



# FARE

Food Allergy Research & Education

## Food Allergy Facts and Statistics for the U.S.

- Food allergy is a growing public health concern.
- As many as 15 million people have food allergies.<sup>1, 2, 3, 4, 5</sup>
  - An estimated 9 million, or 4%, of adults have food allergies.<sup>2, 3, 5</sup>
  - Nearly 6 million or 8% of children have food allergies with young children affected most.<sup>3, 4, 6, 7, 8</sup>
- Boys appear to develop food allergies more than girls.<sup>5</sup>
- Food allergies may be a trigger for or associated with other allergic conditions, such as atopic dermatitis<sup>9</sup> and eosinophilic gastrointestinal diseases.<sup>10</sup>
- Although childhood allergies to milk<sup>11</sup>, egg<sup>12</sup>, wheat<sup>13</sup> and soy<sup>14</sup> generally resolve in childhood, they appear to be resolving more slowly than in previous decades, with many children still allergic beyond age 5 years. Allergies to peanuts, tree nuts, fish, or shellfish<sup>15</sup> are generally lifelong allergies.

## Food Allergies are on the Rise

- The prevalence of food allergies and associated anaphylaxis appears to be on the rise.<sup>6</sup>
  - In 2008, the CDC reported an 18 percent increase in food allergy among children between 1997 and 2007.<sup>1</sup>
  - According to a study released in 2013 by the Centers for Disease Control and Prevention, food allergies among children increased approximately 50% between 1997 and 2011.<sup>16</sup>
  - The economic cost of children's food allergies is nearly \$25 billion per year.<sup>17</sup>

## Top Food Allergens

- Eight foods account for 90% of all food-allergic reactions: milk, eggs, peanuts, tree nuts (e.g., walnuts, almonds, cashews, pistachios, pecans), wheat, soy, fish, and shellfish.<sup>5, 15, 18, 19, 20, 21, 22, 23, 24, 62</sup> Estimated prevalence<sup>9</sup>, some based on self-report, among the U.S. population:
  - Peanut: 0.6-1.3%
  - Tree nuts: 0.4-0.6%
  - Fish: 0.4%
  - Crustacean shellfish (crab, crayfish, lobster, shrimp): 1.2%
  - All seafood: 0.6% in children and 2.8% in adults

- Milk and egg: based on data within and obtained outside the United States, this rate is likely to be 1-2% for young children and 0.2-0.4% in the general population.

## Managing Food Allergies

### Cooking and Cleaning

- A study showed that peanut can be cleaned from the hands of adults by using running water and soap or commercial wipes, but not antibacterial gels alone. In addition, peanut was cleaned easily from surfaces by using common household spray cleaners and sanitizing wipes but not dishwashing liquid alone.<sup>25</sup>
- Some studies have shown that most individuals with peanut and soy allergies can safely eat highly refined oils made from these ingredients. However, cold-pressed, expeller-pressed, or extruded oils should be avoided. Talk to your doctor about avoiding oils made from ingredients to which you are allergic.<sup>26, 27, 28, 29, 30, 31</sup>
- Casual exposure, such as skin contact and inhalation, to peanut butter is unlikely to elicit significant allergic reactions.<sup>32, 33</sup>
  - *Note: Casual exposure presents a greater risk to young children who frequently put their hands in their mouths. Depending on the amount of contact and the location of the contact, these reactions are occasionally more serious.*<sup>32, 33</sup>
- Food proteins released into the air from vapor or steam from foods being cooked (e.g., fish, milk) can potentially cause allergic reactions, but this is uncommon and has been noted mainly with fish. Reactions from vapor or steam are similar to what you would expect from pollen or animal dander exposures, for example hay fever or asthma symptoms.<sup>8, 34, 35</sup>

### Conventionally Packaged Food Labels

- According to the Food Allergen Labeling and Consumer Protection Act (FALCPA) the major eight allergens must be declared in simple terms, either in the ingredient list or via a separate allergen statement. However, FALCPA does not regulate the use of advisory/precautionary labeling.<sup>36</sup>
  - *Note: Advisory/precautionary labeling (e.g., “may contain”, “in a facility that also processes”) is voluntary. The terms do not reflect specific risks and random products tested for allergens have shown a range of results from none to amounts that can cause reactions.*<sup>9, 37</sup>

### Dining Away From Home

- Eating away from home can pose a significant risk to people affected by food allergy. Research suggests that close to half of fatal food allergy reactions are triggered by food consumed outside the home.<sup>38, 39, 40</sup>
- One study looking at peanut and tree nut allergy reactions in restaurants and other food establishments found that reactions were frequently attributed to desserts, that Asian restaurants and take-out dessert stores (bakeries, ice cream shops) were common sources of foods that triggered reactions, and that the food establishment was often not properly notified of a food allergy by the customer with the allergy.<sup>41</sup>

## Travel

- Research on self reported reactions occurring on commercial airlines show that reactions to peanuts and tree nuts do occur on airlines via ingestion, contact, and inhalation. Ingestion of an allergen remains the main concern for severe reactions.<sup>42, 43, 44</sup>

## Food Allergy Reactions and Anaphylaxis

- The CDC reported that food allergies result in more than 300,000 ambulatory-care visits a year among children under the age of 18.<sup>1</sup>
  - From 2004 to 2006, there were approximately 9,500 hospital discharges per year with a diagnosis related to food allergy among children under age 18 years.<sup>1</sup>
- Even small amounts of a food allergen can cause a reaction.<sup>45, 46, 47, 48, 49, 50</sup>
- Most allergic reactions to foods occurred to foods that were thought to be safe. Allergic reactions can be attributed to a form of mislabeling or cross-contact during food preparation.<sup>38, 39, 40</sup>
- Food allergy is the leading cause of anaphylaxis outside the hospital setting.<sup>51</sup>
  - Every 3 minutes a food allergy reaction sends someone to the emergency department—that is about 200,000 emergency department visits per year, and every 6 minutes the reaction is one of anaphylaxis.<sup>52</sup>
- Teenagers and young adults with food allergies are at the highest risk of fatal food-induced anaphylaxis.<sup>38, 39, 40</sup>
- Symptoms of anaphylaxis may recur after initially subsiding and experts recommend an observation period of about 4 hours to monitor that the reaction has been resolved.<sup>53, 54</sup>
- Individuals with food allergies who also have asthma may be at increased risk for severe/fatal food allergy reactions.<sup>38, 40</sup>
- Children with food allergy are 2-4 times more likely to have other related conditions such as asthma and other allergies, compared with children without food allergies.<sup>1</sup>
- It is possible to have anaphylaxis without any skin symptoms (no rash, hives).<sup>1</sup>
- Failure to promptly (i.e., within minutes) treat food anaphylaxis with epinephrine is a risk factor for fatalities.<sup>38, 39</sup>

## Food Allergy Treatment

- There is no cure for food allergies. Strict avoidance of food allergens and early recognition and management of allergic reactions to food are important measures to prevent serious health consequences.<sup>55</sup>

- Prompt administration (e.g., within minutes of symptoms of anaphylaxis) of epinephrine (adrenaline) is crucial to successfully treating anaphylactic reactions. Epinephrine is available by prescription in a self-injectable device (EpiPen<sup>®</sup>, Auvi-Q<sup>®</sup> or Adrenaclick<sup>®</sup>, depending on local availability).<sup>56</sup>
- There are a number of promising food allergy therapies under study, although none are yet proven for general use.

## Food Allergies in School

- Approximately 20-25% of epinephrine administrations in schools involve individuals whose allergy was unknown at the time of the reaction.<sup>57</sup>
- More than 15% of school aged children with food allergies have had a reaction in school.<sup>58, 59</sup> Food allergy reactions happen in multiple locations throughout the school, and are not limited to the cafeteria. Care must be exercised regarding bake sales, classroom parties, and snacks outside of the cafeteria.<sup>40, 60, 61</sup>

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<sup>2</sup>National Institute of Allergy and Infectious Diseases, National Institutes of Health. *Report of the NIH Expert Panel on Food Allergy Research*. 2006. Retrieved from

[www3.niaid.nih.gov/topics/foodAllergy/research/ReportFoodAllergy.htm](http://www3.niaid.nih.gov/topics/foodAllergy/research/ReportFoodAllergy.htm)

<sup>3</sup>U.S. Census Bureau. *State and County QuickFacts*. 2010. Retrieved from [quickfacts.census.gov/qfd/states/00000.html](http://quickfacts.census.gov/qfd/states/00000.html)

<sup>4</sup>Gupta RS, Springston, MR, Warrier BS, Rajesh K, Pongracic J, Holl JL. The prevalence, severity, and distribution of childhood food allergy in the United States. *J Pediatr*.2011; 128.doi: 10.1542/peds.2011-0204

<sup>5</sup>Liu AH, Jaramillo R, Sicherer SH, Wood RA, Bock AB, Burks AW, Massing M, Cohn RD, Zeldin DC. National prevalence and risk factors for food allergy and relationships to asthma: Results from the National Health and Nutrition Examination Survey 2005-2006. *J Allergy Clin Immunol*.2010; 126: 798-806.

<sup>6</sup>Centers for Disease Control and Prevention. *QuickStats: Percentage of children aged <18 years with food, skin, or hay fever/respiratory allergies --- National health interview survey, United States, 1998—2009*. 2011. Retrieved from [www.cdc.gov/mmwr/preview/mmwrhtml/mm6011a7.htm?s\\_cid+mm6011a7\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6011a7.htm?s_cid+mm6011a7_w)

<sup>7</sup>U.S. Census Bureau. *State and County QuickFacts*.2010. Retrieved from [quickfacts.census.gov/qfd/states/00000.html](http://quickfacts.census.gov/qfd/states/00000.html)

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<sup>9</sup>NIAID-Sponsored Expert Panel. 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(6):S1-S58.

<sup>10</sup>Liacouras CA, Furtura GT, Hirano I, Atkins D, Attwood SE, Bonis PA, et al. Eosinophilic esophagitis: Updated consensus recommendations for children and adults. *J Allergy Clin Immunol*.2011.doi: 10.1016/j.jaci.2011.02.040

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<sup>12</sup>Savage JH, Matsui EC, Skripak JM, Wood RA. The natural history of egg allergy. *J Allergy Clin Immunol* 2007; 120(6):1413-7.

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<sup>14</sup>Savage JH, Kaeding AJ, Matsui EC, Wood RA. The natural history of soy allergy. *J Allergy Clin Immunol* 2010; 125(3):683-6.

<sup>15</sup>Sicherer SH, Munoz-Furlong, A, Sampson HA. Prevalence of seafood allergy in the United States determined by a random telephone survey. *J Allergy Clin Immunol*.2004; 114: 159-165.

<sup>16</sup>Jackson K et al. Trends in Allergic Conditions among Children: United States, 1997-2011. *National Center for Health Statistics Data Brief*. 2013. Retrieved from <http://www.cdc.gov/nchs/products/databriefs/db121.htm>

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