

Feeding and Autism: Understanding and Overcoming Nutritional Barriers

Abstract

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by impairments in communication and social interaction, as well as restricted and repetitive patterns of behavior. Children on the spectrum often present atypical sensory responses, such as reactions to sounds, textures, smells, and tastes, which directly affect their relationship with food and the mealtime environment.

This study aims to identify, describe, and analyze the main feeding challenges experienced by children with ASD, as well as to present nutritional and behavioral management strategies that promote the health and quality of life of these individuals and their families.

It is an integrative literature review conducted using national and international databases, considering studies that investigated food selectivity, gastrointestinal problems, nutritional deficiencies, and socialization difficulties during meals. The results indicate that food selectivity, gastrointestinal alterations, and nutritional deficiencies are recurrent, requiring individualized therapeutic strategies, supplementation when necessary, and multidisciplinary support. It is concluded that understanding the complexity of feeding difficulties in autism is essential for developing effective interventions. Adapted strategies that consider sensory, behavioral, and nutritional aspects may promote not only adequate growth and development but also the emotional well-being and social integration of the child and their family.

Keywords: Autism Spectrum Disorder, Autism, Feeding, Nutrition, Food Selectivity, Feeding Difficulties, Nutritional Intervention.

Introduction

Autism Spectrum Disorder (ASD) is characterized by difficulties in communication and social interaction, along with restricted and repetitive behavioral patterns and interests, as well as atypical sensory responses (APA, 2013). These characteristics affect not only behavior and learning but also daily experiences, such as feeding.

Studies indicate that ASD may be associated with nutritional imbalances, gastrointestinal disorders, inflammatory processes, and food allergies, affecting several organs, including the central nervous system. The gestational period and the first two years of life are critical for neurological, immunological, and metabolic development, and dietary changes during this time may compromise the formation of the intestinal microbiota, immune system, and central nervous system (CNS).

The relationship with food begins during pregnancy, as the flavors consumed by the mother are transmitted to the fetus and later through breastfeeding. Parents' eating behavior directly influences the child's food acceptance. However, initial rejection of certain flavors is common, requiring patience and persistence from caregivers (Carreiro, 2025, p. 120).

Parents often report significant feeding limitations in children with ASD, characterized by food selectivity, persistent refusal of new foods, and preference for a limited range of items (Ledford & Gast, 2006; Bandini et al., 2010). While about 25% of typically developing children exhibit food selectivity, this rate reaches 60–80% among autistic children, with diets sometimes limited to only five foods (Carreiro, 2025).

This selectivity affects growth, metabolic health, cognitive development, and socialization, while also generating family stress. Selective autistic children tend to consume more ultra-processed foods—rich in sodium, sugars, and additives—and fewer fibers, vitamins, and minerals, increasing the risk of obesity and chronic diseases.

Therefore, food selectivity constitutes a relevant clinical issue, requiring a multidisciplinary approach involving physicians, nutritionists, speech therapists, and other professionals. Understanding these challenges is essential for

proposing intervention strategies that promote a balanced, enjoyable, and individualized diet adapted to the needs of children with ASD.

Methodology

This study consists of an integrative literature review, a method that allows for the synthesis of previous research results, promoting a broader understanding of the phenomenon (Whittemore &Knafl, 2005).

The search was conducted in the SciELO, PubMed, BVS, Web of Science, and Google Scholar databases between July and September 2025, using the descriptors: autism, feeding, child nutrition, food selectivity, and intestinal dysbiosis. Articles published between 2019 and 2024, available in full and focused on the nutritional and dietary aspects of ASD, were included.

Reference theoretical works in the field of nutrition and autism were also analyzed. Duplicate studies, case reports, and publications without thematic adherence were excluded. In total, ten sources were critically analyzed—eight scientific articles and two books.

Table 1 – Summary of Studies Included in the Integrative Review

Authors (Year)	Title	Objective	MainFindings
Barbosa et al. (2023)	Nutrition in Autism Spectrum Disorder: Benefits of Dietary Interventions in Childhood	To evaluate the benefits of dietary interventions in children with ASD.	Cognitive and behavioral improvements with personalized diets; highlighted the role of omega-3 and probiotics.

Authors (Year)	Title	Objective	Main Findings
Sabino & Belém (2022)	The Relationship Between ASD and Dysbiosis	To investigate the influence of intestinal microbiota on autistic behavior.	Correlation between dysbiosis and symptoms; behavioral improvement with probiotic use.
Teixeira & Venancio (2023)	Impacts of Diet and Nutrition on Child Development	To assess the effects of diet on neuropsychomotor development.	Emphasizes the importance of healthy eating habits from early childhood.
Diniz et al. (2023)	Food Selectivity in Autism Spectrum Disorder and Its Impact on Nutritional Health	To analyze food selectivity and its repercussions.	Identified sensory aversions and micronutrient deficiencies in autistic children.
Silva, Braz & Sodr� (2023)	Autism Spectrum Disorder: Aspects Related to Feeding and Nutrition	To discuss nutritional and social aspects of ASD.	Defends multiprofessional follow-up and educational interventions.
Oliveira & Campos (2022)	Autism: A Functional Nutrition Perspective	To examine the role of nutrients in behavioral regulation.	Benefits of gluten-free and casein-free diets and supplementation with fatty acids.
Souza et al. (2024)	Relationship Between Autism Spectrum Disorder and Eating	To relate atypical eating patterns and	Identifies a link between food selectivity and

Authors (Year)	Title	Objective	Main Findings
	Disorders	comorbidities.	anxiety.
Cardoso &Nogueira (2021)	Interdisciplinary Care for Autism	To propose interdisciplinary approaches for comprehensive care.	Highlights the role of nutrition in family balance and mealtime routines.
Carreiro (2019)	Nutritional Approach in the Prevention and Treatment of Autism	To describe dietary strategies for ASD treatment.	Emphasizes supplementation and personalized nutrition based on individual biochemistry.
Plano (2020)	Child Nutrition: Influences on Selective Eating Behavior	To discuss factors influencing eating behavior.	Demonstrates the influence of family environment and affectivity on eating habits.

Source: Author's elaboration (2025).

Results and Discussion

The analysis reveals that food selectivity in individuals with ASD is a multifactorial phenomenon influenced by physiological, sensory, emotional, and environmental factors. This condition may lead to nutritional deficiencies, gastrointestinal disorders, and significant impacts on quality of life (Diniz et al., 2023; Barbosa et al., 2023).

From a physiological perspective, intestinal dysbiosis has been widely studied as a factor that exacerbates behavioral and feeding symptoms. Sabino and Belém (2022) show that microbiota imbalance affects neurotransmitters and

nutrient absorption, reinforcing the importance of diets rich in probiotics and fibers.

Similarly, Carreiro (2019) argues that intestinal regulation is directly associated with behavior, mood, and cognitive ability, and should be a central focus of nutritional therapy in ASD.

From a behavioral standpoint, food selectivity often results from sensory hypersensitivity. Children with ASD tend to reject foods due to texture, temperature, or color, showing rigid preferences and feeding rituals (Silva, Braz & Sodré, 2023). The book *Child Nutrition: Influences on Selective Eating Behavior* (Plano, 2020) adds that the formation of eating behavior stems from the interaction between emotional, social, and family factors, with parental example and home routine being crucial for therapeutic success.

The literature also suggests that specific diets—such as gluten- and casein-free diets—may reduce gastrointestinal and behavioral symptoms, although results vary individually (Oliveira & Campos, 2022). Barbosa et al. (2023) emphasize the benefits of omega-3 and probiotic supplementation, while Carreiro (2019) highlights that micronutrients such as zinc, magnesium, and B-complex vitamins may help stabilize metabolism and emotional balance.

Furthermore, the role of family and mealtime environment is essential. Cardoso and Nogueira (2021) affirm that eating goes beyond the biological dimension—it is also an expression of bonding and communication. Therefore, interdisciplinary care should integrate nutritional guidance, behavioral therapy, and emotional support.

Integrating the evidence suggests that overcoming nutritional barriers in autism requires a comprehensive approach that embraces body, mind, and affection. As Plano (2020) summarizes, eating is also an act of belonging—and promoting this bond is the first step toward restoring the pleasure of eating and holistic health.

Food Selectivity and Behavioral Factors

Food selectivity is multifactorial, involving physiological, sensory, emotional, and environmental aspects (Diniz et al., 2023; Barbosa et al., 2023). Sensory hypersensitivity is common, leading to food rejection based on texture, temperature, or color (Silva, Braz & Sodr , 2023). The interaction between emotional, social, and family factors — including parental modeling and household routines — is crucial for therapeutic success (Plano, 2020). Specific diets, such as gluten-free and casein-free, may reduce gastrointestinal and behavioral symptoms, although results vary among individuals (Oliveira & Campos, 2022). Supplementation with omega-3, probiotics, and micronutrients can help stabilize metabolic and emotional processes (Carreiro, 2019; Barbosa et al., 2023). Family involvement and a structured eating environment are essential, integrating nutritional guidance, behavioral therapy, and emotional support (Cardoso & Nogueira, 2021).

Sensory and Physiological Factors

Children with ASD often exhibit tactile defensiveness, resistance to new foods, and a preference for specific textures, colors, and temperatures, which may restrict the intake of essential vitamins and minerals (Carvalho, 2012 apud Moura et al., 2021). Gastrointestinal problems, oral-motor alterations, and intestinal dysbiosis exacerbate both behavioral and feeding symptoms (Sabino & Bel m, 2022; Monike, Sabino & Oliveira, 2022). The gut–brain–microbiota axis and the intestinal production of neurotransmitters (serotonin, dopamine, GABA) play a key role. A reduction in beneficial bacteria can affect mood, anxiety, and appetite, increasing food selectivity as a defense mechanism (Galv o, 2025).

Nutritional Impact

Food selectivity and excessive consumption of ultra-processed foods contribute to deficiencies in iron, calcium, vitamin D, fiber, B-complex vitamins, and

essential fatty acids, increasing the risk of malnutrition or obesity.
Individualized nutritional interventions include:

1. Supplementation with vitamin D, omega-3, and micronutrients (Silva, Braz & Sodr , 2023).
2. Introduction of prebiotics and probiotics to maintain microbiota balance (Gibson et al., 2017; NG et al., 2019).
3. Elimination of ultra-processed foods, artificial colorings, monosodium glutamate, and refined sugars (Marcelino, 2010; Gomes, 2020).
4. Possible restriction of gluten and casein to reduce the opioid-like effects of certain peptides (Newell, 2016; Gomes et al., 2016).

Family and Environmental Factors

Family eating patterns and the home environment strongly influence the child's feeding behavior. Structuring meals with predictability and minimizing sensory overload helps increase food acceptance and reduce family stress. Specialized support from a multidisciplinary network — including physicians, therapists, psychologists, and nutritionists — is essential to guide caregivers and optimize nutritional and behavioral strategies.

Management and Intervention Strategies

The approach should be multidimensional, integrating:

- Occupational therapy focused on sensory integration.
- Behavioral interventions, such as Applied Behavior Analysis (ABA).
- Individualized nutritional interventions, with gradual food introduction and supplementation.
- Environmental adaptations and predictable routines.
- Inclusion of fresh and minimally processed foods in the family diet.
- Active participation of the child in food preparation, stimulating visual,

cognitive, and sensory engagement.

Conclusion

The integrative review revealed that feeding in ASD involves a complex interaction among physiological, sensory, and psychosocial factors. Food selectivity is a frequent manifestation, with implications that extend beyond nutrition to emotional and relational domains.

The analyzed studies confirm the importance of personalized nutritional interventions based on biochemical, behavioral, and affective assessments.

Interdisciplinary collaboration — involving physicians, nutritionists, therapists, and families — is essential to achieve meaningful progress.

It is concluded that understanding the autistic individual as a whole is the starting point for transforming nutrition into a bridge: between body and affection, biology and life. To feed is more than to nourish; it is to integrate, restore, and care — and that is the essence of true treatment and development alongside individuals with autism spectrum disorder.

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