koplin[an,ao] and Alessandro Fiocchi[e*], on behalf of the World Allergy Organization Consensus on the Use of PAL (ACT-UP!) Working Group



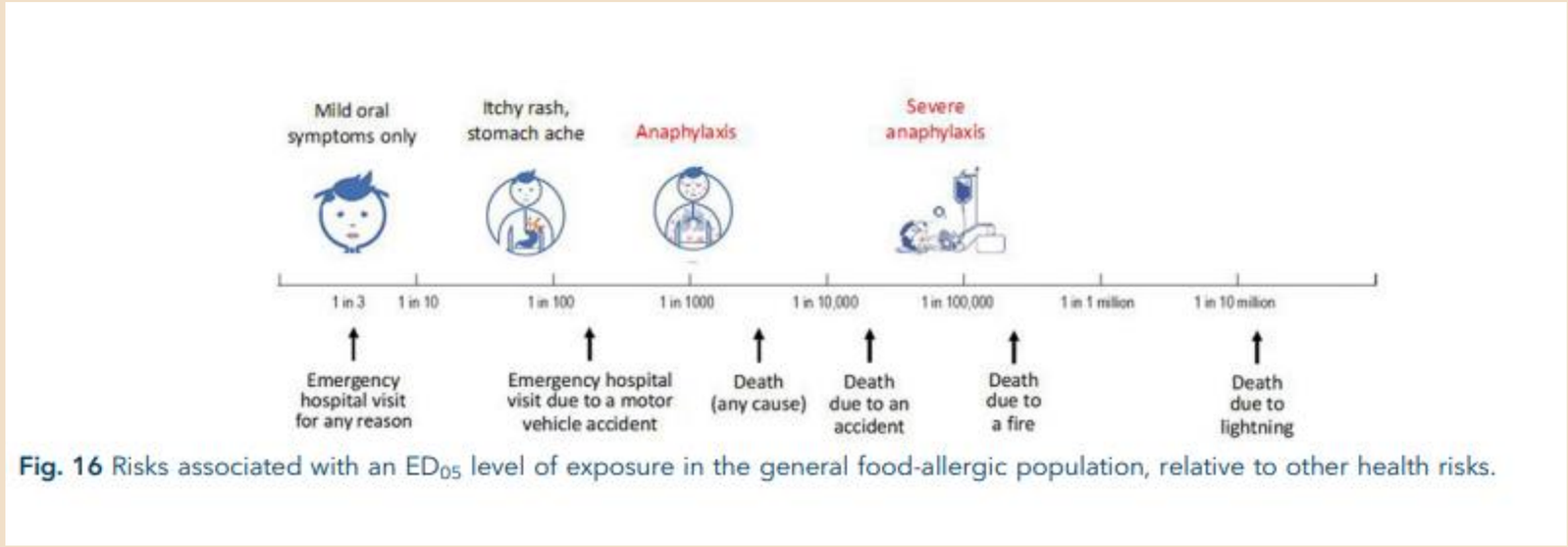


Fig. 16 Risks associated with an ED_{05} level of exposure in the general food-allergic population, relative to other health risks.

Precautionary Labeling

Current precautionary labeling not linked to actual risk

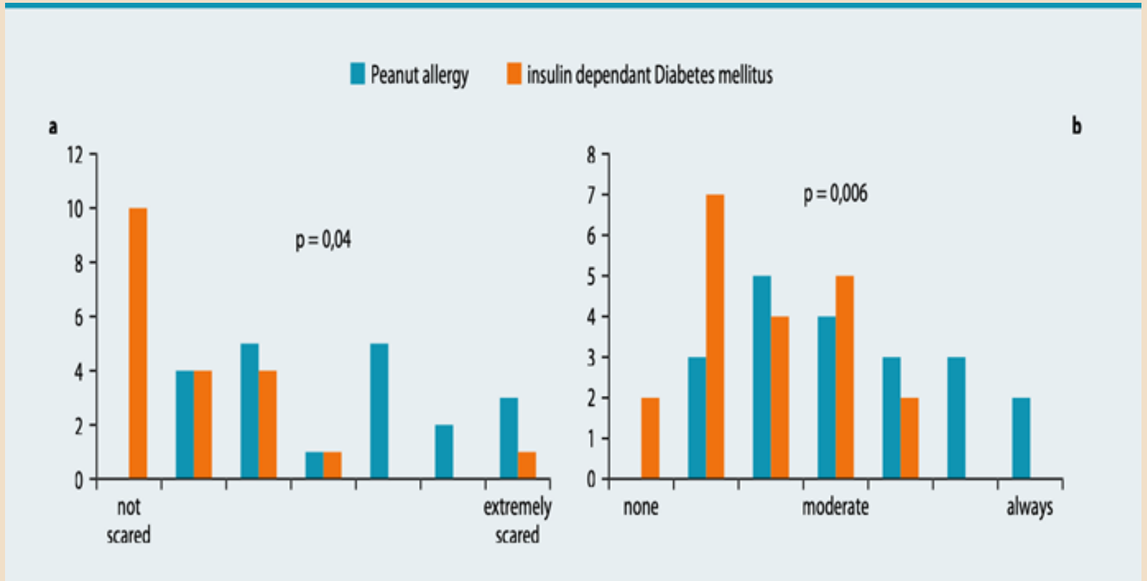
There are ED01 and ED05 levels for many common allergens (but it’s not clear that ED01>ED05 for reaction severity)

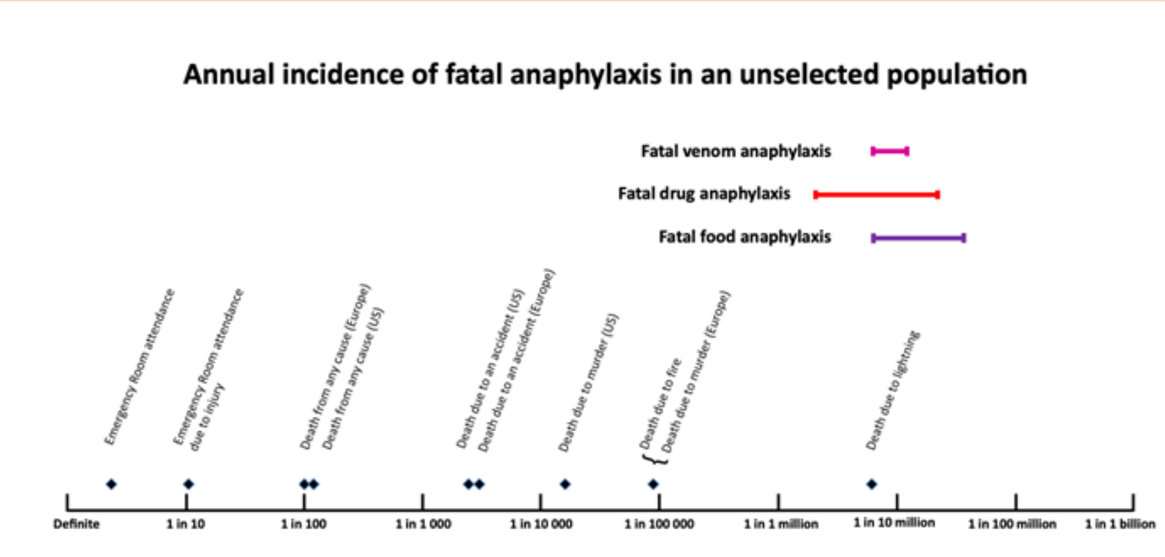
Further work is ongoing

There is likely unnecessary avoidance

Have to consider risk assessment (both the hazard and likelihood of a severe outcome from the hazard)

Perception of Risk





How would you feel about introducing peanuts ...	Level of anxiety (scale 1 to 10)	Mean anxiety score ± SD
Parents with a prior peanut allergic child (n=151)		
... at home without testing?		8.4 ± 2.5
... under supervision without testing?		3.8 ± 2.9
... at home after negative test?		4.3 ± 2.9
... at home after positive test?		9.4 ± 2.1
... under supervision after positive test?		7.0 ± 2.1
Parents without a prior peanut allergic child (n=148)		
... at home without testing?		4.0 ± 3.3
... under supervision without testing?		2.2 ± 3.2
	(Not worried) 0 1 2 3 4 5 6 7 8 9 10 (Extremely worried)	

Turner PJ et al. Journal of Allergy Clin Immunol Pract 2017;5:1169-78
Lange L. Allergo J Int 2014;23: 252-60
Begin P et al. Allergy 2016;71: 1762-71

Changing Perception of Risk in Guidance

SCHOOLS

Current research does not support consistent benefits of site-wide food-specific prohibition in the management of food allergies in childcare centers and schools

SCREENING

Pre-emptive screening for infant food allergies is not recommended. Families should be counseled that the risk of a severe reaction on the first exposure to an allergen is extremely low

SIBLINGS

Testing siblings carries the risk of overdiagnosis of peanut allergy, as well as delayed peanut introduction, which could negate the benefits of early introduction

PITFALLS

Screening creep
Access issues
Medicalization of feeding
Not feasible
Not cost-effective
Can lead to overdiagnosis
Can reduce quality of life

Anaphylaxis: A 2023 practice parameter update
https://www.sciencedirect.com/science/article/pii/S2213219820312113

Original Article

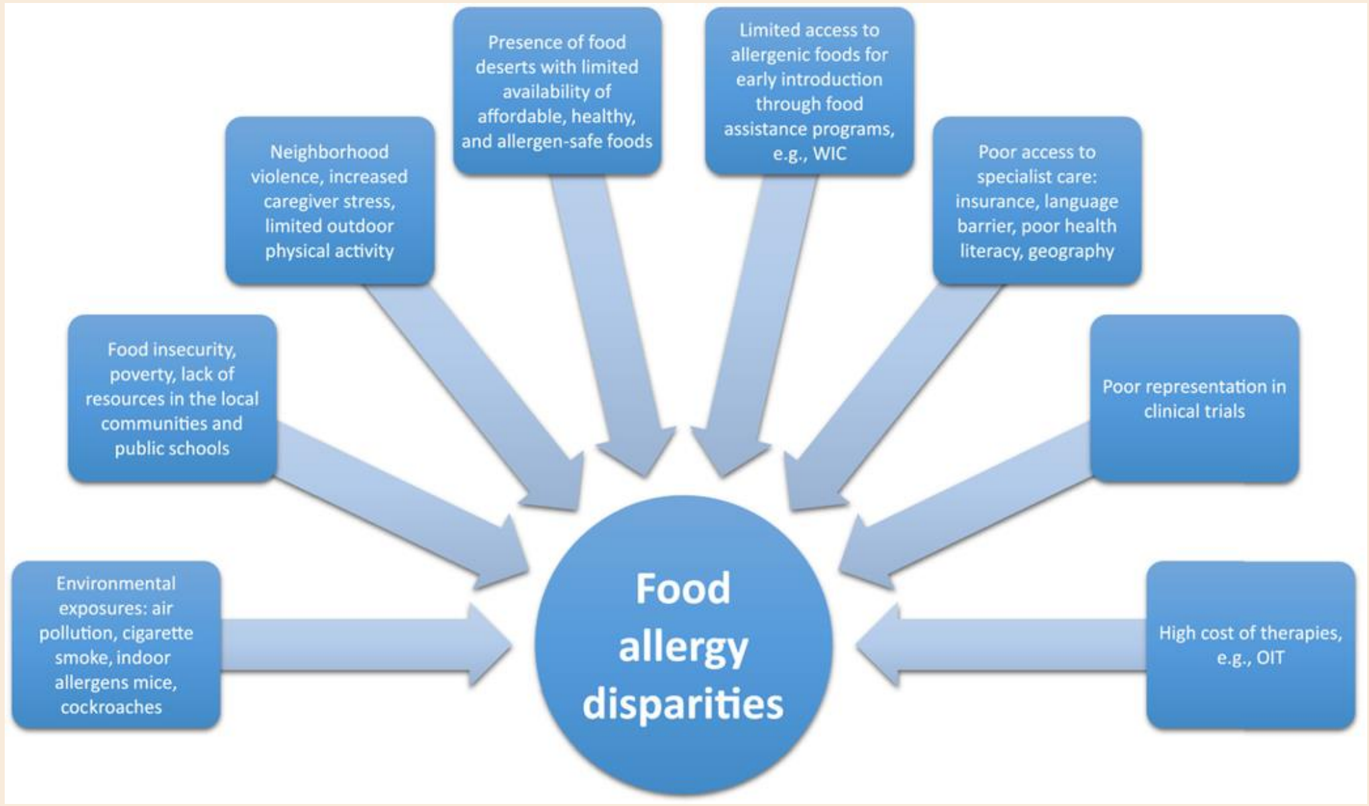
Successful Introduction of Peanut in Sensitized Infants With Reported Reactions at Home

Dirk H.J. Verhoeven, MD[a,b], Olga Benjamin-van Aalst, RD[c], Ted Klok, MD, PhD[d], Wouter W. de Weger, MD[e], Mijke Breukels, MD, PhD[f], Tom Hendriks, MD[g], Roy Gerth van Wijk, MD, PhD[b], and Hans de Groot, MD, PhD[a] *Delft, Rotterdam, Alkmaar, Deventer, Groningen, Helmond, and Eindhoven, the Netherlands*

- High-risk infants who were referred for early introduction of peanut; subgroup of 186 infants with reactions to peanut at home underwent peanut skin prick tests and a supervised open oral food challenge. After a negative OFC, peanut was introduced at home.
- Sensitization to peanut was detected in 69% of 186 infants, of whom 80% had >4 mm wheals in skin prick tests.
- An OFC with a cumulative dose of 4.4 g of peanut protein was performed in 163 infants with Sampson severity score grade I-III reactions at home; 120 challenges were negative.
- Peanut was subsequently introduced at home in infants with a negative challenge outcome.
- After 6 months, 96% were still eating peanut and 81% ate single portions of 3.0 g of peanut protein.
- One patient was considered to be peanut allergic after reintroduction of peanut at home.

“65% of infants with reported reactions to peanut at home have negative OFCs. In those children, peanut could be introduced safely, and 96% were able to consume peanut regularly without reactions. Challenging infants younger than 12 months prevents the misdiagnosis of peanut allergy and enables safe continued exposure to peanut and the induction of long-term tolerance”

Social determinants of health: Why this matters



Defining socioeconomic and racial disparities in food allergy - Annals of Allergy, Asthma & Immunology

Social determinants of health

Health disparities in food allergy

Joseline M. Cruz Vazquez, MPH [a,*], Agartha Kankam, BS [a], Kara Jordon, MD [b]

[a] *Division of Allergy and Immunology, Department of Pediatrics, NYU Grossman School of Medicine, Hassenfeld Children's Hospital, 145 East 32nd Street, Floor PH, New York, NY 10016, USA*
[b] *NYU Grossman School of Medicine, NYC Health + Hospitals/Bellevue Hospital, New York, NY USA*

Marginalized groups, which include Black, Asian, and Latinx populations have higher incidences of allergic diseases as well as a greater severity of the disease when compared to their White counterparts

Patients may have varying levels of health literacy which may create challenges in adherence to physician recommendations

There are several factors contributing to inequitable allergy care

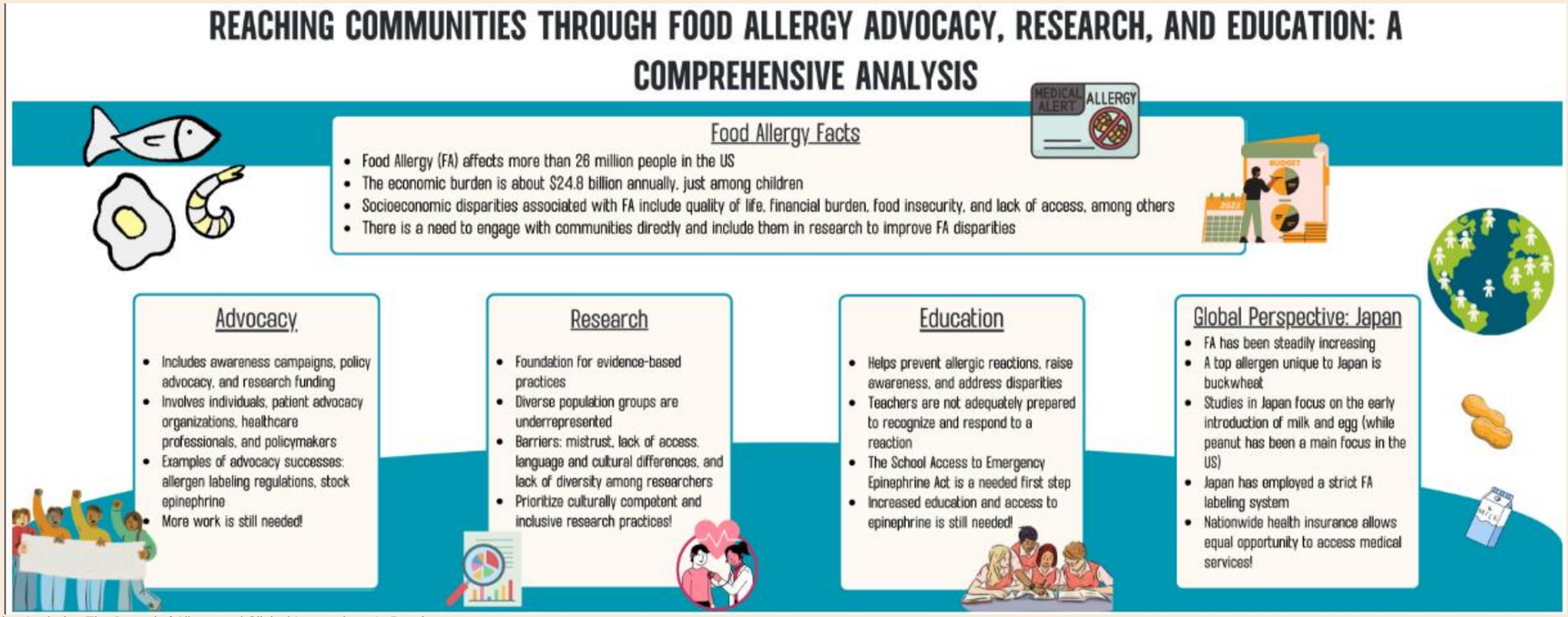
Epidemiology | Food Reactivity | Literacy | Cost | Access

Historically marginalized populations are more likely to have allergies to specific foods.

Significant financial burden associated with allergic disease

Future Steps

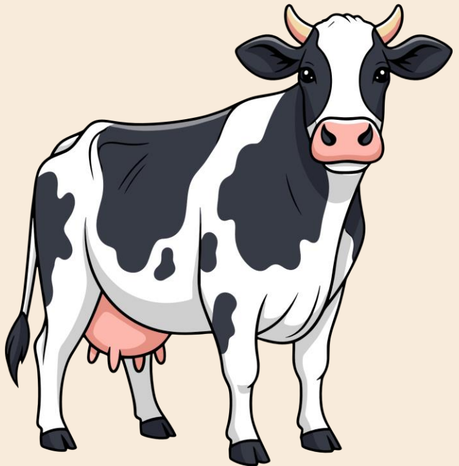
Fig. 1. Issues that need to be addressed in order to achieve equitable allergy care.



Reaching Communities Through Food Allergy Advocacy, Research, and Education: A Comprehensive Analysis - The Journal of Allergy and Clinical Immunology: In Practice

Cows milk allergy: Why this matters

- Cow’s milk allergy (CMA) is one of the most commonly reported Ig-E and non–IgE-mediated food allergies in infancy
- There is a significant morbidity associated with CMA, a significant dietary and social restriction associated with cow’s milk avoidance in many cultures, and a potential impact on growth
- In a recent Canadian qualitative study, milk allergy was reported as carrying the highest burden (compared with other common allergies, including egg, peanut, and tree nuts)
- Higher risk of mortality



Revisiting the Role of Soy Formula for Infants With IgE-Mediated Cow’s Milk Allergy - ScienceDirect

Rostrum

Revisiting the Role of Soy Formula for Infants With IgE-Mediated Cow's Milk Allergy

Elissa M. Abrams, MD[a,b], Scott H. Sicherer, MD[c], Kirsten Beyer, MD[d,e], Robert J. Boyle, MD, ChB, PhD[f], Motohiro Ebisawa, MD, PhD[g], Matthew Greenhawt, MD, MBA, MsC[h], Marion E. Groetch, RD[c], Gideon Lack, MD, FRCPCH[i,j], and Yitzhak Katz, MD[k] *Winnipeg, Manitoba, Canada; Vancouver, British Columbia, Canada; New York, NY; Berlin, Germany; London, United Kingdom; Kanagawa, Japan; Aurora, Colo; and Tel Aviv, Israel*

Cows milk allergy and formula alternatives

Most guidelines currently don't recommend soy based formula as an option for infants with cows milk allergy

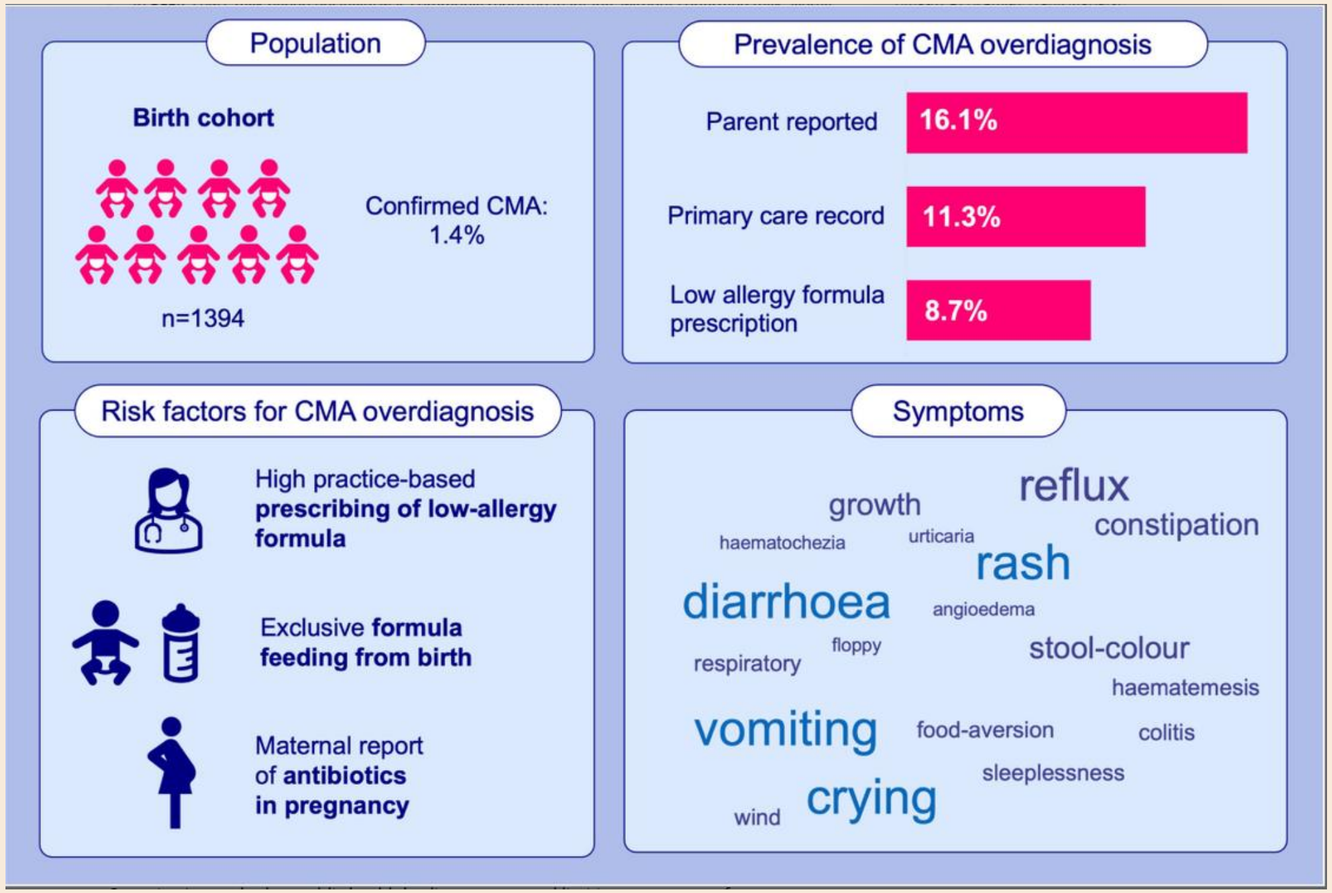
Soy based formula is a viable ad cost-effective option

Revisiting its use provides families with more accessible and flexible options

Prevalence and risk factors for milk allergy overdiagnosis in the BEEP trial cohort

Hilary I. Allen[1] | Olivia Wing[1] | Dara Milkova[1] | Emilia Jackson[2] | Karen Li[1] | Lucy E. Bradshaw[3] | Laura Wyatt[3] | Rachel Haines[3] | Miriam Santer[4] | Andrew W. Murphy[5] | Sara J. Brown[6] | Maeve Kelleher[7] | Michael R. Perkin[8] | Nicola Jay[9] | Timothy D. H. Smith[10] | Frank Moriarty[11] | Alan A. Montgomery[3] | Hywel C. Williams[2] | Robert J. Boyle[1]

Cows milk allergy overdiagnosis



Original Article

Time Course Until Tolerance for Food Protein–Induced Allergic Proctocolitis Varies by the Causal Food

Nagihan İskender, MD[a], Nefise Nezihe Uluç, MD[a], Ismail Ozanli, MD[a], Belkis Ipekci, MD[b], Taha Yasin Akın, MD[a], Mujde Tuba Cogurlu, MD[c], Aysen Uncuoğlu, MD[d], Nihal Uyar Aksu, MD[d], Sibel Balcı, MD[e], Isıl Eser Simsek, MD[a], and Metin Aydoğan, MD[a] *Kocaeli, Van, and Sakarya, Turkey*

Allergic proctocolitis

- Prospective cohort (N=91) in Japan
- The tolerance development rate was 36.6% in the first year, 88.9% in the second year, 96.4% in the third year, and 97.6% after the age of 3 years.
- The overall median tolerance development time was 15.5 months.
- In multiple food allergies, the presence of eggs significantly prolonged the time until tolerance.
- Multivariate regression analysis revealed that multifood allergy, atopic dermatitis at onset, and the absence of a pet at home, presence of IgE mediated food allergy were associated with delayed tolerance.
- Tolerance development times to egg and nuts were longer than those to milk, beef, and wheat

Original Article

The Role of IgE Sensitization in Acute FPIES: A Systematic Review and Meta-Analysis

Aisling K. Phelan, RD, MS[a], Sonsoles Infante, MD, PhD[b], Simona Barni, MD[c], Ulugbek Nurmatov, MD, MS, MPH, MBA, PhD[d], Robert J. Boyle, MD, PhD[e], and Marta Vazquez-Ortiz, MD, PhD[e] *London and Cardiff, United Kingdom; Madrid, Spain; and Florence, Italy*

FPIES

- Systematic review: children and adults with an acute FPIES diagnosis assessing IgE sensitization to a culprit food at onset or follow-up measured by skin prick or serological test were included.
- In individuals with acute FPIES, the sensitization rate was 9.8%
- The frequency of seroconversion was 1.1%
- Phenotype switch occurred in 1.1%; 13% among sensitized participants
- No consistent evidence for the relationship between IgE sensitization and FPIES persistence.

Original Article

The Role of IgE Sensitization in Acute FPIES: A Systematic Review and Meta-Analysis

Aisling K. Phelan, RD, MS[a], Sonsoles Infante, MD, PhD[b], Simona Barni, MD[c], Ulugbek Nurmatov, MD, MS, MPH, MBA, PhD[d], Robert J. Boyle, MD, PhD[e], and Marta Vazquez-Ortiz, MD, PhD[e] *London and Cardiff, United Kingdom; Madrid, Spain; and Florence, Italy*

- Found phenotype switch to IgE-mediated food allergy is uncommon in acute FPIES.
- An IgE sensitization in FPIES does not have a clear relationship with clinical outcomes.
- No correlation between rates of sensitization and rates of eczema, IgE-mediated food allergy, asthma and family history of atopy

THANK YOU