

# Food Related Behaviors in Children with Autism Spectrum Disorder

Madi Veith

Department of Nutrition, Dietetics, and Exercise Science, Concordia College, Moorhead, MN



## Introduction

Autism spectrum disorder (ASD) is defined as a broad range of conditions related to challenges with speech, nonverbal communication, social communication and interaction, and repetitive behaviors. In addition, there are subtypes of ASD, all of which are influenced by certain environmental and genetic factors, including autistic disorder, rett syndrome, childhood disintegrative disorder, pervasive developmental disorder-not otherwise specified (PDD-NOS), and Asperger syndrome.

Within each of these categories, symptoms can range in severity, and individuals may display different strengths and challenges compared to others. Many children diagnosed with ASD excel at math, science, music, or art, are strong visual and auditory learners, and have excellent memory. Most children are diagnosed by the age of 2 or 3, but symptoms can be observed as early as 18 months. It is estimated that 1 out of every 59 children in the United States has a form of ASD.<sup>1</sup>

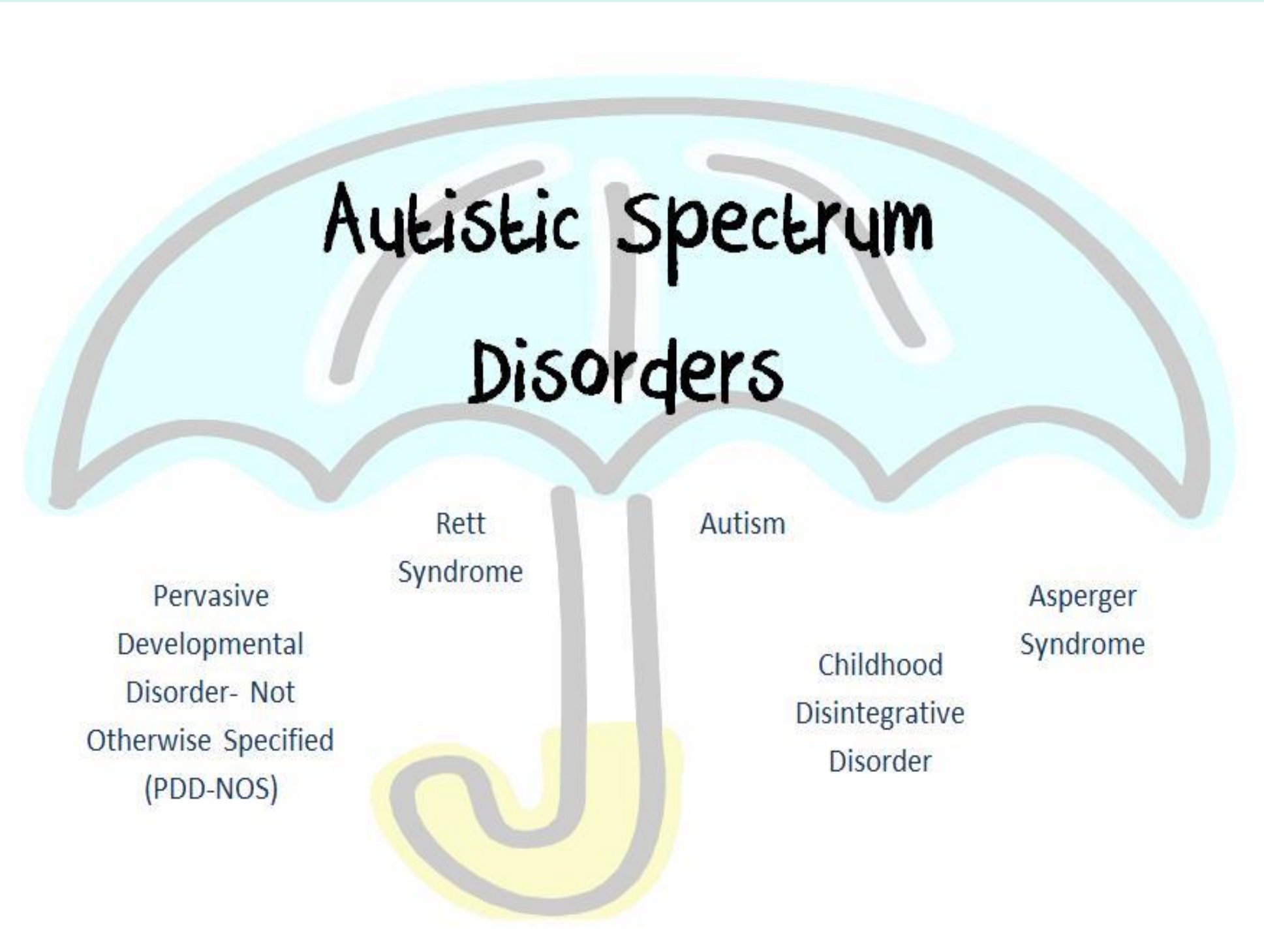


Figure 1. Subtypes of ASD <sup>2</sup>

## Common Issues with Food

Feeding difficulties, such as fear of specific foods, gastrointestinal issues, being very selective of food choices, and misbehavior during meal times are seen in all children at times. However, these issues are observed in as many as 89% of children with ASD.<sup>3</sup>

### Food Selectivity

Food selectively is the most common feeding problem in children with ASD. Alterations in texture, taste, color, and presentation of food could potentially lead to food refusal. Food items that are soft or slippery tend to be the most problematic, so often children refuse fruits and vegetables while preferring processed foods and snacks. Minor things like having foods touching on their plate or foods that are certain colors could potentially cause stress for the child.<sup>4</sup> All of these issues may contribute to increased risk for nutrient inadequacy and can create a very stressful environment for families.

### Gastrointestinal (GI) Discomfort

Gastrointestinal (GI) issues are also common in children with ASD. A potential cause could be the severe food selectivity that children may exhibit, like preferring unhealthy food items or limited food preference. Children may find it difficult to communicate symptoms, which could worsen the effects of the GI issues. According to studies from the Academy of Pediatrics, 9%-91% of GI disorders were reported among children with ASD.

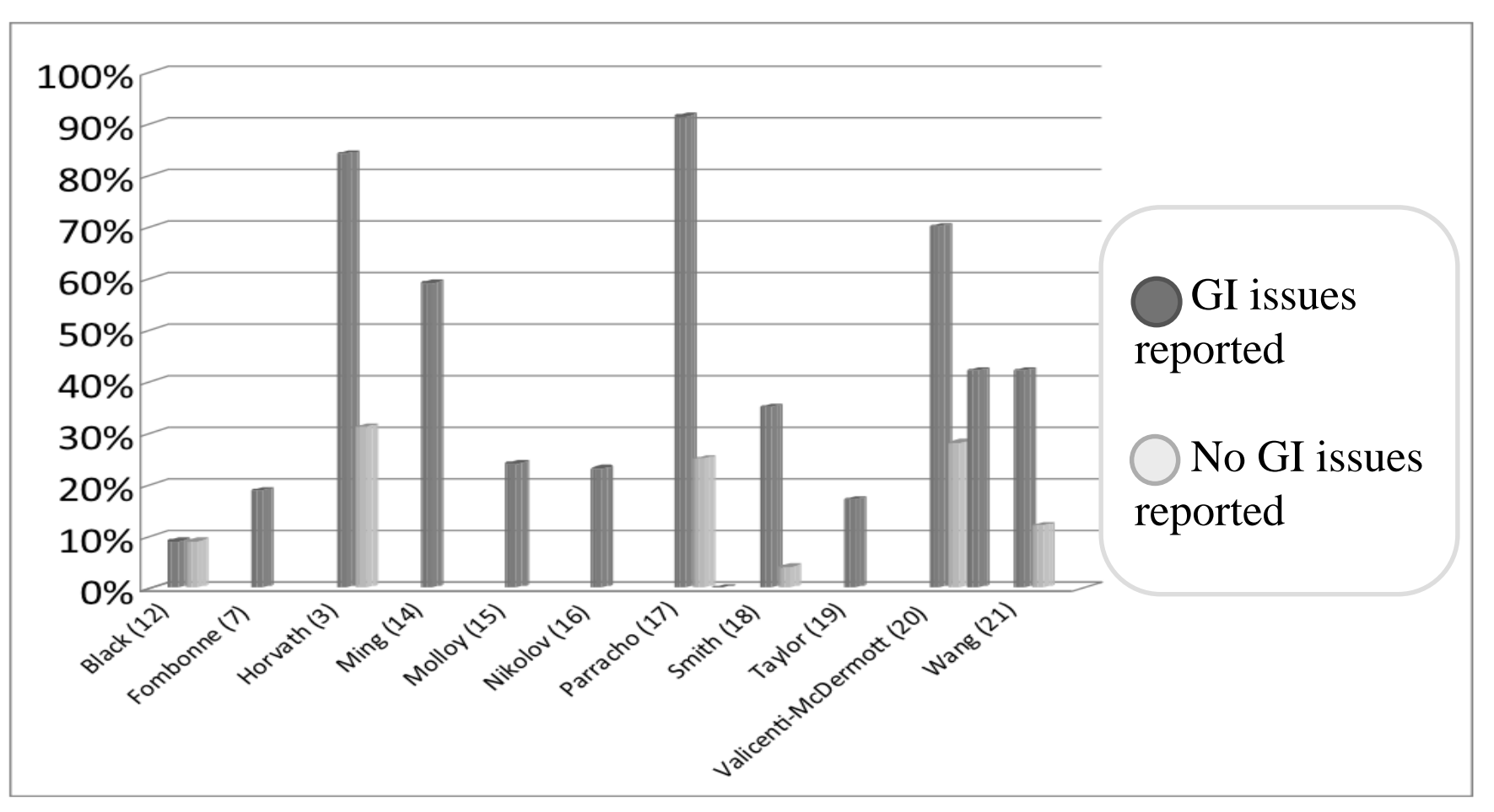


Figure 2. Prevalence of GI issues in children with ASD. <sup>5</sup>

### Mealtime Behavior

Exhibiting undesired behaviors during mealtimes is common in children with ASD, and is often due to hypersensitive and hyposensitive responses to the environment. For example in a school lunch room or at home, a child may be more sensitive to bright lights or loud sounds, unfamiliar tastes or smells, which may lead to behavioral outbursts or negative associations between this type of environment and food consumption.<sup>6</sup>

Type of System	Hyper-responsive	Hypo-responsive
Auditory	Overly sensitive to sounds <b>Possible symptoms:</b> Cover ears, anxious, aggression, cry, or yell	Unaware of sounds <b>Possible symptoms:</b> Daydreaming, “spacey”, and lengthy meal times
Visual	Overly sensitive to light and movement <b>Possible Symptoms:</b> Shield eyes, withdrawn, anxious, distracted resulting in little food intake	Unaware of relevant or changing visual input <b>Possible symptoms:</b> Over focused on irrelevant food or plate features, inattentive to complete meal
Gustatory	Overly sensitive to a variety of tastes <b>Possible symptoms:</b> Picky eater, prefer bland flavors, food refusal, or gagging	Poor taste discrimination <b>Possible symptoms:</b> crave strong flavors, lick or taste inedible objects
Olfactory	Overly sensitive to smells <b>Possible symptoms:</b> Picky eater, distressed, anxious, and withdrawn	Unaware of strong odors <b>Possible symptoms:</b> Disinterested in eating without the enhancement of smell

Table 1. Possible effects of sensory variation on mealtime behavior <sup>6</sup>

## Methods to Improve Eating Behaviors

### Set A Routine

- Meal time can be hectic, so it is important to have a set routine that provides a sense of uniformity for the child. For example, preparing meals at the same time every day can help put the child at ease to reduce certain stressors that may be present.
- Consistent meal types and meal times are important in order for the child to develop a routine that they can follow every day to ease the stress of unpredictability.<sup>7</sup>

### Experiment With Foods/Diet

- Encouraging variety in the diet is very important when working with a child with ASD. By offering new foods consistently, you can determine what foods they really enjoy over what foods they tend to avoid.<sup>1</sup>
- Including children while grocery shopping and preparing food helps them become more familiar with smells, colors, and feel of unfamiliar foods. Try to make meal time fun, as this may decrease the anxiety that some children have with foods.<sup>1</sup>
- Pay attention to textures of foods that are often avoided and modify as needed. For example, if a food is “squishy” and unfavorable to the child, try chopping it up or blending it.<sup>1</sup>
- Offer many options and allow the child to choose on their own. By providing several healthy options within a food group, it allows them to pick foods they enjoy, while still receiving the necessary nutrients.<sup>1</sup>

### Gluten Free/Casein Free Diets

- One potential solution to reduce gastrointestinal issues and negative behavior may be to eliminate gluten and casein from the diet. This diet may be effective because individuals with ASD often have issues breaking down proteins due to a “leaky gut”, or increased intestinal permeability, leading to discomfort and altered digestion.<sup>8</sup>
- Keep in mind, this type of elimination diet may not be affective for all children with ASD, and further research is needed to determine the effectiveness of the diet. Although, some positive results were seen in the study below.

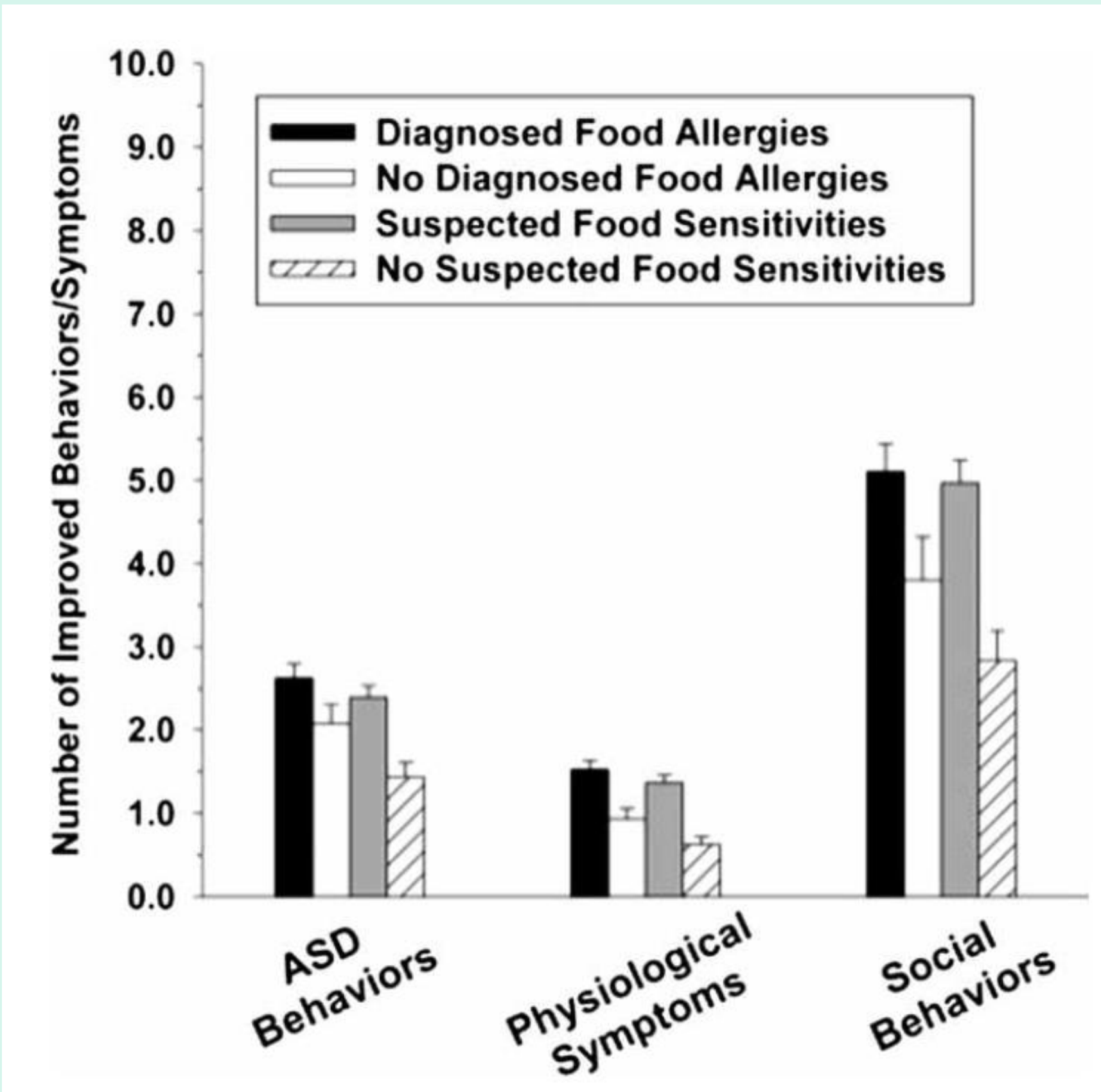


Figure 3. The results of study assessing the effectiveness of a gluten free/casein free diet <sup>8</sup>

## Summary

- Family education is vital when working with children with ASD to help create a comfortable eating environment and avoid negative sensory responses.
- It is important to consider that some environments may not be ideal for children with ASD to be in during mealtimes.
- Have a routine for meal time, as this provides a sense of uniformity that may prevent potential stressors that could lead to undesirable behaviors.
- Pay close attention to specific food selectivity, such as texture or color dislikes, in order to determine alternatives that are more acceptable for the child.
- It is important to encourage food experimentations with the child to help create interactive ways for them to be involved with the food they are eating.
- Depending on the child, it may be beneficial to try eliminating certain foods that might be contributing to GI discomfort.

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### For Further Information

Please contact me at [mveith@cord.edu](mailto:mveith@cord.edu) for more information on this project!