



Maternal Dietary Allergen Restriction While Breastfeeding: Pediatric Resident Knowledge and Practices

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Background

- The influence of maternal breastmilk on infant immune system function and food allergy is complex.
- Guidelines state that maternal dietary restriction during lactation is not recommended for primary prevention of allergic disease.¹
- While there are early life benefits of breastfeeding on limiting atopic disease, it is difficult to make definitive conclusions on the impact of breastfeeding on preventing or delaying the onset of food allergy.²
- Adequate understanding of the relationship between breastfeeding practices and infant food allergy is essential for pediatric providers.
- Despite this, pediatric trainees often feel unprepared to discuss breastfeeding practices with mothers and believe that more provider education is needed.³

Current Study

- The goals of this study were to assess trainee knowledge and practice of recommendations regarding breastfeeding, maternal diet, and potential allergic outcomes before and after an educational module.

Methods

- Pediatric Residents from an academic center in 2019 were invited to participate in the study through email.
- Completed an online questionnaire and viewed an educational module about evidence-based breastfeeding and infant food allergy guidelines; one month later they completed the questionnaire again.
- Assessment of knowledge and comfort was via a 27-item survey incorporating true/false statements, Likert scales, and clinical cases.
- Wilcoxon-Mann-Whitney + Dwass-Steel-Critchlow-Flinger method for pairwise comparison, Fisher's exact and McNemar tests were utilized

Table 1. Characteristics of Participants (N=68)

	N	%
Gender (Female)	53	77.9
Practice Site		
Academic Clinic	27	39.1
Other Community Clinic	26	37.7
Private Practice	16	23.2
Training Level		
PGY-1	25	36.2
PGY-2	24	34.8
PGY-3	20	29.0
Prior Experience (Elective/Research)		
None	54	79.4
Formal Training In Residency		
No	53	86.9

*57% initial response rate, 26% follow-up response rate

Results

Table 2. Participant utilization of counseling and resources related to maternal dietary restriction and infant food allergy

	N	%
Have counseled mothers to restrict their diets if infants have...*		
High-risk for food allergy	4	5.4
Allergic proctocolitis	16	21.6
Atopic Dermatitis	5	6.8
Colic	6	8.1
Never	39	52.7
Use these resources when making recommendations for maternal dietary restriction*		
Prior mentor	36	48.6
Anecdotal evidence	14	18.9
American Academy of Pediatrics Recommendations	23	31.1
NIAID Guidelines	1	1.4
Parent-reported symptoms	10	13.5
Other source	5	6.8
Believe mother's nutritional status adversely affected if allergenic foods eliminated from diet		
Yes	22	37.3

*Multiple choice question; percent is percent 'yes' overall

**Results from initial participant survey

Table 3. Baseline mean (median) comfort levels of participants by training level

	PGY-1	PGY-2	PGY-3
Feel knowledgeable	4.00 (4)*	3.81 (4)	3.35 (3)
Comfortable with my understanding	4.10 (4)*	4.10 (4)*	3.29 (3)
Comfortable counseling mothers	3.5 (3)	3.76 (4)*	3.00 (3)
Discussion with parents in clinic	3.95 (4)	4.00 (4)	3.47 (3)
Initiate discussion with parents in clinic	4.36 (4)*	4.48 (5)*	3.82 (4)

*Significant difference at p<0.05 from PGY-3; 1=strongly agree/always,

2=agree/often, 3=neutral/sometimes, 4=disagree/rarely, 5=strongly disagree/never

**Results compared across gender, clinic site and prior experience on topic and

were not found to be statistically significant

Table 4. Baseline knowledge levels and practice of participants

% correct	Training Level	
	PGY1	PGY2/3
Existing Guidelines	36.0	27.3
Primary Prevention		
IgE-mediated	80.9	89.2
Allergic proctocolitis	71.4	86.8
Atopic dermatitis	80.9	84.2
Colic	85.7	97.4
Secondary Prevention		
IgE-mediated	70.0	65.8
Allergic proctocolitis	65.0	73.7
Atopic dermatitis	70.0	55.5
Colic	66.7	76.3
Scenarios		
Asymptomatic, sibling allergy	90.6	97.3
Symptomatic-atopic dermatitis	76.2	78.9
Symptomatic-colic	80.9	92.1
Symptomatic-allergic proctocolitis	14.3	47.4

*Numbers in bold significantly different at p<0.05

**Results also compared across gender, clinic site and prior experience and not significantly different

- Most respondents (61-93%) correctly answered questions regarding guidelines in relation to food allergy prevention and maternal diet.
- PGY2/3's answered more questions correctly about allergic proctocolitis compared to PGY1's (p<0.05); no differences were noted for other topics.
- Review of post-assessment scores (N=29) showed the education module had little impact on knowledge; knowledge of IgE-mediated food allergy prevention or treatment changed, but not in the desired direction (p=0.01).

Conclusions

- Pediatric residents report low comfort and perceive that they have little knowledge about maternal diet and infant food allergy, yet their actual performance suggested the opposite.
- Those who completed the follow-up survey did not demonstrate knowledge improvement, this may be due to high baseline scores or a low follow-up survey response rate.
- This study emphasizes the need for robust educational resources related to maternal diet, breastfeeding and infant allergic disease.

References

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3. Esselmont E, Moreau K, Aglipay M, et al. Residents' breastfeeding knowledge, comfort, practices, and perceptions: results of the Breastfeeding Resident Education Study (BRES). BMC Pediatr. 2018;22:18(1):170.