THE FACTS ABOUT

# FOOD ALLERGIES

***AN EVER-PRESENT RISK FOR CHILDREN AND ADULTS***

**In 2024, ~17 million people* in the United States are expected to have a diagnosed food allergy.[1-3] Data from the CDC shows that number is on the rise—particularly among children.[4,5]**

- **3.4 million children are expected to have confirmed diagnosis of food allergy*[1-3]**
- **Most prevalent in ages 12 to 17[6]**
- **Prevalence in children varies across ethnicities: Black (7.6%), Asian (6.6%), White (5.3%), and Hispanic (5.0%)[6]**

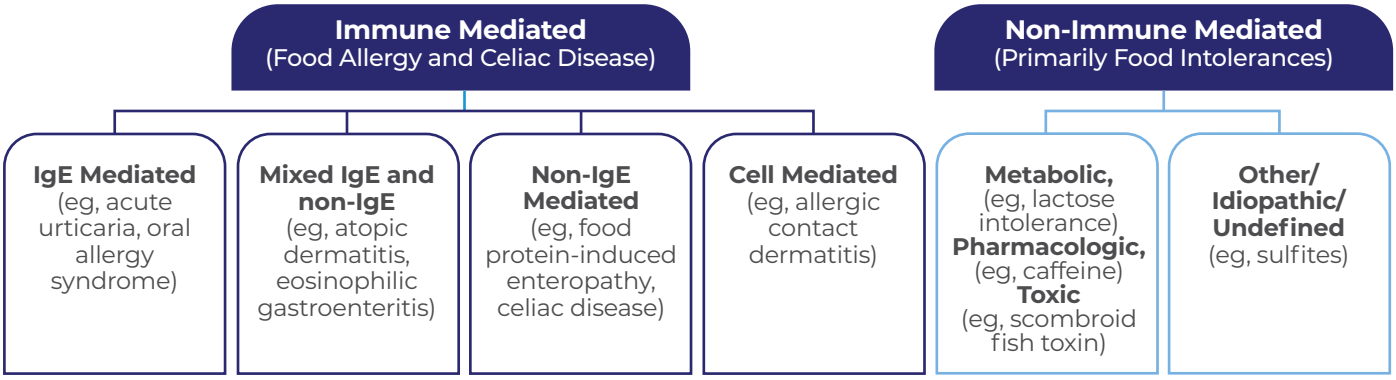
*Population is based on 2024 projected census data.[3]

Roughly **4 in 10** adults and children with food allergy are **allergic to multiple foods** and report a lower quality of life compared to those with a single food allergy.[7,8] In addition, accidental exposures are happening more frequently. Over a decade, ER visits due to food-related anaphylaxis **increased by 124%**.[9†]

## The atopic march: a temporal pattern for developing multiple allergic disorders[10]

Atopic march is the pattern of allergic disorders—from atopic dermatitis to asthma—that progresses over time starting in infancy. **Children with food allergies are 2 to 4 times more likely** to have other allergic conditions such as asthma and atopic dermatitis .[10-12]

## Adverse food reaction classification[13]




**Exposure to even a very small amount of allergenic foods can trigger clinical symptoms** such as GI disorders, urticaria, and airway inflammation that range in severity from mild to life-threatening.[14] Reactions can occur from exposure to food allergens via oral, skin, and respiratory routes.[15]

**IgE-mediated and non IgE-mediated food allergies differ in their time to onset of reaction, typical symptoms, and common diagnostic procedures.[10]**

†2005 to 2014 data from a national administrative claims database.[9]

CDC=Centers for Disease Control and Prevention;
ER=emergency room; GI=gastrointestinal; IgE=immunoglobulin E.

Genentech
A Member of the Roche Group

NOVARTIS

THE FACTS ABOUT

# FOOD ALLERGIES

***AN EVER-PRESENT RISK FOR CHILDREN AND ADULTS***

## The psychosocial and mental health burden of food allergies

Food allergies can have a profound effect on a family's daily life—disrupting aspects of day-to-day living both big and small. Research indicates there are mental health ramifications of living with food allergies including **feelings of fear, depression, anxiety, post-traumatic stress, being bullied, and an overall poorer quality of life.**[19]

The only sure way to avoid a reaction is through food avoidance, so patients and their families must remain constantly vigilant.[17]

Food avoidance can put major limitations on social and school activities, and children may feel different from peers because of dietary restrictions and safety precautions.[18] As a child transitions to adolescence, food allergies become increasingly challenging and potentially dangerous.[16]

- **More than half of patients with multiple food allergies report feelings of anxiety from living with food allergies**[20*]
- **One third of patients with multiple food allergies report feeling concerned about social isolation**[20*]
- **Around half of families indicate food allergies affect family social activities**[11†]
- **Mothers of children with food allergies report greater feelings of stress and anxiety compared to fathers**[16]
- **Some families relying on food banks feel stress due to the difficulty of obtaining allergen-free foods from the food bank**[21]

**Some consideration of food avoidance are accidental exposures and life-threatening reactions, limitations on social activities, dietary restrictions, and the need for constant vigilance and carrying epinephrine therapy at all times.**[17]

*Based on data from a May 2017 to January 2021 survey of 1404 adult and <18-year-old patients with multiple food allergies.[20]
†Based on data from a survey of 87 families of children with food allergies.[11]

Genentech
A Member of the Roche Group

NOVARTIS

THE FACTS ABOUT

# FOOD ALLERGIES

***AN EVER-PRESENT RISK FOR CHILDREN AND ADULTS***

## Managing patients with food allergies

To minimize recurrences of allergic reactions, prevent malnutrition due to food avoidance, and improve quality of life, managing food allergies requires a multidisciplinary approach that involves long-term management strategies and the treatment of acute episodes.[22]

**Food avoidance combined with the availability of rescue epinephrine is crucial in the management of food allergy.[11,18,22]**

However, effective food avoidance requires constant vigilance, training to read food labels, understanding cross-contamination, and often, paying higher food costs.[19,22,23] Accidental exposures can still occur, which can lead to ER visits.[24,25]

## A consensus approach to prevention through nutrition

The following recommendations for food allergy prevention are not intended as medical advice but rather recommendations agreed upon by the AAAAI, ACAAI, and CSACI[26]

1. Consider **infants with severe eczema** at the highest risk of developing food allergy. (Moderate*)
2. **Introduce peanut-containing products to all infants** starting around 6 months of life. (Strong†)
3. **Introduce cooked egg or egg-containing products to all infants** starting around 6 months of life. (Strong)
4. **Do not deliberately delay the introduction of other potentially allergenic complementary foods** (milk, soy, wheat, tree nuts, sesame, fish, crustacean shellfish) once introduction of complementary foods has commenced at around 6 months of life. (Moderate)
5. Upon introducing complementary foods, **infants should be fed a diverse diet**, as this may help foster prevention of food allergy. (Weak‡)
6. **Do not routinely prescribe or recommend the use of any hydrolyzed formula** for the specific prevention of food allergy. (Strong)
7. **Women should not exclude common allergens during pregnancy and lactation** as a means to prevent food allergy. (Weak)

*Moderate recommendations are directly supported by at least one RCT, by at least one controlled study without randomization, or by nonexperimental descriptive studies. Clinicians should generally follow a moderate recommendation but should remain alert to new information and sensitive to patient preferences.

†Strong recommendations are directly supported by at least one RCT, a meta-analysis of RCTs, or by a controlled study without randomization. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.

‡Weak recommendations are supported either by suspect evidence, such as expert committee reports or opinions, or by well-done studies (RCTs, meta-analyses of RCTs, or nonexperimental descriptive studies,) that show little clear advantage to one approach vs another. Clinicians should be flexible in their decision-making regarding appropriate practice, although they may set bounds on alternatives; patient preference should have a substantial influencing role. AAAAI=American Academy of Allergy, Asthma, and Immunology; ACAAI=American College of Allergy, Asthma, and Immunology; CSACI=Canadian Society of Allergy and Clinical Immunology; RCT=randomized controlled trial.

**References:** **1.** Gupta RS, Warren CM, Smith BM, et al. The public health impact of parent-reported childhood food allergies in the United States. *Pediatrics.* 2018:142(6):e20181235. doi:10.1542/peds.2018-3835 **2.** Gupta RS, Warren CM, Smith BM, et al. Prevalence and severity of food allergies among US adults. JAMA Netw Open. 2019;2(1):e185630. doi:10.1001/*jama network open*.2018.5630 **3.** U.S. Census Bureau Population Division. Projected age groups and sex composition of the population: main projections series for the United States, 2017-2060. U.S. Census Bureau: Washington, DC. Revised September 2018. Accessed November 6, 2023. https://www2.census.gov/programs-surveys/popproj/tables/2017/2017-summary-tables/np2017-t2.xlsx **4.** Keet CA, Savage JH, Seopaul S, Peng RD, Wood RA, Matsui EC. Temporal trends and racial/ethnic disparity in self-reported pediatric food allergy in the United States. *Ann Allergy Asthma Immunol.* 2014;112(3):222-229.e3. doi:10.1016/j.anai.2013.12.007 **5.** Jackson KD, Howie LD, Akinbami LJ. Trends in allergic conditions among children: United States, 1997-2011. NCHS Data Brief. 2013;(121):1-8. **6.** Zablotsky B, Black LI, Akinbami LJ. Diagnosed allergic conditions in children aged 0-17 years: United States, 2021. *NCHS Data Brief.* 2023;(459):1-8. **7.** Warren CM, Aktas ON, Manalo LJ, Bartell TR, Gupta RS. The epidemiology of multifood allergy in the United States: A population-based study. *Ann Allergy Asthma Immunol.* 2023;130(5):637-648.e5. doi:10.1016/j.anai.2022.12.031 013 **8.** Warren CM, Jiang J, Gupta RS. Epidemiology and burden of food allergy. *Curr Allergy Asthma Rep.* 2020;20(2):6. doi:10.1007/s11882-020-0898-7 **9.** Motosue MS, Bellolio MF, Van Houten HK, Shah ND, Campbell RL. Increasing emergency department visits for anaphylaxis, 2005-2014. *J Allergy Clin Immunol Pract.* 2017;5(1):171-175.e3. doi: **10.**1016/j.jaip.2016.08 10. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Food and Nutrition Board; Committee on Food Allergies: Global Burden, Causes, Treatment, Prevention, and Public Policy, Oria MP, Stallings VA, eds. *Finding a Path to Safety in Food Allergy: Assessment of the Global Burden, Causes, Prevention, Management, and Public Policy.* Washington (DC): National Academies Press (US); November 30, 2016. **11.** Boyce JA, Assa'ad A, et al. Guidelines for the diagnosis and management of food allergy in the United States: report of the NIAID-sponsored expert panel. *J Allergy Clin Immunol.* 2010;126(suppl 6):S1-S58. doi:10.1016/j.jaci.2010.10.007 **12.** Branum AM, Lukacs SL. Food allergy among U.S. children: trends in prevalence and hospitalizations. *NCHS Data Brief.* 2008;(10):1-8. **13.** Anvari S, Miller J, Yeh CY, Davis CM. IgE-mediated food allergy. *Clin Rev Allergy Immunol.* 2019;57(2):244-260. doi:10.1007/s12016-018-8710-3 **14.** Mayorga C, Palomares F, Cañas JA, et al. New insights in therapy for food allergy. Foods. 2021;10(5):1037. doi:10.3390/foods10051037 **15.** Pelz BJ, Bryce PJ. Pathophysiology of food allergy. *Pediatr Clin North Am.* 2015;62(6):1363-1375. doi:10.1016/j.pcl.2015.07.004 **16.** Feng C, Kim JH. Beyond avoidance: the psychosocial impact of food allergies. *Clin Rev Allergy Immunol.* 2019;57(1):74-82. doi:10.1007/s12016-018-8708-x **17.** Polloni L, Muraro A. Anxiety and food allergy: a review of the last two decades. *Clin Exp Allergy.* 2020;50(4):420-441. doi:10.1111/cea.13548 **18.** Lebovidge JS, Strauch H, Kalish LA, Schneider LC. Assessment of psychological distress among children and adolescents with food allergy. *J Allergy Clin Immunol.* 2009;124(6):1282-1288. doi:10.1016/j.jaci.2009.08.045 **19.** Muraro A, Werfel T, Hoffmann-Sommergruber K, et al. EAACI food allergy and anaphylaxis guidelines: diagnosis and management of food allergy. *Allergy.* 2014;69(8):1008-1025. doi:10.1111/all.12429 **20.** Gupta S, Warren C, Seetasith, A, et al. Mental health concerns of patients and their caregivers in the Food Allergy Research & Education (FARE) patient registry add to the burden of food allergy. Poster presented at: American Academy of Allergy, Asthma & Immunology; February 24-27, 2023; San Antonio, TX. **21.** Minaker LM, Elliott SJ, Clarke A. Exploring low-income families' financial barriers to food allergy management and treatment. *J Allergy (Cairo).* 2014:160363. doi:10.1155/2014/160363 **22.** Moore LE, Stewart PH, deShazo RD. Food allergy: what we know now. *Am J Med Sci.* 2017;353(4):353-366. doi:10.1016/j.amjms.2016.11.014 **23.** Kim JS, Sicherer SH. Living with food allergy: allergen avoidance. *Pediatr Clin North Am.* 2011;58(2):459-xi. doi:10.1016/j.pcl.2011.02.007 **24.** Rudders SA, Arias SA, Camargo CA Jr. Trends in hospitalizations for food-induced anaphylaxis in US children, 2000-2009. *J Allergy Clin Immunol.* 2014;134(4):960-962.e3. doi:10.1016/j.jaci.2014.06.018 **25.** Brooks C, Coffman A, Erwin E, Mikhail I. Diagnosis and treatment of food allergic reactions in pediatric emergency settings. *Ann Allergy Asthma Immunol.* 2017;119(5):467-468. doi:10.1016/j.anai.2017.08.287 **26.** Fleischer DM, Chan ES, Venter C, et al. A consensus approach to the primary prevention of food allergy through nutrition: guidance from the American Academy of Allergy, Asthma, and Immunology; American College of Allergy, Asthma, and Immunology; and the Canadian Society for Allergy and Clinical Immunology. *J Allergy Clin Immunol* Pract. 2021;9(1):22-43.e4. doi:10.1016/j.jaip.2020.11.002


M-US-00022154(v1.0) 12/23

Genentech
A Member of the Roche Group

NOVARTIS