

Antibody treatment improves chronic food allergy symptoms in young adults, study finds

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A weekly dose of dupilumab, a monoclonal antibody, led to a reduction of symptoms and tissue improvement in young adults and adolescents

with eosinophilic esophagitis (EoE), according to a new study published in the *New England Journal of Medicine*. The study analyzed data from two phase 3 clinical trials and involved an international group of researchers, including those from Children's Hospital of Philadelphia (CHOP).

EoE is a chronic food allergy that affects the esophagus, the tube that connects the mouth to the stomach. Triggered by certain foods, the disease occurs when eosinophils, a type of white blood cell, accumulate in the esophagus causing pain and injury. If untreated, the [connective tissue](#) in the esophagus can become stiff and scarred, leading to narrowing of the esophagus, as well as other medical complications including food impaction and choking.

Current treatments for EoE involve food elimination diets, proton-pump inhibitors (PPIs), swallowed topical glucocorticoids, and, in some cases, esophageal dilation. However, anywhere from 30 to 40% of patients may not respond to first-line treatments, and some of the treatments have unwanted side effects.

Given that growing evidence suggests that type 2 cytokines play key roles in EoE, researchers have investigated using dupilumab to treat the condition. Dupilumab is a monoclonal antibody that blocks the shared receptor component for interleukin-4 and interleukin-13, two cytokines that are key and central drivers of type 2 inflammation.

Dupilumab is approved for the treatment of several type 2 [inflammatory diseases](#), including [atopic dermatitis](#), asthma, and EoE, and a phase 2 trial involving adults with active EoE showed that a weekly 300mg dose of dupilumab reduced symptoms and improved esophageal tissue.

In the phase 3 trial described in the study, researchers assessed the efficacy and safety of dupilumab in patients 12 years and older, with the

treatment administered weekly or every two weeks, compared to placebo. They found that 300mg of dupilumab given subcutaneously every week reduced symptoms and improved histologic outcomes, whereas a dose every other week improved histologic outcomes but did not improve symptoms.

"The results of this phase 3 trial give hope to patients and families who have historically had limited options to treat EoE," said study co-author Jonathan Spergel, MD, Ph.D., Chief of the Allergy Program at Children's Hospital of Philadelphia and the Stuart E Starr Chair of Pediatrics. "This study shows that dupilumab is a good treatment option for patients with EoE and not only reduces symptoms but also targets the root cause of the disease."

More information: Evan S. Dellon et al, Dupilumab in Adults and Adolescents with Eosinophilic Esophagitis, *New England Journal of Medicine* (2022). [DOI: 10.1056/NEJMoa2205982](https://doi.org/10.1056/NEJMoa2205982)

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