Pediatric peanut allergy trends following 2017 *AAP Guidelines for Early Food Introduction and Patterns of Food Allergy* publication

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♦ Introduction & Background

- **The Problem**: Peanut allergy prevalence in children in the United States has more than tripled in the last 20 years, now affecting 2% of the pediatric population. Peanut allergy is a leading cause of severe food-induced allergy and anaphylaxis.
- **The Shift**: In 2017, the AAP/NIAID updated allergy prevention guidelines following the LEAP trial, which demonstrated an 81-86% reduction in pediatric peanut allergy incidence through early introduction (4-6 months).
  The Gap: While clinical trials following guideline addendum publication showed high efficacy, population-level impact remains unclear.
- **Objectives**: To assess trends in diagnosed peanut allergy among children ages 0-4 years and evaluate shifts following the 2017 guideline publication.

♦ Methods

- **Data Source**: Retrospective analysis using the TriNetX Research Network (Electronic Health Records)
- **Population**: Children aged 0-4 years with incident diagnosis of peanut allergy
- **Timeline**:
  - **Pre-Guideline**: 2012-2016
  - **Transition Year**: 2017 (Excluded)
  - **Post-Guideline**: 2018-2025
- **Statistical Analysis**: Interrupted Time Series (ITS) with segmented linear regression used to measure changes in level (immediate impact) and slope (trend change)

Results

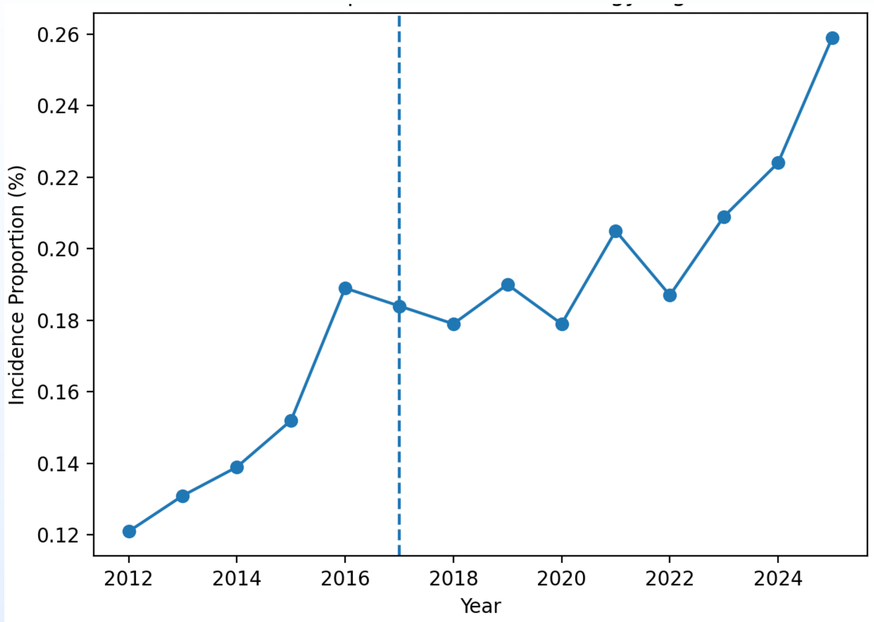

Figure 1. Incidence Proportion of Peanut Allergy (Ages 0-4).

- **Rising Incidence**: Annual incidence proportion rose significantly from 0.121% (2012) to 0.259% (2025).
- **ITS Analysis Findings**:
  - **Pre-Guideline Trend**: Significant upward trend (β=0.0143,p=0.001).
  - **Immediate Level Change**: No significant change post-2017 (β=0.0013,p=0.960).
  - **Slop Change**: No significant deviation in the trend post-guideline (β=-0.0048,p=0.228).
- Summary Means: Pre-guideline mean incidence (0.146%) vs post-guideline mean (0.200%).

♦ Discussion

- **Barriers to Implementation**:
  - **Clinicians**: Only 26% of pediatricians report full adherence; barriers include time constraints and fear of reactions.[1]
  - **Parents**: Despite 82% awareness, only 17.2% introduced peanuts before 7 months. Fear of reaction is the primary concern.[2]
- **Biological Lag**: Children born in 2017 only reached 4 years of age in 2021; preventative gain of early introduction may take a decade to present.[3]
- **Confounding Variables**: Rising environmental risks (pollution, antibiotic use) and improved diagnostic vigilance (ICD-10 coding) may be masking benefits.[4,5,6,7]

♦ Conclusion

- The 2017 Addendum Guidelines have not yet presented a decrease in population-level peanut allergy incident diagnoses in the U.S.
- There exists a translation gap between clinical trial efficacy and real-world implementation.
- Efforts should support implementation of guidelines via provider education and addressing parental hesitation.

♦ References

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