



Impairment Measure for Parental Food Allergy-Associated Anxiety and Coping Tool (IMPAACT)

Instructions: Listed in the following sections are some of the anxiety-related thoughts that are commonly reported by parents of children with food allergies. Rate how much you were bothered by each of the following worries in **the past week**.

Because of my child's food allergies, I worry about...

	Not at all	Hardly	Somewhat	Moderately	Quite a bit	Very much	Extremely
1. My child may have a severe reaction or die if s/he is exposed to something to which s/he is allergic.	1	2	3	4	5	6	7
2. My child not knowing how to respond appropriately to an allergic reaction.	1	2	3	4	5	6	7
3. My child's caregiver/teacher not knowing how to respond appropriately to an allergic reaction.	1	2	3	4	5	6	7
4. How to manage his/her condition during upcoming changes/transitions in my child's life.	1	2	3	4	5	6	7
5. How my child will cope with his/her food allergy in the future.	1	2	3	4	5	6	7
6. The possibility of allergens in foods.	1	2	3	4	5	6	7
7. How food allergy may limit my child's social and psychological development (e.g., peer relationship, being bullied).	1	2	3	4	5	6	7
8. Not knowing when to use EpiPen (epinephrine) auto-injector appropriately on my child.	1	2	3	4	5	6	7
9. Not being able to find specific "safe" foods at grocery store.	1	2	3	4	5	6	7



Due to worries related to my child's food allergies...

	Not at all	Hardly	Somewhat	Moderately	Quite a bit	Very much	Extremely
10. I experience physical distress (e.g. restlessness, muscle tension, trembling, sweating, shortness of breath, nausea)	1	2	3	4	5	6	7
11. I have trouble relaxing.	1	2	3	4	5	6	7
12. I become tearful when I think/talk about my child's food allergy.	1	2	3	4	5	6	7

My worries related to my child's food allergies...

	Not at all	Hardly	Somewhat	Moderately	Quite a bit	Very much	Extremely
13. Make me constantly stressed out.	1	2	3	4	5	6	7
14. Overwhelm me or are hard to control.	1	2	3	4	5	6	7
15. Make it difficult for me to work or pursue leisure activities.	1	2	3	4	5	6	7
16. Affect my relationships with others.	1	2	3	4	5	6	7
17. Affect my child's coping or have made him/her become more anxious.	1	2	3	4	5	6	7



These are some of the things parents often reported that they do because of their child's food allergy. Please rate how well each of these statements applies to you in the past week. For the following section, please think about the reasons for the behaviours and only endorse the items if it is because of your child's food allergy.

Because of my child's food allergies, I:

	Not at all	Hardly	Somewhat	Moderately	Quite a bit	Very much	Extremely
18. Avoid going to places that we are not familiar with or where we are uncertain about "safety".	1	2	3	4	5	6	7
19. Avoid travelling with my child.	1	2	3	4	5	6	7
20. Avoid social activities with others involving food.	1	2	3	4	5	6	7
21. Avoid leaving my child in the care of others (e.g., relative, friend babysitter, teacher).	1	2	3	4	5	6	7
22. Am hesitant to undergo medically recommended tests or treatments involving potential allergen exposure (e.g., Oral Food Challenge, Oral Immunotherapy).	1	2	3	4	5	6	7
23. Am hesitant to introduce peanuts/other allergens (early) to my (other) child(ren).	1	2	3	4	5	6	7
24. Constantly check my mobile phone when my child is not in my care.	1	2	3	4	5	6	7
25. Avoid/limit other foods beyond identified food allergens (i.e., beyond medically recommended restrictions) (e.g., avoiding all nuts when only peanut allergy has been diagnosed).	1	2	3	4	5	6	7



In the following section, you will be asked about your experience of coping with a child/children with food allergies in the past week.

	Not at all	Hardly	Somewhat	Moderately	Quite a bit	Very much	Extremely
26. I need more help/support for my anxiety related to my child's food allergies.	1	2	3	4	5	6	7
27. My child needs more help/support for anxiety related to his/her food allergies.	1	2	3	4	5	6	7
28. Food allergy defines our lifestyle.	1	2	3	4	5	6	7



Scoring instructions:

Total score

A total score can be derived by adding the respondents answers for each item.

For instance: (item 1 + item 2 + item 3 + item 4 + item 5 + item 6 + item 7 + item 8 + item 9 + item 10 + item 11 + item 12 + item 13 + item 14 + item 15 + item 16 + item 17 + item 18 + item 19 + item 20 + item 21 + item 22 + item 23 + item 24 + item 25 + item 26 + item 27 + item 28)

Subscales

Each of the subscales are calculated by adding the participant responses for the questions contained within the scale.

Cognitive subscale: The cognitive subscale measures worries about food allergy.

(item 1 + item 2 + item 3 + item 4 + item 5 + item 6 + item 7 + item 8 + item 9)

Behavioral subscale: The behavioral subscale measures an individual's behavioral avoidance in relation to food allergy. For instance, a individuals' willingness to travel, go to unfamiliar places, etc.

(item 18 + item 19 + item 20 + item 21 + item 22 + item 23 + item 24 + item 25 + item 28)

Anxiety impact: The food anxiety impact subscale measures how food anxiety affects or influences an individual's life (i.e., emotional functioning and social relationships)

(item 10 + item 11 + item 12 + item 13 + item 14 + item 15 + item 16 + item 26)

Child coping: The child coping subscale measures how a parent's anxiety affects their child's ability to cope with food allergy.

(item 17 + item 27)



Interpretation

The table below can be used to calculate percentile ranks for the total food allergy anxiety score.

The table contains two sets for norms: conventional norms and COVID-19 norms. The COVID-19 norms should be used during times of public health restrictions or if someone is limited in their social activity because of COVID-19. The conventional norms can be used for individuals who are not overly restricted in their social activities due to COVID-19 or other public health issues.

Table 1. *Percentiles for total IMPAACT scores*

Percentiles	Total raw IMPAACT score (conventional norms)	Total raw IMPAACT score (COVID-19 norms)
1	31	30
5	50	38
10	61	45
15	67	49
20	72	52
25	80	58
30	86	63
35	89	69
40	93	73
45	98	79
50	101	87
55	106	91
60	112	95
65	118	101
70	124	108
75	130	119
80	138	129
85	144	133
90	151	142
95	167	156
99	183	174

Note. IMPAACT scores range from 0-196.



The following cut points, although not yet clinically validated, are suggested as a **preliminary** guide: minimal anxiety ($\leq 74^{\text{th}}$ percentile), moderate anxiety (75th to 94th percentile), and severe anxiety ($\geq 95^{\text{th}}$ percentile; See figure below).

Conventional scoring guidelines	Scoring guidelines for periods of reduced social activity due to COVID-19
Total IMPAACT raw score < 130 = <i>minimal anxiety</i> ($< 75^{\text{th}}$ percentile)	Total IMPAACT raw score < 119 = <i>minimal anxiety</i> ($< 75^{\text{th}}$ percentile)
Total IMPAACT raw score between 130-165 = <i>moderate anxiety</i> (75 th - 94 th percentile)	Total IMPAACT raw score between 119-150 = <i>moderate anxiety</i> (75 th - 94 th percentile)
Total IMPAACT raw score ≥ 167 = <i>severe anxiety</i> ($\geq 95^{\text{th}}$ percentile)	Total IMPAACT raw score ≥ 156 = <i>severe anxiety</i> ($\geq 95^{\text{th}}$ percentile)

Limitations: It should be noted that these cut-points have not been validated clinically and are based on distributional cut-offs used with other patient-reported outcome measures (e.g., certain Patient-Reported Outcome Information System measures and general psychiatric outcome measures) and some objective medical measures (e.g., both pediatric hypertension and body mass index employ a 95th percentile cut-off). **However, given their lack of validation, we recommend that clinicians use these cut-points cautiously and in-concert with clinical reasoning when screening for food allergy-specific anxiety.**

Caution should also be exercised when using the normative data with male respondents as the majority of the normative sample was comprised of females (83%). Because of these limitations, and others inherent to self-report screening measures, **the IMPAACT should not be used as the sole source of information to diagnosis food allergy anxiety.**



How to cite the IMPAACT:

The IMPAACT was developed at the University of British Columbia and BC Children's Hospital by Sharon To, Clara Westwell-Roper, Lianne Soller, S. Evelyn Stewart, and Edmond Chan. When using or referencing the IMPAACT in scholarly work please use the following citation:

To S, Westwell-Roper C, Soller L, Stewart SE, Chan ES. 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. *Annals of Allergy, Asthma & Immunology*. 2022 Oct 1;129(4):451-60.

Scholarly work that makes use of the measure's normative data should also include the following citation:

Golding MA, Soller L, Protudjer JL, Chan ES. Normative data for the Impairment Measure for Parental Food Allergy–Associated Anxiety and Coping Tool. *The Journal of Allergy and Clinical Immunology: In Practice*. 2023 Nov 1;11(11):3550-2.



Resources

1. Safe and included: 5 ways to help reduce your child's anxiety
https://www.safeandincluded.com/_files/ugd/83f519_91ec4da18e03490aa49dd213f205f8ab.pdf?index=true
2. Anxiety Canada: Resources and information to help manage anxiety related to having a medical condition like food allergy
<https://www.anxietycanada.com/disorders/health-anxiety-in-adults/>
3. Food Allergy Canada: Stress & anxiety related to food allergy
https://foodallergycanada.ca/wp-content/uploads/6_StressAndAnxiety-Web.pdf
4. Food Allergy Canada: Living confidently With food allergy
<https://www.foodallergycanada.ca/tools-and-downloads/key-resources/living-confidently-with-food-allergy-a-guide-for-parents-and-families/>
5. Food Allergy Canada: - Find a local or provincial support group
<https://foodallergycanada.ca/our-impact-advocacy-and-services/programs-and-services/support-groups/>
6. Food Allergy Canada – YouTube Channel
<https://www.youtube.com/foodallergycanada>
7. Find a local psychologist on your provincial psychological association website.
8. Canadian Counselling and Psychotherapy Association – Find a Canadian Certified Counsellor
<https://www.ccpa-accp.ca/find-a-canadian-certified-counsellor/>