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Researchers confirm early intervention curbs peanut allergies in babies

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Cleveland Clinic researchers have found that starting peanut oral immunotherapy under medical supervision during infancy can improve a child's immune response to the food over time. The findings were

recently published in the *Journal of Allergy & Clinical Immunology: In Practice*.

Cleveland Clinic is the first health system in Northeast Ohio, and one of a few in the country, to offer oral immunotherapy for babies and toddlers who are allergic to peanuts. Through its Food Allergy Center of Excellence, children under age four have developed a tolerance for the food by eating tiny amounts of them in a step-by-step, controlled process.

"We've seen how peanut oral immunotherapy is well-tolerated in toddlers, but there is limited real-world evidence available to demonstrate the benefits in babies," said Sandra Hong, M.D., allergist and director of the Food Allergy Center of Excellence at Cleveland Clinic. "We leveraged data from infants in our program to better understand the safety and efficacy of this treatment in children 12 months and younger."

For the retrospective study, the research team reviewed data from 22 infants—ages 7 to 11 months—who received peanut oral immunotherapy at Cleveland Clinic's Food Allergy Center of Excellence. Through an allergist and parent—implemented plan, children were started on a daily dose of 18 milligrams (about twice the weight of a grain of table salt) of peanut protein in the form of peanut butter or peanut powder. Over six months, they were slowly given larger servings to consume every day until they reached a maintenance dose of 500 milligrams (the equivalence of two peanut kernels).

Researchers found that all 22 babies in the cohort achieved this milestone. During treatment, more than half experienced mild allergic reactions which resolved on their own, and one required epinephrine. Around 27% of the babies had experienced no allergic reactions whatsoever.

"Safety is paramount. Each time babies were exposed to a larger amount of peanut protein, it was done under the careful supervision of an allergist," said Dr. Hong. "They were monitored for an hour in our office after the higher dose was given."

Upon completing peanut oral immunotherapy, 14 of the 22 babies received an allergy test to check their levels of peanut—specific antibodies. The results indicated that all 14 babies had a reduced sensitivity to peanuts.

Then, 11 of those babies participated in an oral food challenge where they were fed increasing doses of peanut protein up to 2,000 milligrams (about nine peanuts). After completing the challenge, 91% of them could tolerate peanuts without triggering any allergic reactions.

"Our study shows that the majority of babies were able to safely consume peanuts after oral immunotherapy," said Sarah Johnson, M.D., lead author of the study and a fellow at Cleveland Clinic. "Overall, this signals that age is a crucial factor to the success of this treatment. An infant's immune system is more adaptable, allowing them to develop tolerance to peanuts with less severe reactions and fewer side effects than older children."

Currently, 1.5 million American children live with a peanut allergy, and less than one-third develop tolerance for peanuts naturally.

While peanut oral immunotherapy holds promise in helping young children overcome peanut allergies, the treatment should always be done under the care of a trained allergist.

"At the end of the day, we want families to be safe," said Dr. Hong. "This is not something you try on your own because of the significant risk of triggering allergic reactions. When you have an allergist supervise

the process, you are ensuring that any reactions your child experiences are quickly identified and treated."

More information: Sarah Johnson et al, Safety and Effectiveness of Peanut Oral Immunotherapy in Children Under 12 months, *The Journal of Allergy and Clinical Immunology: In Practice* (2023). DOI: 10.1016/j.jaip.2023.07.009

Provided by Cleveland Clinic

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