

Skin exposure may contribute to early risk for food allergies

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Many children may become allergic to peanuts before they first eat them, and skin exposure may be contribute to early sensitization, according to a study in mice led by Mount Sinai researchers and published today in the *Journal of Clinical Investigation*. Early in the process of developing an allergy, skin exposure to food allergens contributes to "sensitization", which means the skin is reactive to an antigen, such as peanuts, especially by repeated exposure.

The question of how [peanut allergies](#) start is an important one, given the extremity of some reactions, the prevalence (1 to 2 percent of the population), and because such allergies tend to be lifelong.

Past studies have shown that children may first become allergic when exposed to peanut proteins through breast milk or in house dust, but this current study adds skin exposure to the list of culprits that make a child allergic by the first time they taste a peanut. The results also make elements of the human immune system in the skin targets for future treatments or preventive efforts.

"The [peanut protein](#) responsible for most [allergic reactions](#) in humans is seen as foreign or dangerous by the immune system of the skin," said Cecilia Berin, PhD, Associate Professor of Pediatrics at the Icahn School of Medicine at Mount Sinai. "Blocking those immune pathways activated in the skin prevented the development of peanut allergy in the mice, and our next step will be to confirm this in humans."

In a collaboration among the Jaffe Food Allergy Institute, The Mindich Child Health and Development Institute, Immunology Institute, and Tisch Cancer Institute at The Mount Sinai Hospital, researchers exposed mice to peanut protein extract on the skin and observed that repeated topical exposure to peanut allergens led to [sensitization](#) and a severe, whole-body allergic reaction upon a second exposure. The data found that peanuts are allergenic due to inherent components that lead to a more robust immune response. These findings suggest that skin exposure to food allergens contributes to sensitization to foods in early life.

"This research helps us to understand why peanut, out of the many foods in our diet, is such a common cause of food allergy," said Berin. ". If we identify how the [immune system](#) recognizes peanut as a danger, we may eventually learn how to block that pathway and prevent the [food allergy](#) altogether."

Provided by The Mount Sinai Hospital

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