

# Quality of life and psychological issues associated with food allergy

Justin Greiwe, M.D.<sup>1,2</sup>

## ABSTRACT

Food allergies (FA) pose risks beyond just the physical harm caused by anaphylaxis. The psychological consequences associated with an FA diagnosis can arguably be more detrimental for long-term health and quality of life than the consequences of an actual reaction. This can be seen in the hypervigilance of patients and caregivers surrounding mealtime, limited social interactions with peers, strained familial relationships, and increased reluctance to travel.<sup>1</sup> More than 40% of children with FA have experienced at least one severe food-induced reaction. Given the need for daily nourishment, the potential for a very small amount leading to a life-threatening reaction is real, so it is not surprising that fear and anxiety can overwhelm patients with this condition.<sup>1,2</sup> Allergists have a responsibility to recognize the difference between adaptive versus maladaptive anxiety. Whereas the demands of a busy office can often dissuade prolonged in-depth conversations about mental health, there are several validated tools that can be used to quickly and efficiently identify patients at risk. Allergists can play an important role in how an FA diagnosis is conceptualized and whether families leave the office with confidence or with excessive amounts of fear. Instilling a healthy respect for foods without crippling families with anxiety should be the goal of any clinic visit. To provide optimal support and treatment for patients with increased stress and anxiety, there needs to be a more substantial and easily accessible network of mental health professionals integrated within FA treatment centers so that patients and their families have the resources to address their mental health needs.

(J Food Allergy 5:43–48, 2023; doi: 10.2500/jfa.2023.5.230011)

Anxiety disorders remain highly prevalent in patients with chronic diseases, including those with food allergies (FA). In addition, our meta-analysis revealed that the increased risk for anxiety and/or depression in people with chronic physical diseases was 310% (95% CI, 1.8–5.2).<sup>3</sup> The relationship between FA and anxiety is often attributed to FA-specific fears and anxiety rather than a general inclination toward anxiety.<sup>4</sup> In fact, short-lived anxiety related to possible accidental exposure is a common emotion for most patients with FA and can be advantageous because it sustains long-term adherence to allergen avoidance and preparedness in emergency situations.<sup>4</sup> Lower levels of anxiety

or complacency can have the opposite effect, which leads to decreased awareness for hazardous situations. Extremely high levels of anxiety, however, can be counterproductive, which leads to maladaptive coping, long-term sequelae, and impractical restrictions on daily living.<sup>5</sup> As a result, FAs can make simple day-to-day tasks more difficult, which adds increased mental stress to activities that should be routine. Ordinary activities such as grocery shopping, cooking dinner, and preparing snacks require a concerted effort to avoid FA exposure or cross-contamination, which forces families to read ingredient labels and spend more time and money procuring and preparing meals. Gupta *et al.*<sup>6</sup> examined the economic impact of childhood FA in the United States and estimated that out-of-pocket costs were \$5.5 billion annually, with 31% stemming from the cost of special foods. Dining out can be a stress-inducing activity as well, with some families choosing to avoid restaurants entirely, whereas other families settle on “safe” establishments that they exclusively frequent to reduce the chance of FA exposures.

The stress and anxiety surrounding accidental exposures can extend beyond the meal itself, limiting travel, hindering social interactions, and restricting school options. In some cases, parents will forbid their child with an FA to spend the night at friends, fly on an airplane, or attend birthday parties out of fear of accidental exposure.<sup>7,8</sup> In more extreme cases, strict food avoidance in patients with multiple immunoglobulin E (IgE) mediated FAs can be associated with a higher

---

From the <sup>1</sup>Bernstein Allergy Group Inc, Cincinnati, Ohio, and <sup>2</sup>Division of Immunology/Allergy Section, Department of Internal Medicine, The University of Cincinnati College of Medicine, Cincinnati, Ohio

J Greiwe is a speaker and advisor for AstraZeneca, Sanofi Genzyme/Regeneron Abbvie, and Genentech

Funding provided by the Eastern Food Allergy & Comorbidity Conference Presented at the Eastern Food Allergy & Comorbidity Conference, Palm Beach, Florida, January 5, 2023

Address correspondence to Justin Greiwe, M.D., 4665 East Galbraith Rd., Cincinnati, OH 45236

E-mail address: jcgreiwe@gmail.com

This article is distributed under the terms of the Creative Commons Attribution License-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits reproduction and redistribution in any medium or format according to the license terms, provided the work is not used for commercial purposes and provided the original authors and source are properly credited and a link is provided to the Creative Commons license. For commercial permissions, visit <https://oceansidepubl.com/permission-to-use-content/>

Copyright © 2023, The Author(s). Published by OceanSide Publications, Inc., U.S.A.

---

risk of impaired growth and nutritional deficiencies negatively impacting growth and development as well as affecting a child's long-term relationship with food.<sup>9</sup> In some instances, parents feel apprehensive with sending their kids to school, assuming that teachers and/or students might not take their child's food safety seriously, putting them at risk. Although many schools have implemented rules (*e.g.*, peanut-restrictive policies) to keep kids with FAs safe, some parents choose to homeschool due to an underlying fear that food safety policies at schools are not sufficient to protect their children.<sup>8</sup> Although caregivers have every right to be concerned about their child's safety while attending school, analysis of the data would suggest that the majority of food reactions occur at home or at restaurants rather than in a school setting. A recent study that used data collected over a 2-year period from 2822 individuals in the Food Allergy Research and Education registry, found that the home (44%) was the most common location for a reaction, followed by restaurants (21%).<sup>10</sup> Only 6% of food reactions in this cohort occurred at school.<sup>10</sup> Other studies reported 16–18% of children with FA experiencing allergic reactions at school, with 15% requiring epinephrine.<sup>11,12</sup> Bartnikas *et al.*<sup>13</sup> performed a retrospective study that looked at the rates of epinephrine administration in all Massachusetts public schools from 2006 to 2011, comparing those with or without peanut restrictive policies. Although schools with peanut-free tables compared with those without these tables had lower epinephrine administration rates for peanut or tree nut reactions, no policy was associated with a complete absence of allergic reactions.<sup>13</sup> Both self-designated peanut-free schools and schools that banned peanuts from being served in school or brought from home reported allergic reactions to nuts and these policies did not affect epinephrine administration rates.<sup>13</sup>

Caregivers, especially mothers of children newly diagnosed with an FA, can be at particularly high risk for increase anxiety, depression, stress, and decreased quality of life (QoL).<sup>7</sup> In addition to learning how to manage a chronic condition, read labels, prepare special meals, and respond to potentially severe food-induced reactions; caregivers take on the role of gatekeeper for all mealtime activities at home, school, and social events. The unpredictability of FA reactions can further heighten caregiver stress because the constant risk of accidental exposures that leads to a severe reaction can paralyze caregivers, leading them to report increased levels of fatigue, uncertainty, social isolation, reduced spontaneity, and persistent anxiety, fear, and depression.<sup>14</sup> Maintaining constant attentiveness extends beyond mealtime and can lead to monitoring surfaces for possible food contamination, including tabletops, shopping carts, playground equipment, and water fountains. Although this amount of hypervigilance is usually unnecessary to protect kids from allergic reactions, many

caregivers feel that this amount of oversight is necessary to safeguard their children. Supervising all these responsibilities can be draining and can have a considerable impact on caregiver QoL.<sup>15</sup>

Caregivers are also tasked with educating family members, including grandparents, teachers, coaches, and childcare providers. No family activity or vacation can be planned without considering a child's FA diagnosis, which leaves most major outings centered around that child's needs. Although a certain amount of vigilance is required to create a safe environment, high levels of sustained worry can be detrimental to caregivers and has the potential to unintentionally effect children living in the household. There are few data that document the negative impact that chronic disease has on the psychological health of family members, and we see similar trends in families with children with FA.<sup>16</sup>

Although caregivers can become overwhelmed with the possibility of life-threatening consequences for their child with FA, the statistics about adverse outcomes in this patient population are much more encouraging. The perception of the public is that fatal anaphylaxis risks are very high and hypervigilance is required to prevent this drastic outcome. In reality, the risk of fatal food anaphylaxis for an individual with FA is very low and adds little to overall mortality risk for those who have this condition.<sup>17</sup> Despite the increased incidence of FA rates and nonfatal food anaphylaxis in the United States over the past few decades, there has not been a parallel increase in fatalities from anaphylaxis. In fact, the reported range of mortality in the general population is ~0.03 to 0.3 deaths per million person years.<sup>18</sup> To put this into perspective, the estimated rate of fatal food anaphylaxis compared with other risks for the general population would place death from FA at about the same risk as death due to lightning strike (~1 in 10 million).<sup>18</sup> For a more granular view, the estimated rate of fatal food anaphylaxis for people with known FA would place death from FA less likely than death due to fire or murder.<sup>18</sup> Although analysis of the data confirms that fatal food reactions are a rare occurrence, when deaths do occur, they tend to garner a lot of media attention, creating the perception that fatal reactions are more common than they actually are.

In addition to sensationalized stories in the media, patients and caregivers can be bombarded with misleading information from other sources as well. Internet search engines, *e.g.*, "Dr. Google," and seeking out answers in social media groups can often lead to increased anxiety because the information gleaned from these recourses are not valid or credible and are often rooted in the extremes. Allergists can play an important role in preventing families from being misinformed by providing vetted educational resources at the time of diagnosis as well as referrals to reliable FA organizations and web sites that have a proven track record. Messaging

at the time of diagnosis is also very important. When physicians provide adequate up-to-date information, patients are more likely to be satisfied with their care. Other factors that can improve patient satisfaction include patient-centered empathic communication and partnership building. Allergists should emulate this approach by encouraging patients to share their perspective and address their preferences, values, and needs.

Bullying is an unrecognized and underreported aspect of living with FA that can affect patients' QoL and leads to increased anxiety, especially in the school setting. A survey conducted by Lieberman *et al.*<sup>19</sup> found that 24% of all teens and adults with FA had been harassed at some point in their lives, with 82% of incidents that occurred at school and mainly instigated by classmates (although 21% noted that teachers or school staff could be perpetrators as well). Of those bullied, 57% described being forcibly touched by an allergen, having an allergen thrown or waved at them, or being intentionally contaminated with their food allergen by a classmate.<sup>19</sup>

These experiences, along with the stress of living with a chronic condition, can lead to a variety of mental health issues and feelings of isolation, especially in the adolescent population. A study of 10–16-year-olds with FAs found that they experienced higher levels of separation anxiety, generalized anxiety, anorexia nervosa, and depression.<sup>20</sup> Another survey found that emotional and behavioral problems, particularly symptoms of depression, anxiety, and Attention-deficit/hyperactivity disorder (ADHD), were more common among adolescents with FA than in the general population.<sup>21</sup>

Although a large proportion of patients with FA in allergists' offices will have some level of anxiety, it is important that physicians have the tools necessary to recognize the difference between adaptive versus maladaptive anxiety. Although the demands of a busy allergy office often dissuade prolonged in-depth conversations about mental health issues, there are several validated tools that can be used to identify patients at risk quickly and efficiently. These tools can focus on anxiety in specific patient populations or be geared toward caregivers. They can also screen for poor QoL, providing insight into how FA is affecting daily activities and functioning. The free screening tools listed in Table 1 are validated and have been extensively used in both research and clinical settings.<sup>22–30</sup> All four versions of the Scale of Food Allergy Anxiety are downloadable on the Children's Hospital of Philadelphia web site and free to use for non-commercial research and clinical purposes. Any other use requires written permission of the authors. Online versions of the various Food Allergy Quality of Life Questionnaires are available free of charge and several are available in multiple languages.<sup>31</sup> In a perfect world, every patient with an FA would be screened with a validated FA anxiety questionnaire. The reality is that this approach is too time consuming in a hectic practice. The goal should be to use these validated tools to screen any patients the clinician deems appropriate after obtaining a thorough clinical history. Sometimes recognizing patients at risk and parents takes time and might require multiple visits to understand the depths with which an FA diagnosis is affecting the family.

**Table 1 Disease-specific health-related quality of life and anxiety questionnaires for patients with food allergy**

Food allergy health-related quality of life questionnaires

1. FAQLQ filled out by the patients themselves\*
  - a. Child Form, 8–12 years old (FAQLQ-CF)
  - b. Teenager Form, 13–17 years old (FAQLQ-TF)
  - c. Adult Form, ≥18 years old (FAQLQ-AF)
2. FAQLQ filled out by the parents of children with food allergy
  - a. Parent Form, 0–12 years old (FAQLQ-PF)
  - b. Parent Form Teenager, 13–17 years old (FAQLQ-PFT)

Food allergy anxiety questionnaires

1. SOFAA#
  - a. 21-Item: self-rated questionnaire for children and adolescents (8–18 years old) to assess food allergy-related anxiety and related anxious avoidance behaviors over the past week (SOFAA-C)
  - b. 21-Item: corresponding parent-rated version; parents rate their perceptions of their child's food allergy-related anxiety and anxious avoidance over the past week (SOFAA-P)
2. IMPAACT

FAQLQ = Food Allergy Quality of Life Questionnaires; SOFAA = Scale of Food Allergy Anxiety; IMPAACT = Impairment Measure for Parental Food Allergy-Associated Anxiety and Coping Tool.

\*The FAQLQ-CF contains 24 items and 4 domains, the FAQLQ-TF contains 23 items and 3 domains, and the FAQLQ-AF contains 29 items and 4 domains; the total FAQLQ score is the sum of all the items divided by the number of items and ranges from 1 (minimal impairment in health-related quality of life) to 7 (maximal impairment in health-related quality of life).

#Shorter screening measures (SOFAA-C-brief and SOFAA-P-brief) are also reliable and validated.

When considering the safety of medical interventions in the FA space, such as oral food challenges (OFC), sublingual immunotherapy, or oral immunotherapy (OIT) can also be anxiety producing for many parents and patients. Proximity and contact challenges have been used in situations in which families are extremely nervous and concerned that airborne or contact exposures will cause anaphylactic reactions. To desensitize families to this fear, a stepwise proximity challenge can be pursued in the office. When successfully performed, these challenges have been shown to significantly reduce anxiety by normalizing exposures in a controlled and safe setting. Dinakar *et al.*<sup>32</sup> outlined an example of a peanut butter proximity challenge by bringing an open jar of peanut butter increasingly closer to the patient until it is ~12 inches away from the face. The open jar is kept there for ~10 minutes and, if no reaction occurs, then the patient can be confident that airborne exposures are not a risk. For contact reaction concerns, Dinakar *et al.*<sup>32</sup> propose dabbing a small amount of peanut butter on intact skin of the volar surface of the arm. Five minutes later, the food allergen is washed off with soap and water, and if no reaction occurs, then this can effectively rule out contact exposure as a cause for concern. No systemic reactions were reported in this study, and only one urticarial reaction at the application site was observed. In situations in which there is heightened anxiety about a specific real-world encounter, an allergist can attempt to mimic the provocative scenario in a double-blind placebo controlled fashion. Although peanut butter was used in the examples listed above, other foods can be substituted, depending on the needs of the patient.

Proximity and contact challenges are useful anxiety-reducing tools in patients with confirmed IgE-mediated FAs but OFCs can be invaluable in ruling out an FA. Regardless of the outcome, OFCs have been shown to improve food-related QoL, decrease fear of accidental exposures, and increase confidence in treating reactions.<sup>33</sup> These outcomes were reported even if the child experienced an allergic reaction during the challenge because parents appreciated the ability to witness a reaction in a controlled setting along with observing how and when to safely administer the appropriate treatment. Herbert *et al.*<sup>34</sup> showed decreased levels of maternal anxiety about future reactions after seeing their child successfully tolerate an allergenic food in smaller quantities. Even mothers whose children did not pass the food challenge reported no increase in their level of anxiety and found it helpful to see what types of reactions could potentially occur in a controlled setting, which suggested that even failed OFCs can be used as a teaching tool both during and after reactions.

After a failed OFC, some patients and parents may opt to proceed with OIT. Although OIT has been shown to successfully desensitize patients with FA in most candidates, not all patients have successful outcomes. Despite the risks and benefits of this therapy, several studies have demonstrated the advantage of OIT with regard to reduction in food-related anxiety as well as improved QoL. Patients in OIT have been shown to experience reduced anxiety, increased social engagement, reduced fear of accidental exposure, and reduced psychosocial burden.<sup>35</sup> Of course, the opposite can be true when patients experience frequent adverse reactions during treatment. A 2019 systematic review and meta-analysis showed that OIT regimens considerably increased allergic and anaphylactic reactions over avoidance or placebo; therefore, it is essential that patients and parents are well versed in the advantages and disadvantages of OIT before getting started.<sup>36</sup> It is important to note that the detrimental effect of OIT on some patients' QoL during up-dosing can be reversed on reaching maintenance. During OIT, patients can experience treatment-related symptoms of allergic reactions that can cause increased anxiety and lead to treatment dropout. The allergist can play an important role in patient outcomes, depending on how he or she frames the OIT conversation before, during, and after maintenance dosing is reached. Fostering a positive mindset for families pursuing treatment can have impressive results. Howe *et al.*<sup>37</sup> looked at 50 children and/or adolescents with non-life-threatening symptoms during OIT. Twenty-four families were told symptoms experienced during OIT were unfortunate adverse effects of treatment, whereas 26 families were told that symptoms could signal food desensitization. Compared with families informed that symptoms were adverse effects, families informed that symptoms could signal desensitization were less anxious, less likely to contact staff about symptoms, experienced fewer non-life-threatening symptoms as doses increased, were less likely to skip and/or reduce doses, and showed a greater increase in patient peanut-specific blood IgG4 levels.<sup>37</sup>

Although OFCs and OIT can have indirect effects on food-related anxiety and QoL, cognitive behavioral therapy (CBT) administered by a licensed mental health professional is a more direct route that allergists can take to reduce the psychological impact of FA. CBT at its core assesses emotions, behaviors, and negative thoughts to see how they are causing and perpetuating anxiety and depression in a patient with FA.<sup>7</sup> Once these measures are assessed, CBT uses techniques to modify thoughts and behaviors to improve mood and anxiety, giving the patient more effective tools to address his or her negative emotions head on. Several studies have shown that targeted CBT can significantly lessen FA-related anxiety for both children

and parents. Knibb,<sup>38</sup> *e.g.*, looked at CBT for a total of 12 weeks as an intervention for mothers of children with FAs and saw decreased anxiety and depression and increased mental health QoL.

Once children and families with psychosocial needs are identified, allergists can refer them to mental health professionals when appropriate. Unfortunately, access to mental health professionals who specialize in FA-related anxiety and CBT is limited, especially in more rural areas of the country. To help connect with allergy-informed clinical behavioral health professionals, consider visiting The Food Allergy Counselor Directory.<sup>39</sup> This site provides a directory of therapists who have a more nuanced understanding of FAs and related allergic diseases. Most therapists still offer telehealth options, so they do not need to be local but do need to be listed in the same state. FA support groups, both in person and online, can be a safe space for parents to discuss their concerns with other parents and gain helpful tips from families who have much more experience dealing with FAs. Facebook has several parent support groups with hundreds of members, which can be useful forums to learn more about FAs as well as commiserate and receive encouragement from other families facing similar challenges. Participation in online support groups, as with any social media platform, should be approached with caution because these forums can oftentimes be counterproductive, leading to even more anxiety due to the toxic nature of the comment sections and misinformation being posted by certain members. There are several nonprofit private organizations, including the Food Allergy Research and Education and the Food Allergy and Anaphylaxis Connection Team, that are dedicated to FA awareness, research, and advocacy as well as being great educational resources. Some of these organizations also host FA summits and camps across the country, giving kids a safe space to gather and socialize with other friends with FA. The therapeutic benefit of FA camps was investigated by Knibb *et al.*,<sup>40</sup> who looked at a cohort of 11–12-year-olds who attended a week-long camp that provided an allergen-free setting with various confidence-building activities and workshops. Validated questionnaires (including the pediatric food allergy—specific QoL questionnaire [PFA-QL]) were taken at baseline, at the start of the camp, at the end of the camp, and at 3- and 6-month follow-up. Based on the researchers' findings, there were significant improvements in social QoL as well as FA-specific QoL ( $p > 0.05$ ).<sup>40</sup> There were significant decreases in total anxiety and obsessive-compulsive disorder scores ( $p < 0.05$ ) with participants reporting gains in confidence in talking to others about their FAs and an increased sense of agency in managing their own health.<sup>40</sup> Studies such as this reinforce the importance of providing support and

education to children with FAs so they can take better control of their own health. Allergists can take a more active role in FA education and outreach by becoming involved with these organizations. Sharma *et al.*<sup>41</sup> studied the effect of having an allergist speak at a FA support group and found that >50% of parents felt that the allergist helped them feel more at ease speaking with their own child's allergist, with two thirds of responders experiencing decreased anxiety and two thirds showing improved child's QoL.

It is essential that allergists understand and are equipped with the skills necessary to address underlying mental health issues related to FAs. The emotional toll FA has on both caregivers and patients are likely underreported, underrecognized, and inadequately treated. Unfortunately, most allergists do not have the time or access to local mental health professionals who specialize in treating FA anxiety or who provide CBT. Allergists also lack the tools or training necessary to address mental health with their patients, which leaves many patients and caregivers to suffer in silence. This inadequacy was highlighted in a recent study that evaluated the utility of clinician screening for anxiety in patients with FA.<sup>42</sup> Thirty-nine patients completed an anxiety questionnaire while their allergists completed a companion questionnaire estimating their patient's responses. Allergists then attended an educational workshop to improve their anxiety detection, and the same process was repeated with an additional 39 patients. Despite receiving training, allergists were not more successful in identifying patients at risk, with only 25% of anxious patients accurately classified. Allergists reported no time to implement screening questions into their practice and found the process to be intrusive. Based on these findings, it seems imperative that alternative methods for uncovering anxiety among patients at high risk are created.

Sadly, there is scant longitudinal research in this space, so allergists must take a more assertive role in recognizing maladaptive anxiety and encourage psychological support when needed. Instilling a healthy respect for foods without crippling families with anxiety and fear should be the goal of any clinic visit. To provide optimal support and treatment for patients and caregivers who are experiencing increased stress and anxiety about their FA diagnosis, there needs to be a more substantial and easily accessible network of mental health professionals integrated within FA treatment centers. Allergists could also benefit from formal mental health training during fellowship and continuing medical education to keep these issues front of mind. FA does not have to define the patient, and patients should leave allergists' offices with a sense of confidence and empowerment, not fear and despair.

## REFERENCES

1. Warren CM, Gupta RS, Sohn M-W, et al. Differences in empowerment and quality of life among parents of children with food allergy. *Ann Allergy Asthma Immunol.* 2015; 114:117–125.
2. Gupta RS, Springston EE, Warrior MR, et al. The prevalence, severity, and distribution of childhood food allergy in the United States. *Pediatrics.* 2011; 128:e9–e17.
3. Daré LO, Bruand P-E, Gérard D, et al. Co-morbidities of mental disorders and chronic physical diseases in developing and emerging countries: a meta-analysis. *BMC Public Health.* 2019; 19:304.
4. Polloni L, Muraro A. Anxiety and food allergy: a review of the last two decades. *Clin Exp Allergy.* 2020; 50:420–441.
5. Cummings AJ, Knibb RC, King RM, et al. The psychosocial impact of food allergy and food hypersensitivity in children, adolescents and their families: a review. *Allergy.* 2010; 65:933–945.
6. Gupta R, Holdford D, Bilaver L, et al. The economic impact of childhood food allergy in the United States. *JAMA Pediatr.* 2013; 167:1026–1031.
7. Feng C, Kim J-H. Beyond avoidance: the psychosocial impact of food allergies. *Clin Rev Allergy Immunol.* 2019; 57:74–82.
8. Bollinger ME, Dahlquist LM, Mudd K, et al. The impact of food allergy on the daily activities of children and their families. *Ann Allergy Asthma Immunol.* 2006; 96:415–421.
9. Sova C, Feuling MB, Baumler M, et al. Systematic review of nutrient intake and growth in children with multiple IgE-mediated food allergies. *Nutr Clin Pract.* 2013; 28:669–675.
10. Oriol RC, Waqar O, Sharma HP, et al. Characteristics of food allergic reactions in United States restaurants. *J Allergy Clin Immunol Pract.* 2021; 9:1675–1682.
11. Nowak-Wegrzyn A, Conover-Walker MK, Wood RA. Food-allergic reactions in schools and preschools. *Arch Pediatr Adolesc Med.* 2001; 155:790–795.
12. Sicherer SH, Furlong TJ, DeSimone J, et al. The US Peanut and Tree Nut Allergy Registry: characteristics of reactions in schools and day care. *J Pediatr.* 2001; 138:560–565.
13. Bartnikas LM, Huffaker MF, Sheehan WJ, et al. Impact of school peanut-free policies on epinephrine administration. *J Allergy Clin Immunol.* 2017; 140:465–473.
14. Akesson N, Worth A, Sheikh A. The psychosocial impact of anaphylaxis on young people and their parents. *Clin Exp Allergy.* 2007; 37:1213–1220.
15. Fedele DA, McQuaid EL, Faino A, et al. Patterns of adaptation to children's food allergies. *Allergy.* 2016; 71:505–513.
16. Holmes AM, Deb P. The effect of chronic illness on the psychological health of family members. *J Ment Health Policy Econ.* 2003; 6:13–22.
17. Umasunthar T, Leonardi-Bee J, Hodes M, et al. Incidence of fatal food anaphylaxis in people with food allergy: a systematic review and meta-analysis. *Clin Exp Allergy.* 2013; 43:1333–1341.
18. Turner PJ, Jerschow E, Umasunthar T, et al. Fatal anaphylaxis: mortality rate and risk factors. *J Allergy Clin Immunol Pract.* 2017; 5:1169–1178.
19. Lieberman JA, Weiss C, Furlong TJ, et al. Bullying among pediatric patients with food allergy. *Ann Allergy Asthma Immunol.* 2010; 105:282–286.
20. Shanahan L, Zucker N, Copeland WE, et al. Are children and adolescents with food allergies at increased risk for psychopathology? *J Psychosom Res.* 2014; 77:468–473.
21. Ferro MA, Van Lieshout RJ, Ohayon J, et al. Emotional and behavioral problems in adolescents and young adults with food allergy. *Allergy.* 2016; 71:532–540.
22. Flokstra-de Blok BM, DunnGalvin A, Vlieg-Boerstra BJ, et al. Development and validation of a self-administered Food Allergy Quality of Life Questionnaire for children. *Clin Exp Allergy.* 2009; 39(1):127–37.
23. Flokstra-de Blok BM, DunnGalvin A, Vlieg-Boerstra BJ, et al. Development and validation of the self-administered Food Allergy Quality of Life Questionnaire for adolescents. *J Allergy Clin Immunol.* 2008; 122(1):139–44, 144.e1–144.e2.
24. Flokstra-de Blok BM, van der Meulen GN, DunnGalvin A, et al. Development and validation of the Food Allergy Quality of Life Questionnaire – Adult Form. *Allergy.* 2009; 64(8):1209–1217.
25. DunnGalvin A, de BlokFlokstra BM, Burks AW, et al. Food allergy QoL questionnaire for children aged 0–12 years: content, construct, and cross-cultural validity. *Clin Exp Allergy.* 2008; 38(6):977–986.
26. Muraro A, Dubois AEJ, DunnGalvin A, et al. EAAACI Food Allergy and Anaphylaxis Guidelines. Food allergy health-related quality of life measures. *Allergy.* 2014; 69:845–853.
27. Cortes A, Castillo A, Sciaraffia A. Development of the scale of psychosocial factors in food allergy (SPS-FA). *Pediatr Allergy Immunol.* 2013; 24:671–677.
28. Knibb RC, Ibrahim NF, Petley R, et al. Validation of the Paediatric Food Allergy Quality of Life Questionnaire (PFA-QL). *Pediatr Allergy Immunol.* 2013; 24:288–292.
29. Dahlsgaard KK, Wilkey LK, Stites SD, et al. Development of the Child- and Parent-Rated Scales of Food Allergy Anxiety (SOFAA). *J Allergy Clin Immunol Pract.* 2022; 10:161–169.e6.
30. To S, Westwell-Roper C, Soller L, et al. Development of IMPAACT (Impairment Measure for Parental Food Allergy-Associated Anxiety and Coping Tool), a validated tool to screen for food allergy-associated parental anxiety. *Ann Allergy Asthma Immunol.* 2022; 129:451–460.e3.
31. Van Der Molen T, Kocks J. Food Allergy Quality of Life Questionnaire. October, 2011. Accessed July 11, 2023. <http://faqlq.com/>.
32. Dinakar C, Shroba J, Portnoy JM. The transforming power of proximity food challenges. *Ann Allergy Asthma Immunol.* 2016; 117:135–137.
33. Knibb RC, Ibrahim NF, Stiefel G, et al. The psychological impact of diagnostic food challenges to confirm the resolution of peanut or tree nut allergy. *Clin Exp Allergy.* 2012; 42:451–459.
34. Herbert LJ, Dahlquist LM, Bollinger ME. Maternal intolerance of uncertainty, anxiety, and adherence with food challenge referrals. *J Health Psychol.* 2013; 18:1209–1219.
35. Epstein-Rigbi N, Goldberg MR, Levy MB, et al. Quality of life of food-allergic patients before, during, and after oral immunotherapy. *J Allergy Clin Immunol Pract.* 2019; 7:429–436.e2.
36. Chu DK, Wood RA, French S, et al. Oral immunotherapy for peanut allergy (PACE): a systematic review and meta-analysis of efficacy and safety. *Lancet.* 2019; 393:2222–2232.
37. Howe LC, Leibowitz KA, Perry MA, et al. Changing patient mindsets about non-life-threatening symptoms during oral immunotherapy: a randomized clinical trial. *J Allergy Clin Immunol Pract.* 2019; 7:1550–1559.
38. Knibb RC. Effectiveness of cognitive behaviour therapy for mothers of children with food allergy: a case series. *Healthcare (Basel).* 2015; 3:1194–1211.
39. Hubbard T. The Food Allergy Counselor, Inc. September 20, 2023. Accessed June 23, 2023. <https://www.foodallergyadvisor.com/>.
40. Knibb RC, Hourihane JO. The psychosocial impact of an activity holiday for young children with severe food allergy: a longitudinal study. *Pediatr Allergy Immunol.* 2013; 24:368–375.
41. Sharma A, Prematta T, Fausnight T. A pediatric food allergy support group can improve parent and physician communication: results of a parent survey. *J Allergy (Cairo).* 2012; 2012:168053.
42. Rubes M, Podolsky AH, Caso N, et al. Utilizing physician screening questions for detecting anxiety among food-allergic pediatric patients. *Clin Pediatr (Phila).* 2014; 53:764–770. □