



# The Role of Caregiver Knowledge on Sensory-Based Approaches Relevant to Dietary Intake and Mealtimes Behaviors of Children with Autism

Vanessa Vazquez, OTD; K. Megan Carpenter, OTD, OTR/L, SCFES  
Department of Occupational Therapy | University of Alabama at Birmingham  
Kendall Gremaux, MS, OTR/L | The Bailey Center

## Introduction

### Background:

- Within the United States, approximately 1 in 31 children among the ages of 4 and 8 years old was diagnosed with an autism spectrum disorder (ASD) diagnosis in 2022 (Shaw et al., 2025).
- Atypical sensory responses are a prevalent feature of children with ASD (C-ASD) (Kirby et al., 2022).
- A strong relationship between C-ASD experiencing sensory processing differences (SPD) and atypical eating behaviors has been reported (Nimbley et al., 2022).
- For C-ASD, studies suggest improved nutritional modifications may positively benefit cognitive performance and maladaptive behavioral patterns (Arif et al., 2025).

### Implications for Occupational Therapy

- A survey study found parents of C-ASD reported mealtime behavior concerns were not addressed as frequently as other feeding concerns, by non-specified therapists, suggesting mealtime behaviors as an area of need for further intervention; with the need to increase parent involvement in occupational therapy services relevant to feeding (Bonsall et al., 2021).

### Purpose:

- To present sensory-based strategies to caregivers and evaluate if implementing the suggested activities impact mealtime behaviors or nutritional habits of children with an autism spectrum disorder during mealtimes.

## Methods

### Participant Eligibility Criteria:

- Parents or caregivers of children between the ages 2-6 years old
  - Children must present with:
    - ASD diagnosis
    - Sensory processing differences identified by the *Child Sensory Profile 2* (SP-2), with a score of 85-99% in at least one of the main scoring quadrants
    - Behavioral concerns at mealtimes measured utilizing the *Brief Autism Mealtime Behavior Inventory* (BAMBI), with a score of 45 points or higher

### Intervention:

- Semi-structured one-on-one interviews, short questionnaires, and educational sessions were presented to caregivers once a week for approximately 15-30 minutes over an 8-week period.
  - When unable to attend a session, caregivers were given an informational handout on the topic missed.
- The *Food Neophobia Scale* (FNS) was utilized to record intake behaviors of novel foods. The FNS and BAMBI were provided pre- and post-educational sessions to measure changes overtime.

## Results

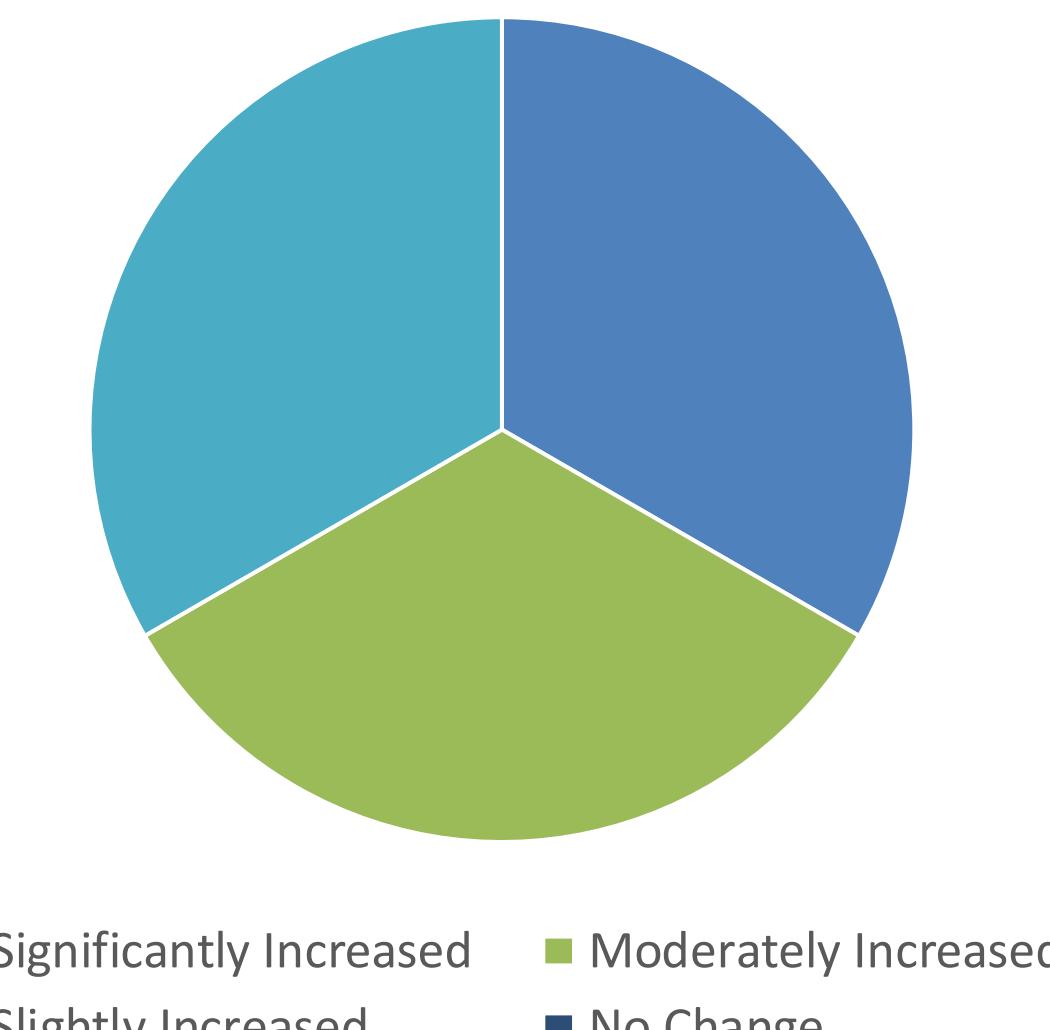
- A total of three participants ( $n = 3$ ) completed the eight-week program.
- A Wilcoxon signed-rank test was utilized to analyze pre- and post- intervention scores reported on the FNS and BAMBI questionnaires (table 1).
  - No statistically significant difference ( $p = 1.00$ ) between pre- and post- BAMBI scores was found.
  - A decrease in post- scores was found between pre- and post- FNS scores however, the change was not statistically significant ( $p = .174$ ).
- All three caregivers reported their perceived knowledge of sensory-based strategies increased (figure 1).
  - 1 "significantly increased"
  - 1 "slightly increased"
  - 1 "moderately increased"
- Two of three participants reported a noted increase in novel foods consumed by their child (table 2).

Figure 1. Perceived Caregiver Knowledge of Sensory-Based Strategies Post-Intervention

Table 1. Paired Samples T-Test

Measure 1	Measure 2	W	z	df	p
BAMBI_Pre	- BAMBI_Post	1.000	-0.447	1.000	
FNS_Pre	- FNS_Post	6.000	1.604	.174	

Note. Wilcoxon signed-rank test.



■ Significantly Increased ■ Moderately Increased  
■ Slightly Increased ■ No Change

Table 2. Weekly Food Diary

Behavioral Strategy Topic	Number of Novel Food Intake		
	Participant 1	Participant 2	Participant 3
How to Create a Sensory-Friendly Environment at Home	2	0	0
Sensory Weighted Blankets for Kids with Autism	0	0	0
Oral Motor Tools	1	0	1
What is the Vestibular System?	2	0	0
What are Joint Compressions?	0	0	2
Proprioceptive/Deep Pressure Stimulation	0	0	0
Sensory Circuits	7	0	0

## Discussion

- Findings:**
  - A decrease in FNS scores was found in all three participants but they were not statistically significant
  - Participant 1 attended all eight sessions and reported the highest increase in perceived knowledge and number of novel food intake
  - Observations in participant differences support the need to promote individualized, family-centered care approaches
- Limitations:**
  - Small sample size
  - Narrow inclusion criteria
  - Investigator created surveys
  - Caregiver reported measures/reliability in adherence of implementation
- Future Studies:**
  - Increase sample size and broaden inclusion criteria
  - Utilize standardized surveys for objective data collection
  - Present strategies in therapy sessions along with caregivers to promote and record accuracy of implementation
  - Evaluate potential correlations between level of autism diagnosis and specific type of sensory processing differences with sensory strategy types

## Conclusion

Providing caregiver education on sensory-based strategies improved intake of novel foods in two of three participants. However, these findings were not statistically significant and should be interpreted with caution. Further studies should evaluate correlations between the variables with a larger sample size to measure reliability and its implications for occupational therapy practitioners more accurately.

## References

Please scan the provided QR code to access the reference list associated with this poster presentation.



## Acknowledgement & Contact information

I would like to thank my faculty mentor, Dr. Megan Carpenter, my site mentor, Kendall Gremaux, and the therapists at The Bailey Center in Wetumpka for their support and guidance.

I would also like to thank the study participants for their time, dedication, and contributions in providing invaluable information for completion of this study.

Contact: Vanessa Vazquez vazane@uab.edu