

# Two-Step Egg Introduction for Allergy Prevention in Infants with Eczema (PETIT)

A Synopsis of Study Parameters, Outcomes, and Key Takeaways

**Research Question:** The study investigates whether or not early, stepwise introduction of eggs to infants with eczema, combined with optimal eczema treatment, would prevent egg allergy at 1 year of age

**Funding:** Funded by Japan's Ministry of Health, Labour, and Welfare and the National Centre for Child Health and Development

**Year Study Began:** Enrollment from September, 2012 to February, 2015

**Year Published:** Published December, 2016

**Study Type:** Randomized, double-blind, placebo-controlled trial at two sites in Tokyo, Japan

**Who Was Studied:** 4-5 month old infants with atopic dermatitis (eczema)

**Who Was Excluded:** Any baby born before 37 weeks of gestational age, prior ingestion of hen's eggs or egg products, or a history of allergic reaction to hen's eggs

**How Many Patients:** 147 participants. 73 to the egg group and 74 to the placebo group

## Dosing:

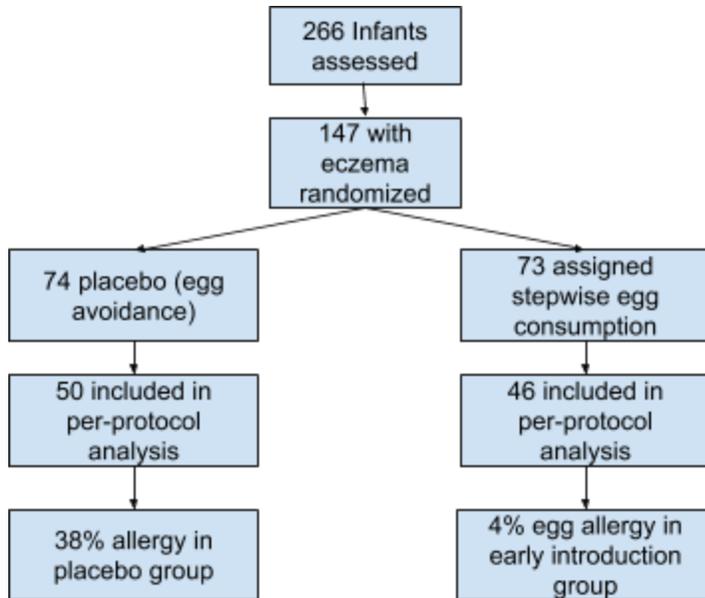
- Early-introduction group given egg and squash powder. Placebo group given only squash powder
- 6-9 months: 50 mg of heated egg powder (25mg egg protein; equivalent of 0.2g of whole egg boiled) per day, every day
- 9-12 months: 250mg per day, every day
- Participants consumed orally the allocated trial powder daily from 6 to 12 months of age. No other food restrictions except for eggs and egg products. Moms could breastfeed.
- Powder administered by infants' caregiver at home

## Study Overview

- Random assignment to egg or placebo group at a ratio of 1:1
- Primary outcome was presence or absence of allergy, measured by infants' serum concentrations of IgE specific to egg white (IgG1, IgG4, and IgA) and Oral Food Challenge at age 12 months.
- Allergy testing was not required prior to the trial.

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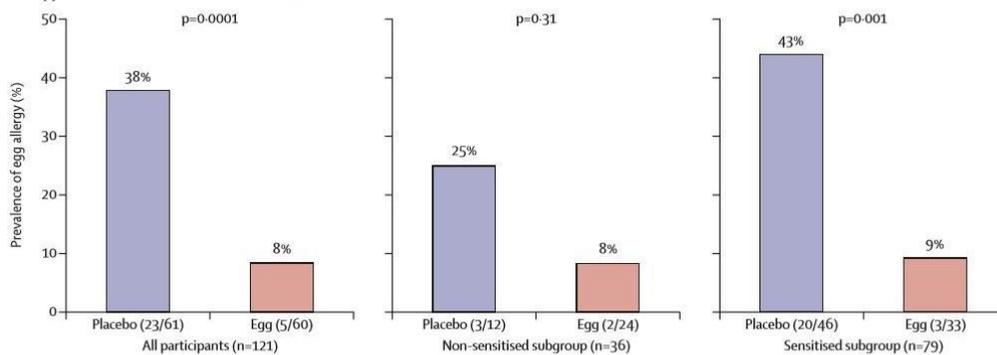
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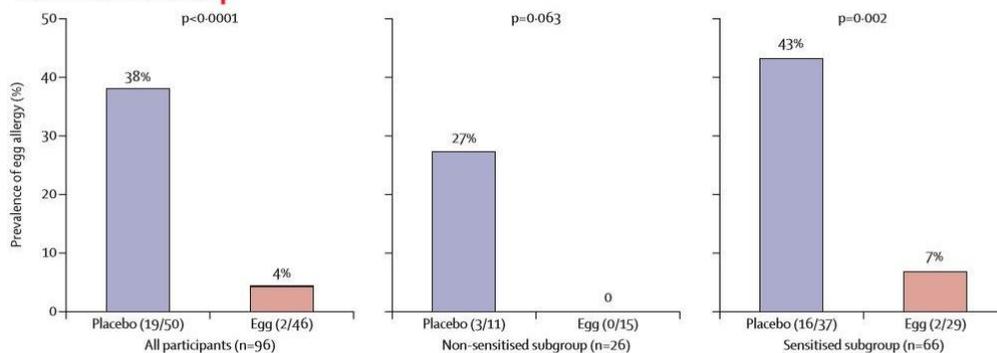
## Results:

- 79% reduction in overall rate of egg allergy ( $p=0.0001$ ).
  - High rates of egg allergy for non-sensitized group in avoidance group (38%), as compared to 8% in egg consumption group.
- High risk group without allergy testing prior to enrollment
- No serious reactions

### Intention-To-Treat Group



### Per-Protocol Group



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**Criticisms and Limitations:** The primary weakness is this study was limited to infants with eczema and didn't include general population participants

**Summary and Implications:** Introduction of heated egg in a stepwise manner, along with aggressive eczema treatment, is a safe and effective way to prevent hen's egg allergy in high risk infants.

- Two-step approach findings suggest a low dose introduction may be a safer method than what was used in the LEAP study.
- Early egg introduction is effective at preventing development of food allergies, even for participants shown to already be sensitized to egg prior to starting the intervention.
- High adherence to food introduction protocol, implying the practicability of the approach used (mixing powder with food daily)

## References:

- 1) [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)31418-0/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31418-0/abstract)