TOOLS FOR PRACTICE #414 | May 25, 2026

TOOLS FOR PRACTICE

PEER PATIENTS EXPERIENCE EVIDENCE RESEARCH

A Tough Nut to Crack: Does oral immunotherapy improve outcomes in peanut allergy?

CLINICAL QUESTION

In children with peanut allergy, does oral immunotherapy increase peanut tolerance, and what are the adverse effects?

BOTTOM LINE

In children with peanut allergy, oral immunotherapy increases peanut tolerance to accidental exposure compared with placebo or avoidance, with about 60-70% achieving desensitization versus <10% of controls over 1-3 years. While long-term outcomes are unknown, ~20% of children will still tolerate accidental peanut exposure 26 weeks after stopping therapy. Gastrointestinal adverse effects occur in 78% compared to 38% (control), and any epinephrine use occurs in 12% versus 3% (control).

EVIDENCE

- Results statistically significant unless otherwise stated.
- Systematic review of randomized controlled trials (RCTs) comparing peanut oral immunotherapy to placebo or avoidance (13 RCTs, 1315 participants, ~9 years old).[1] Peanut protein dose escalated every ~2 weeks until maintenance dose reached (reported doses 300-4000mg; six RCTs ~300mg/day).

    - Desensitization (tolerated food challenge) at 24-160 weeks:
        - 69% versus 7% (control).
- Two of the largest pediatric RCTs (126-499 children, ages 12 months to 17 years, 52-134 weeks):[2,3]
    - Desensitization to 600mg or 5000mg: 67-71% versus 2-4% (placebo).
    - Rescue epinephrine during food challenge: 10-39% versus 53-62% (placebo).
    - Remission (tolerated peanut after 26 weeks off therapy) (1 RCT, 146 children): 21% versus 2%.
- Other systematic reviews similar.[4,5]
- Systematic review of RCTs on safety:[6]
    - Gastrointestinal adverse events: 78% versus 38% (control).
    - Any epinephrine use: 12% versus 3% (control).
    - No statistical difference in wheezing: 27% versus 7% (control), possibly underpowered.
- Limitations: Different doses, escalation schedules, and definitions of desensitization and remission; open-label designs, and limited long-term follow-up after therapy discontinuation.

CONTEXT

- Initial dose escalations were conducted under medical supervision; maintenance dosing occurred at home, with families prescribed epinephrine for emergency use.
- A 300mg tolerance threshold approximates protection against accidental exposures rather than the ability to freely consume peanut-containing foods.[7]
- Oral immunotherapy differs from early peanut introduction, which is preventive rather than therapeutic:
    - Early peanut introduction (3–10 months) is associated with lower peanut allergy risk (1.4% versus 4.9% (control).[8]
- Oral immunotherapy typically requires daily ingestion, long-term adherence, and access to specialists.

REFERENCES

1. Riggioni C, Oton T, Carmona L, *et al.* Allergy. 2024;79(8):2097-127.
2. Vickery BP, Vereda A, Casale TB, *et al.* N Engl J Med. 2018;379(21): 1991-2001.
3. Jones SM, Kim EH, Nadeau KC, *et al.* Lancet. 2022;399(10322): 359-71.
4. Lodge CJ, Waidyatillake N, Peters RL, *et al.* Clin Transl Allergy. 2023;13(7): e12268.
5. De Silva D, Rodriguez Del Rio P, de Wong NW, *et al.* Allergy. 2022;77(6): 1852-62.
6. Khan NA, Sethi FA, Shaheer M, *et al.* Int Arch Allergy Immunol. 2025;12: 1-14.
7. Remington BC, Krone T, Koppelman SJ. Pediatr Allergy Immunol. 2018;29(7): 762-72.
8. Scarpone R, Kimkool P, Ierodiakonou D, *et al*. JAMA Pediatr. 2023;177(5): 489-97.

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