

Oral immunotherapy shows promise as treatment for children with egg allergy

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A team of researchers from Mount Sinai School of Medicine and four other institutions have found that young children with egg allergies can benefit from treatment with oral immunotherapy.

The study titled, "Oral Immunotherapy for Treatment of [Egg Allergy](#) in Children," appears online in the [New England Journal of Medicine](#) on Wednesday, July 19.

In a multi-center, double-blind, randomized, placebo-controlled study of 55 children with egg allergy, between 5 and 11 years old, 40 children received an egg-white powder as daily oral immunotherapy and 15 children received a cornstarch powder placebo over a 24 month period. Fifty-five children participated in a [food challenge](#), which is a test where a person with [food allergy](#) gradually consumes increasing amounts of the allergenic food under [medical supervision](#) in order to determine at what level the person experiences allergic symptoms.

Children who successfully passed the food challenge at 22 months, without having an allergic reaction, discontinued oral immunotherapy and avoided all egg consumption for four to six weeks. At 24 months, these children underwent an oral food challenge with egg-white powder and a cooked egg to test if they had developed tolerance to egg. Children who passed this challenge were placed on a diet with egg consumption and were evaluated again at 30 and 36 months.

"After 10 months of therapy, 55 percent of those who received oral immunotherapy passed the oral food challenge and were considered to be desensitized, compared to none of those on placebo," said Scott Sicherer, MD, Professor of Pediatrics and Chief of the Division of Allergy and Immunology at Mount Sinai School of Medicine. "After 22 months, 75 percent of children in the oral-immunotherapy group were desensitized, meaning with their daily dose they could ingest much more

egg than before."

In the oral-immunotherapy group, 28 percent of the children passed the oral food challenge at 24 months after being off daily therapy for 4 to 6 weeks and were considered to no longer have an allergy to egg. At 30 months and 36 months, all children who had passed the oral food challenge at 24 months were consuming egg.

"We found that oral immunotherapy provides protection in a majority of children with egg allergy by raising the reaction threshold," said Hugh Sampson, MD, Dean for Translational Biomedical Sciences, Professor of Pediatrics, and Director of the Jaffe Food Allergy Institute at Mount Sinai School of Medicine. "It represents a promising therapeutic intervention for food allergy and the approach is relatively safe, with most of the reactions to dosing categorized as mild."

Approximately 15 percent of the [children](#) who received oral immunotherapy did not complete the therapy due to significant clinical reactions. The mechanisms underlying the success of oral immunotherapy and their relationship to natural immune tolerance are unknown.

"For oral immunotherapy to be recommended as a standard of care, it will be important to better define the risks of oral immunotherapy versus avoiding the food the child is allergic to, and determine the correct dosing regimens with the most favorable outcomes," said Dr. Sampson. "It is also important to identify patients who are most likely to benefit from oral [immunotherapy](#), and develop strategies that promote long-term tolerance."

More information: Burks AW et al. Oral immunotherapy for treatment of egg allergy in children. *New England Journal of Medicine*. DOI: 10.1056/NEJMoa1200435 (2012).

Provided by The Mount Sinai Hospital

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