

Race and Ethnicity and Food Allergy: Remaining Challenges



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Food allergy is a common chronic condition of childhood, with an increasing prevalence over time.¹ Similar to other chronic pediatric diseases, the burden of disease falls most heavily among historically underrepresented racial and ethnic populations.² Data from the United States and Canada have increasingly shown that food allergy prevalence is suspected to be higher among people of color and that specific types of food allergy in particular may be more common including shellfish, wheat, and nuts.^{3,4} There is evidence that racially underrepresented children are at higher risk of food allergy morbidities, specifically anaphylaxis and the psychosocial burden of disease^{2,3} owing potentially to “awareness, access, and possibly the severity of the child’s food allergy.”⁴

Discourse around race and ethnicity in the food allergic population is underdeveloped in that it often employs a definition of race that does not differentiate between the variable’s genetic and social implications. Although people of color are often defined as vulnerable groups, this is used as a blanket term

to cover a broad range of underlying circumstances that impact health and have the potential to blur associations between race and health outcomes.⁵ The use of race as a construct,⁶ although a fundamental dialogue, has the dangerous potential of insinuating or projecting that it is genetic differences, instead of structural health inequities, that contribute to differences in health.⁵ This contributes to an ongoing structural vulnerability that keeps people of color at risk and provides room for scientific racism.⁵

It is essential that medical research regarding the impact of race and ethnicity accounts for the role of adverse social determinants of health in leveraging health disparities noted in racial and ethnic minority populations (Figure 1). Adverse health outcomes among historically underrepresented minorities in the United States may be explained by structural determinants of health such as inaccessible health care systems, lack of educational funding, and urban racial segregation. As with all determinants of health, poverty is also associated with differences in physical environment, education, and access to health services.⁸

Specific to food allergy, children of color are reported to have poorer access to allergy specialist care, anaphylaxis action plans, and emergency medications (such as self-injectable epinephrine), and are at higher risk of food insecurity, an issue that was present before the pandemic, but even more poignant during the coronavirus disease 2019 (COVID-19) pandemic.^{3,9} Racial and ethnic minorities in the United States are less likely to introduce allergens early into the diet of infants, a food allergy preventive strategy, highlighting limited dissemination and lack of execution of these strategies among racial and ethnic minority families.³ Structural determinants of health, such as housing, may play a role because housing conditions for racial and ethnic minority populations are at increased risk of aeroallergen exposure (including cockroach and dust mite, both of which may increase the risk of sensitization to shellfish).³

It has been noted that, whereas recruiting historically racial and ethnic minority populations in research is an evolving and necessary step, it is likely insufficient at baseline to address the broader structural construct that influences health disparities.¹⁰ Studies need to intentionally address the complex interplay of race and ethnicity within broader social determinants of health. Research is required to better understand what the concept of race means within medicine¹¹—race is defined as a sociocultural construct, not a biological one, that can vary by time and location.¹⁰ As poignantly noted, “race... is associated with markedly different life experiences as well as social and economic opportunities that affect health.”¹⁰ It is not truly genetic vulnerability that contributes to disparities in health outcomes, but the broader social and structural determinants, including systemic disparities in access to health care, that cause these variances. With respect to socioeconomic position, research to date has,

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PROPOSED STEPS MOVING FORWARD



"No lasting changes for all Americans will occur until systemic racism is more directly conceptualized, focused upon, and eradicated."¹⁵

**CLARIFICATION OF
DEFINITIONS OF RACE
AND ETHNICITY**



**UNDERSTANDING OF
SOCIAL DETERMINANTS AS
A CONTRIBUTOR TO
HEALTH OUTCOMES**



**INVOLVEMENT OF EXPERTS IN
HEALTH DISPARITIES IN
ALLERGY RESEARCH**



**FUNDING OF RESEARCH INTO
HEALTH DISPARITIES**



GUIDELINE DEVELOPMENT



**FURTHER EPIDEMIOLOGIC
STUDIES**



CHANGES TO HEALTH POLICY



**BROADER POLICY FOCUS ON
ERADICATION OF RACISM**



FIGURE 1. Proposed steps moving forward.⁷

inadvertently, played a role in “perpetuating health inequities by uncritical adoption of current conventions in the measurement and interpretation of race differentials, as such and particularly with regard to socioeconomic position.”¹² There are racial differences in socioeconomic status that are significant contributors to racial health disparities.¹³

Specific to the role that ethnic and racial disparities may play in food allergy outcomes, there is a lot from a research perspective that we still need to learn regarding health disparities. The only systematic review of racial and ethnic disparity in food allergy in the United States, from 8 years ago, noted significant discrepancies and heterogeneity in the measurement of prevalence, and the definition of food allergy, ultimately noting “sparse and methodologically limited data” about the racial and ethnic disparities in food allergy prevalence in the United States.¹⁴ Studies with consistent definitions of food allergy (such as using an oral food challenge to confirm diagnosis) are required given the imprecision of indirect diagnostic measures such as skin testing, which has poor specificity. Comparisons between White populations and people of color, matched by socioeconomic and geographic status, would provide some insight. To help disentangle the impact of social determinants from that of race or ethnicity, large studies including representative proportions of ethnic and racial minorities may provide further information.

There remain gaps in how to access groups that do not have internet or virtual access, in particular during the current pandemic. Multilingual surveys, accessing communities in their environments through systems navigators or stakeholder representatives, patient engagement, and social media utilization may all increase the likelihood of patient engagement. To further investigate health disparities, a number of solutions have been proposed including experts and community members in health disparities on all study panels, diversification of peer reviewers by race and ethnicity, assignation of a portion of all research studies to addressing health disparities, and supporting research specifically into health disparities.¹⁵

It has been argued that to improve health equity it may be most productive to broadly note that social determinants of health overall seem to contribute to health outcomes, irrespective of the various individual contributions or social constructs of each determinant. Although disentangling the determinants improves our understanding of vulnerability, broad-scale policies (including a focus on health literacy and

access to care) to address these determinants as a whole, instead of trying to isolate and determine the relative contribution of each, may be the first step in improving health equity moving forward.¹² As noted in a review of systemic racism and U.S. health care, “no lasting changes for all Americans will occur until systemic racism is more directly conceptualized, focused upon, and eradicated.”⁷

REFERENCES

- Clarke AE, Elliott SJ, St. Pierre Y, Soller L, La Vieille S, Ben-Shoshan M. Temporal trends in prevalence of food allergy in Canada. *J Allergy Clin Immunol Print* 2020;8:1428-1430.e5.
- Bilaver LA, Kester KM, Smith BM, Gupta RS. Socioeconomic disparities in the economic impact of childhood food allergy. *Pediatrics* 2016;137:e20153678.
- Warren CM, Turner PJ, Chinthrajah RS, Gupta RS. Advancing food allergy through epidemiology: understanding and addressing disparities in food allergy management and outcomes. *J Allergy Clin Immunol Print* 2021;9:110-8.
- Abrams EM, Gerds JD, Gruber J, Lemoine-Courcelles C, Simons E, Penner Protudjer JL. Race/ethnicity, but not income, are associated with increased odds of shellfish allergy. *J Allergy Clin Immunol Print* 2021;9:550-2.
- Katz A, Hardy B, Firestone M, Lofters A, Morton-Ninomiya M. Vagueness, power and public health: use of “vulnerable” in public health literature. *Crit Public Health* 2019;30:601-11.
- Witzig R. The medicalization of race: scientific legitimization of a flawed social construct. *Ann Intern Med* 1996;125:675-9.
- Feagin J, Bennefield Z. Systemic racism and U.S. health care. *Soc Sci Med* 2014;103:7-14.
- World Health Organization. A conceptual framework for action on the social determinants of health. Available from: https://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf. Accessed March 1, 2021.
- Sinha IP, Lee AR, Bennett D, McGeehan L, Abrams EM, Mayell SJ, et al. Child poverty, food insecurity, and respiratory health during the COVID-19 pandemic. *Lancet Respir Med* 2020;8:762-3.
- Wilkins CH, Schindler SE, Morris JC. Addressing health disparities among minority populations: why clinical trial recruitment is not enough. *JAMA Neurol* 2020;77:1063-4.
- Roberts DE. Abolish race correction. *Lancet* 2021;397:17-8.
- Nuru-Jeter AM, Michaels EK, Thomas MD, Reeves AN, Thorpe RJ Jr, LaVeist TA. Relative roles of race versus socioeconomic position in studies of health inequalities: a matter of interpretation. *Annu Rev Public Health* 2018;39:169-88.
- Williams DR, Priest N, Anderson NB. Understanding associations among race, socioeconomic status, and health: patterns and prospects. *Health Psychol* 2016;35:407-11.
- Greenhawt M, Weiss C, Conte ML, Doucet M, Engler A, Camargo CAJ. Racial and ethnic disparity in food allergy in the United States: a systematic review. *J Allergy Clin Immunol Print* 2013;1:378-86.
- Carnethon MR, Kershaw KN, Kandula NR. Disparities research, disparities researchers, and health equity. *JAMA* 2020;323:211-2.