

**FOR IMMEDIATE RELEASE**

**February 19, 2025**

## **Taking vitamin E during pregnancy may decrease peanut allergy in children**

New research found that supplementing maternal diet with  $\alpha$ -tocopherol, a form of vitamin E, can reduce the development of food allergy and anaphylaxis in newborn mice.

The prevalence of food allergy in children increased [50% from 2007 to 2021](#) in the United States (US), with the incidence of peanut allergy tripling in that time. This new study, published in *The Journal of Immunology*, shows the potential for  $\alpha$ -tocopherol in prenatal vitamins during pregnancy and lactation to address this alarming increase and reduce development of food allergy early in life.

The study found that pups born to mice fed a diet supplemented with  $\alpha$ -tocopherol during pregnancy and nursing showed reduced development of IgE antibodies to the food allergen and reduced peanut induced anaphylaxis. This sweeping improvement in outcomes was attributed to increased  $\alpha$ -tocopherol levels in the pups of mothers taking the supplement, compared to those who were not.

To reach these findings, the researchers used a mouse model to mimic the real-world conditions that contribute to allergy development in infants. They studied mouse pups predisposed for eczema and food allergies because children at highest risk of peanut allergy tend to also develop eczema.

Pups were sensitized by skin exposure to known food allergens, household dust, and detergent to imitate common childhood exposures. After 2.5 weeks, pups were exposed to the allergen by oral consumption to test their allergic response. This was done to replicate how early exposures to allergens often sensitize the immune system to react to secondary oral exposures later. The researchers found that pups born to mothers fed a diet supplemented with  $\alpha$ -tocopherol displayed reduced development of allergies.

Dr. Joan Cook-Mills, Professor of Microbiology and Immunology at Indiana University School of Medicine, who led the study, shared it may not be as easy as it sounds for mothers in the US to benefit from  $\alpha$ -tocopherol. “The potential of  $\alpha$ -tocopherol to reduce allergic reactions in children will likely be dampened by high levels of  $\gamma$ -tocopherol due to its prevalence in common cooking oils (soybean oil, corn oil, and canola oil) and supplements in the US,” said Dr. Cook-Mills. Dr. Cook-Mills has previously reported that  $\gamma$ -tocopherol counteracts the benefits of  $\alpha$ -tocopherol. “Currently,  $\alpha$ -tocopherol supplementation may have a greater benefit in European countries, where common cooking oils (sunflower oil, safflower oil, and olive oil) are high in  $\alpha$ -tocopherol and relatively low in  $\gamma$ -tocopherol,” suggested Dr. Cook-Mills.

According to Dr. Cook-Mills, partnering with commercial companies to achieve a healthy balance of  $\alpha$ -tocopherol and  $\gamma$ -tocopherol in cooking oil and other products in the US is a long-term goal of



their research. “The benefit of these research findings is limited in the US unless an individual changes their cooking habits, but moreover unless commercial production practices change,” emphasizes Dr. Cook-Mills.

To reduce the development of peanut allergy in children, the guidance on when to introduce peanuts to children has been updated to earlier introductions. However, some children are already positive for peanut allergies, before solid food can be introduced, highlighting the need to develop interventions beyond early introduction of peanuts. These results show a potential way to decrease the development of food allergy in higher risk children.

The research article is available on *The Journal of Immunology* website.

For a copy of the article, please contact Matt Lam, Ph. D., Communications Director, [mlam@aai.org](mailto:mlam@aai.org).

Requests for interviews with authors, *The Journal of Immunology* or the American Association of Immunologists can be made to [mlam@aai.org](mailto:mlam@aai.org).

#### **About The American Association of Immunologists**

The American Association of Immunologists (AAI) is one of the world’s largest organizations of immunologists and scientists in related disciplines. Our mission is to improve global health and well-being by advancing immunology and elevating public understanding of the immune system. AAI members are responsible for some of the most significant biomedical discoveries of the past century, including the development of life-saving cancer immunotherapies, antibody therapies, transplant technologies, and vaccines. We support scientists across the field of immunology through knowledge dissemination, community building, advocacy, and public outreach.

#### **About *The Journal of Immunology***

*The Journal of Immunology* (*The JI*) publishes peer-reviewed manuscripts describing novel findings in all areas of experimental immunology, including both basic and clinical studies. *The JI* is owned by the American Association of Immunologists and published in partnership with Oxford University Press.

#### **Contact Information**

Matt Lam, Ph. D.  
Communications Director  
571-250-9553  
[mlam@aai.org](mailto:mlam@aai.org)

