



Invited Commentary | Allergy

Sesame: The New Priority Allergen?

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Food allergy affects approximately 8% of children in the US population, with a dramatic increase during the past few decades in various regions of the Western world.¹ In these regions, the most common food allergens include milk, egg, soy, wheat, peanuts, nuts, and fish.² Elsewhere, in countries such as Israel,³ sesame allergy is one of the most common types of food allergy. Sesame has previously been recognized as an increasing allergy in North America as well. In a 2010 US nationwide cross-sectional study of 5300 households (13 534 respondents), the self-reported prevalence of sesame allergy among children and adults was estimated at be 0.1% (95% CI, 0.0%-0.2%).⁴ In *JAMA Network Open*, Warren et al⁵ present an elegant epidemiological snapshot of sesame allergy in the United States. This study furthers our information about current sesame allergy prevalence in the United States with the largest nationally representative sample to date (51 819 households, representing 40 453 adults and 38 408 children). Among this population, the prevalence of self-reported sesame allergy in children and adults was 0.49%. In addition, the authors provide evidence that convincing sesame allergy, defined as having experienced at least 1 stringent symptom involving a predefined organ system (skin/oral mucosa, gastrointestinal tract, cardiovascular, and respiratory tract), reduced this estimate by approximately half: 0.21% in children, and 0.24% in adults. The resulting estimates of convincing sesame allergy for children and adults are 2-fold lower than the prevalence of peanut allergy in these populations, at 2.2% for children¹ and 1.8% for adults.⁶ However, unlike peanuts, sesame is not currently recognized as a priority (top 8) allergen in the United States and is not legally required to be declared on prepackaged foods.

Among individuals with convincing sesame allergy, 62.2% reported a current epinephrine prescription.⁵ This rate is comparable to reports of children¹ and adults⁶ with peanut allergy. Among those with epinephrine, approximately 33.7% with sesame allergy had used the device at least once in their lifetime. Not surprisingly, emergency department visits were also common, although the study design precluded identification of whether the emergency department visit was the result of sesame allergy or owing to an allergy to other foods.

Concerningly, one-half of children and one-third of adults with sesame allergy reported that they did not have a physician diagnosis of their allergy.⁵ However, severe reactions involving multiple systems were reported by one-third of the population with convincing sesame allergy. Esophageal eosinophilia and food protein-induced enterocolitis were more common in individuals with sesame allergy, compared with individuals with other food allergies.⁵ This raises concerns that patients with sesame allergy may not be identified by traditional screening questions or have limited access to health care professionals.

Warren et al⁵ were limited to a reliance on self-reported allergy instead of confirmatory testing such as skin prick testing, sesame-specific IgE testing, or the research criterion standard, which would be an oral challenge to sesame before diagnosis. Such testing would far exceed the practical and financial limitations of this study. We note that a 2-stage definition approach, involving participant-reported allergy with or without convincing clinical symptoms, has been used in Canada, with comparable results (children, 0.23%; adults, 0.05%).⁷ The strength of the study by Warren et al⁵ and the robustness of the findings lie in the fact that their study involved nearly 10 times more households than the previous US study on the estimates of sesame allergy (51 819 households⁵ vs 5300 households in a 2011 study⁴).

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This study follows on the heels of a US Food and Drug Administration request for more information regarding the prevalence and severity of sesame allergy in the United States. It supports an increasing need for diligence and awareness of the role of sesame allergy in the United States. It also suggests that sesame allergy may be a persistent allergy, affecting children and adults, and may result in severe reactions as well.

Moving forward, the study by Warren et al⁵ provides support for consideration of listing sesame as a top allergen in the United States and including sesame in precautionary labeling. However, questions remain. For example, among the 81.6% of participants with sesame allergy who had multiple food allergies, nearly half had peanut allergy. This demands a need for multiple testing in individuals with suspected sesame allergy who also present with possible peanut allergy and points to a need for ongoing studies to further delineate the natural history of sesame allergy. To our knowledge, there is no known cross-reactivity between the major allergenic proteins in sesame (Ses i 1) and peanut (Ara h 2). Further investigation into sesame and peanut components may be warranted. The cost-effectiveness of such strategies must also be investigated.

In conclusion, the study by Warren et al⁵ provides evidence of the increasing burden of sesame allergy in the United States. The implications of this study, including its role in informing precautionary sesame labeling on packaged foods in the United States, remain to be determined.

ARTICLE INFORMATION

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