

New genetic clue to peanut allergy

October 11 2017



Credit: Daniele Pellati/public domain

Canadian researchers have pinpointed a new gene associated with peanut allergy, offering further evidence that genes play a role in the development of food allergies and opening the door to future research, improved diagnostics and new treatment options.

The gene, called c11orf30/EMSY (EMSY), is already known to play a role in other allergy-related conditions, such as eczema, asthma, and allergic rhinitis. This study is the first to associate the EMSY locus with [food](#) allergy, and these findings suggest that the gene plays an important role in the development of not just food allergy but also general allergic predisposition. The findings were published today in *The Journal of Allergy and Clinical Immunology*.

AllerGen researchers Drs Denise Daley (Associate Professor, The University of British Columbia, Centre for Heart Lung Innovation at St. Paul's Hospital, Vancouver, BC) and Ann Clarke (Professor, University of Calgary, Cumming School of Medicine, Calgary, AB; Adjunct Professor, McGill University, Montreal, QC) led the research.

"Food allergy is the result of both genetic and environmental factors, but there are surprisingly few data regarding the genetic basis of this condition," says Dr. Daley, a Tier II Canada Research Chair at St. Paul's in the genetic epidemiology of common complex diseases. "The discovery of this genetic link gives us a fuller picture of the causes of food allergies, and this could eventually help doctors identify children at risk."

Peanut allergy develops in early life and is rarely outgrown. Roughly one per cent of Canadian adults and between two and three per cent of Canadian children are affected, and the symptoms can be severe and even life threatening.

For their study, the researchers analyzed DNA from 850 individuals with a peanut allergy recruited from the Canadian Peanut Allergy Registry (CanPAR) and nearly 1,000 individuals without a [peanut](#) allergy. The team scanned over 7.5 million genetic markers across the DNA through a genome-wide association study (GWAS) searching for clues as to which genes might contribute to an increased risk of developing food

allergies. The team also analyzed results from six other genetic studies from American, Australian, German and Dutch populations.

What they found was that EMSY was associated with an increased risk of both [peanut allergy](#) and food allergy, and five other gene locations are also suspected to be involved.

Dr. Yuka Asai, an AllerGen investigator and Assistant Professor at Queen's University, and AllerGen trainee Dr. Aida Eslami, a postdoctoral fellow at The University of British Columbia, were co-first authors on the paper.

"Our team had previously published findings that a defect in the filaggrin gene can increase the risk of a child developing an [allergy](#) to peanuts," says Dr. Asai. Yet, mutations in the filaggrin gene were only present in 20 per cent of the allergic cases, she points out, which means that "this GWAS study was critical to shedding more light on the specific gene mechanisms at play."

"One of the hurdles in developing new treatments for food allergies is identifying the specific [genes](#) and pathways we need to target," adds Dr. Eslami. "These results suggest that EMSY could be a useful target for predicting and managing [food allergy](#) treatments in the future."

More information: *Journal of Allergy and Clinical Immunology*, [DOI: 10.1016/j.jaci.2017.09.015](#) , [www.sciencedirect.com/science/.../ii/S0091674917315749](#)

Provided by University of British Columbia

Citation: New genetic clue to peanut allergy (2017, October 11) retrieved 26 April 2024 from

<https://medicalxpress.com/news/2017-10-genetic-clue-peanut-allergy.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.