

# New issue of food allergy: Phobia of anaphylaxis in pediatric patients



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Your 10-year-old patient with peanut allergy has come for her annual appointment. Her allergy was identified after an anaphylactic event as a toddler that she does not remember.

The main concern described by parents is not the food allergy, but anxiety. Over the last year—after experiencing minor allergic symptoms that did not require epinephrine—the child has become increasingly fearful of accidental cross-contamination, even under the most remote of circumstances. She no longer sits near someone eating peanut butter and runs from a room if she smells it. She has stopped eating with friends at school or going on playdates without her mother. There is overwashing of hands and “constant” seeking of reassurance that minor stomach aches or “feeling hot” aren’t signs of an impending allergic reaction.

The patient’s mother has grown preoccupied with news reports of anaphylactic deaths that are shared on social media. She complains that her husband is “too cavalier” about food safety while he snaps back that his wife has become “too coddling.” He then begrudgingly admits that he recently removed all peanut products from the family home, such that their daughter can have “one safe place” where she “doesn’t have to feel anxious about her allergy.” This has led to conflicts with her siblings, who want to eat peanut butter sandwiches and enjoy their Halloween candy in relative peace.

You wonder if this level of anxiety warrants referral to a mental health provider, and which type? So many of your patients present with comorbid anxiety these days, and you want to make sure they receive evidence-based, effective care.

## WHEN IS ANXIETY IN THE CONTEXT OF FOOD ALLERGY “EXCESSIVE?”

A certain level of anxiety, vigilance, and avoidance is adaptive in children with food allergies and other anaphylactic conditions. Anxiety may also increase after diagnosis, an allergic reaction, or when the child moves toward greater autonomy and negotiates new social situations with less parental supervision.<sup>1</sup> This anxiety is typically temporary and support plus education by the care provider will generally prove sufficient.<sup>2</sup>

In contrast, the hallmark of *excessive* anxiety is not merely the intensity of emotional distress, but rather the persistence of unnecessary and unhelpful avoidance as the main “coping” strategy to alleviate that distress.<sup>3</sup> Children with food allergy who have a personal or family history of another anxiety disorder, are female, have experienced previous traumatic events (including anaphylaxis), or have parents with high anxiety and an overprotective style may be particularly at risk.<sup>4</sup> As in the case example above, when children with allergy or their anxious parents avoid situations in which the risk of accidental ingestion is very low, all family members can feel a temporary relief that inadvertently drives increased anxiety via a spiral of negative reinforcement (see Fig 1). Even when the avoidance becomes excessive and compromises daily functioning, it may appear to be “working,” if the child does not experience an anaphylactic reaction. Risk assessment grows increasingly faulty, and the family vigilance required to maintain this level of avoidance encourages an anxious preoccupation with worst-case scenarios.

Health care providers can quickly screen for excessive anxiety by inquiring about the extent and duration of medically unnecessary avoidance of developmentally appropriate activities: “Does your child refuse new but allergen-free foods due to fears of an allergic reaction? Even if food is brought from home, does your tween/teen refuse to attend parties or sleepovers due to fears of cross-contamination?” Patients with such persistent avoidance (diagnostic criteria typically invoke 6 months) and functional impairment might indeed qualify for an anxiety disorder, “specific phobia of anaphylaxis,” and warrant a referral to a behavioral health provider for further assessment and treatment.

## WHAT IS THE EVIDENCE-BASED PSYCHOTHERAPY FOR PEDIATRIC ANXIETY DISORDERS?

There is a dearth of empirical treatment literature for children with a diagnosed anxiety disorder in the context of food allergies and other anaphylactic conditions.<sup>1</sup> Fortunately, well-controlled studies have established cognitive-behavior therapy (CBT) as an efficacious and recommended first-line psychosocial treatment for child anxiety disorders, including specific phobias, largely due to CBT’s superiority over waitlist control conditions.<sup>4</sup> CBT for child anxiety disorders has not consistently outperformed active control conditions, and an emerging line of research suggests that this may be due to the underuse—particularly with children—of the most active component of anxiety treatment protocols, namely, exposure.<sup>5</sup>

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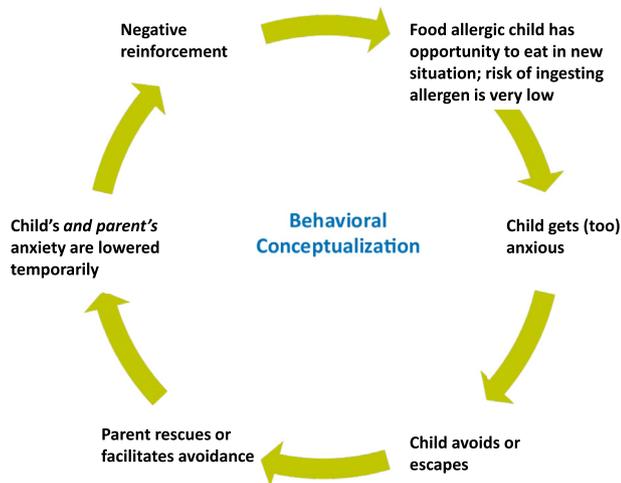
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**FIG 1.** Behavioral conceptualization for escalating avoidance-anxiety cycle for children with food allergy and their caregivers.

Exposure is the process by which individuals directly challenge catastrophic, anxiety-driven beliefs via safe behavioral experiments. During such treatment, individuals gradually expose themselves to situations that arouse fearful expectations and learn that the feared outcome does not happen and the anxiety they feel is manageable.<sup>6</sup>

Hence exposure—more directly and efficiently than other common anxiety treatment components such as relaxation or cognitive restructuring (“bossing back anxious thoughts”)—addresses the unnecessary avoidance theorized as common across all anxiety disorders. Despite this, exposure-based therapy is not well-disseminated, with only 10% to 30% of clinicians in practice reporting that they use it. Common clinician misgivings include concerns that exposure is too distressing, will compromise rapport, is not appropriate for children, or somehow increases the chance of the feared outcome.<sup>7</sup>

Given this, we theorize that mental health providers may be *particularly reluctant* to use exposure for anxious children with food allergies, under the mistaken belief that it places the child at increased risk for anaphylactic reaction.

This is unfortunate. Just as exposure therapy for specific phobia of choking does not prescribe practicing choking (dangerous! Not a good exposure!), exposure therapy for specific phobia of anaphylaxis does not include inducing an anaphylactic reaction. Rather, in the case of food allergies, exposure treatment might include gradual “brave practices” of any activity that the child is unnecessarily avoiding, such as attending school; participating in sports, social, or other age-appropriate activities; eating unfamiliar but allergen-free foods; placing the allergen closer while playing or eating; smelling or touching the allergen, all while following basic safety procedures. Given the role that parental anxiety can exacerbate and perpetuate child anxiety, more difficult exposures can first be accomplished in family-based sessions, with therapists initially modeling the procedures and then coaching parents to take the lead. All exposures should be assigned for repeated practice at home and in community settings to maintain and generalize gains as well as build the confidence and skill of safe allergy management among family members and other caregivers (eg, grandparents, childcare providers, and school personnel).

We note that several empirical articles written by allergists already depict the very type of therapeutic exposures established

as effective for anxiety in the psychiatric literature. For instance, double-blind placebo-controlled studies showed that children allergic to peanut did not have systemic reactions when they deliberately inhaled or had direct skin contact with their allergen.<sup>8,9</sup> Dinakar et al<sup>10</sup> described adapting these experimental protocols to the office setting in the form of “proximity food challenges,” and recommended allergists offer them during routine clinical visits to reduce anxiety and improve quality of life.

## CONCLUSIONS AND RECOMMENDATIONS

As the prevalence of food allergy increases, we can expect that the number of our patients who present with impairing anxiety in the context of food allergy will increase as well. The misinformation and preoccupation with tragic but rare outcomes spread on social media will exacerbate anxiety by negatively influencing risk assessment and encouraging families to engage in medically unnecessary avoidance. This problem will be compounded when families and health care providers alike are unsure as to what is the evidence-based therapy for anxiety disorders, including specific phobia of anaphylaxis.

We propose that *exposure-based* CBT is appropriate for children with specific phobia of anaphylaxis and should be recognized as the preferred treatment due to an already-established literature. Moreover, we believe that exposure-based therapy is *particularly well-suited* for the allergy population: Although the children (and perhaps their parents) (and perhaps their therapists) may initially find exposures distressing, this treatment targets the kinds of medically unnecessary avoidance that maintains excessive anxiety and reduces quality of life. It also provides experiential proof against common myths of causes of allergic reactions, and equips the family with practical skills and confidence that the child can safely navigate a world that is decidedly not allergen-free. Although tempting when a provider encounters severe parent or child anxiety, recommendations for non-exposure-based interventions—particularly those that advocate avoidance of safe, age-appropriate activities such as school attendance—risk exacerbating anxiety via the feedback mechanism described here and depicted in Fig 1.

We have created an anxiety clinic within our Food Allergy Center, jointly staffed by a cognitive-behavioral psychologist and medical providers. We find that exposure-based interventions similar to those described above not only reduce anxious avoidance, but that our families report a high level of adherence and satisfaction with the treatment. We hope that allergy specialists will identify problematic anxiety as *persistent, unhelpful avoidance* and either embed an exposure therapist within their clinics or develop a reliable network of community providers experienced in exposure therapy and able to offer this evidence-based treatment.

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## REFERENCES

1. Manassis K. Managing anxiety related to anaphylaxis in childhood: a systematic review. *J Allergy* 2012;2012:316296.
2. LeBovidge J, Strauch H, Kalish L, Schneider L. Assessment of psychological distress among children and adolescents with food allergy. *J Allergy Clin Immunol* 2009;123:1282-8.
3. Beesdo K, Knappe S, Pine D. Anxiety and anxiety disorder in children and adolescents: developmental issues and implications for DSM-5. *Psychiatr Clin North Am* 2009;32:483-524.

4. Walter HJ, Bukstein OG, Abright AR, Keable H, Ramtekkar U, Ripperger-Suhler J, et al. Clinical practice guideline for the assessment and treatment of children and adolescents with anxiety disorders [published online ahead of print May 18, 2020]. *J Am Acad Child Adolesc Psychiatry*. <https://doi.org/10.1016/j.jaac.2020.05.005>.
5. Whiteside SP, Sim LA, Morrow AS, Farah WH, Hilliker DR, Murad MH, et al. A meta-analysis to guide the enhancement of CBT for childhood anxiety: exposure over anxiety management. *Clin Child Fam Psychol Rev* 2020;23:102-21.
6. Craske M, Treanor M, Conway C, Zbozinek T, Vervliet B. Maximizing exposure therapy: an inhibitory learning approach. *Behav Res Ther* 2014;58:10-23.
7. Becker-Haimes E, Okamura K, Wolk C, Rubin R, Evans A, Beidas R. Predictors of clinician use of exposure therapy in community mental health settings. *J Anxiety Disord* 2017;49:88-94.
8. Simonte S, Ma S, Mofidi S, Sicherer S. Relevance of casual contact with peanut butter in children with peanut allergy. *J Allergy Clin Immunol* 2003;112:180-2.
9. Wainstein B, Kashef S, Ziegler M, Jelley D, Ziegeler J. Frequency and significance of immediate contact reactions to peanut in peanut-sensitive children. *Clin Exp Allergy* 2007;37:839-45.
10. Dinakar C, Shroba J, Portnoy J. The transforming power of proximity food challenges. *Ann Allergy Asthma Immunol* 2016;117:135-7.