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# Avoidant/restrictive food intake disorder in childhood autism: a narrative review

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## ABSTRACT

Avoidant/restrictive food intake disorder (ARFID), defined by the DSM-5, affects children's growth and development and is common in those with autism spectrum disorder (ASD).

This update aims to describe the causes, consequences, detection strategies, and therapeutic approaches to ARFID in children diagnosed with ASD, based on published scientific articles.

Original articles, reviews, meta-analyses, and clinical trials published between January 2016 and February 2025 in peer-reviewed journals were included in this review. The search was conducted in PubMed, Cochrane Library, and Google Scholar using the descriptors "ARFID AND AUTISM." Only full-text studies in English or Spanish focusing on the pediatric population were considered; we found 23 relevant publications.

This study explores how ASD characteristics can influence ARFID symptoms. Considering the findings, recommendations, and treatments based on clinical trials and meta-analyses are analyzed.

***Keywords:*** *avoidant/restrictive food intake disorder; pediatrics; eating behavior; autism spectrum disorder; child nutrition.*

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## INTRODUCTION

Feeding in childhood is a dynamic and complex process that extends beyond simply eating food; it involves the coordination of multiple systems, including the gastrointestinal, nervous, respiratory, and musculoskeletal systems. It also requires the progressive development of motor, behavioral, and relational skills that children acquire as they grow.[1] When any of these areas is disrupted, eating disorders can arise.[2] It is estimated that between 25% and 40% of typically developing children experience some eating difficulties during their growth, which in most cases resolve spontaneously.[3] However, when they persist or worsen, they can lead to more complex clinical conditions, such as avoidant/restrictive food intake disorder (ARFID).[4]

In recent years, there has been growing interest in the relationship between ARFID and autism spectrum disorder (ASD). ASD is a set of neurodevelopmental conditions characterized by impairments in communication and social interaction, along with restricted and repetitive patterns of behavior and interests.[4] Available evidence indicates that the prevalence of ARFID is significantly higher in children with ASD.[5] Both conditions share multiple clinical characteristics related to eating, such as sensory hypersensitivities, extreme food selectivity, and poorly varied diets.[6,7] This suggests possible common etiopathogenic mechanisms.

Despite the clinical relevance of this association, the literature that systematically and coherently analyzes the intersection between ARFID and ASD remains scarce and scattered. For this reason, a narrative review was conducted to synthesize the current evidence. The objective is to answer the question: "What is currently known about the causes, consequences, detection strategies, and therapeutic approaches to ARFID in children diagnosed with ASD?"

## METHODS

This study was designed as a narrative review. To this end, original articles, narrative reviews, systematic reviews, meta-analyses, and clinical trials published in peer-reviewed scientific journals were considered for inclusion.

The literature search was conducted in three internationally accessible electronic databases: PubMed, belonging to the United States National Library of Medicine (NIH); the Cochrane Library, specializing in systematic reviews and high-quality clinical evidence; and Google Scholar, to broaden the sensitivity of the search and identify potentially relevant gray literature. The search strategy was conducted without time restrictions, encompassing all publications available from January 2016 to February 2025. The descriptors ARFID AND AUTISM were used, and filters were applied to restrict the results to review articles, systematic reviews, meta-analyses, and clinical trials. Only studies available in full text and written in English or Spanish were considered.

Studies that explicitly addressed aspects of ARFID in pediatric populations (aged 0 to 18 years) with a confirmed diagnosis of ASD were included. Studies that focused exclusively on the adult population, those that did not establish an explicit relationship between ASD and ARFID, as well as brief communications, letters to the editor, editorials, conference abstracts without data, duplicates, and preliminary versions of already published articles were excluded (*Figure 1*). This strategy identified a total of 23 publications, of which 15 were included (*Supplementary Material 1*).

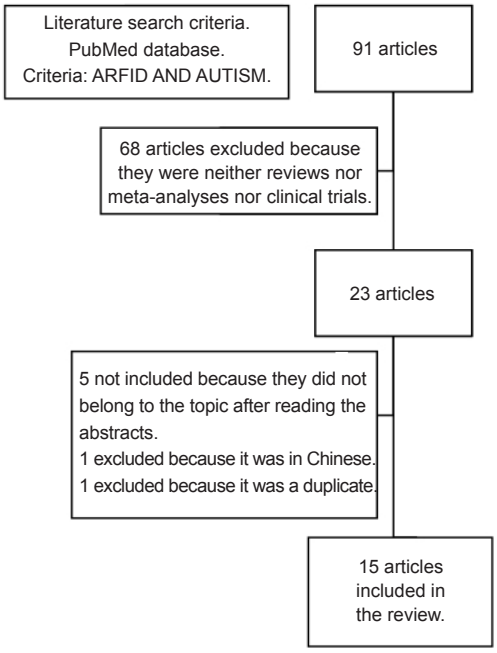
## DEFINITION AND EPIDEMIOLOGY

ARFID has a multifactorial origin —biological, psychological, and environmental—and is characterized by food restriction or avoidance that significantly impacts weight, nutritional requirements, or psychosocial functioning.[2,6,8,9] The clinical picture is distinguished by eating behaviors such as loss of appetite, selectivity, or aversion to eating (including post-traumatic causes), which can manifest at any age and persist into adulthood.[1,10,11]

In 2013, ARFID was classified within the eating disorders section of the DSM-5 to encompass a set of conditions that did not have a specific diagnosis at the time. ARFID differs from others, such as anorexia, as it is not related to body image, food availability, or cultural, religious, or medical practices.[4,6] For diagnosis, there must be clinical consequences such as alterations in weight, growth, or nutritional deficiency, which differentiate it from simple food selectivity (*Table 1*).[4] It should be noted that nutritional deficiency can occur in children who are of adequate weight for their age and height, or in those who are overweight or obese.

Three clinical forms are described: lack of interest in eating (loss of appetite), selectivity due to sensory sensitivity (neophobia, limited variety), and avoidance due to aversive (traumatic) experiences; in addition, a mixed subtype is

**Figure 1. Flowchart of the literature search conducted**




recognized.[12,13] In people with ASD, the sensory form predominates (*Table 1*).[14]

The prevalence of altered eating behaviors is higher in children and adolescents with autism or ASD traits.[8,15] A Canadian study showed that the incidence of ARFID is 2.02 per 100,000 people aged 5 to 18. In this population, between 8.2% and 54.8% had autism.[16] However, there is no accurate global prevalence data available. It is estimated that children with ASD are five times

**Table 1. Characteristics of avoidant/restrictive food intake disorder (ARFID)**

**DSM-5 code 307.59 (F50.8)**

**Diagnostic criteria for ARFID according to DSM-5 (2013)**

A. Eating and feeding behavior disorder (e.g., apparent lack of interest in eating or feeding; avoidance due to the organoleptic characteristics of food; concern about the repulsive consequences of eating) manifested by persistent failure to meet adequate nutritional and/or energy needs associated with one (or more) of the following:

1. Significant weight loss (or failure to achieve expected weight gain or poor growth in children).
2. Significant nutritional deficiency.
3. Dependence on enteral feeding or oral nutritional supplements.
4. Significant interference with psychosocial functioning.

B. The disorder is not better explained by a lack of available food or a culturally accepted practice.

C. Eating disorders do not occur exclusively during anorexia nervosa or bulimia nervosa, and there is no evidence of a disorder in the way one experiences one's own weight or build.

D. The eating disorder cannot be attributed to a concurrent medical condition or is not better explained by another mental disorder. When the eating disorder occurs in the context of another condition or disorder, the severity of the eating disorder exceeds that typically associated with the condition or disorder and warrants additional clinical attention.

Specify if:

In remission: After previously meeting all criteria for eating and feeding disorders, the criteria have not been met for a continuous period.

**Types of ARFID**

- Limited intake ARFID: Lack of appetite or interest in eating.
- Selective ARFID: Selectivity in eating due to sensory sensitivity (more common in children with ASD).
- Aversive ARFID: Fear or post-traumatic aversion.
- Combined ARFID (more than one subtype) (Tomaszek, 2025).

more likely to have eating difficulties than their typically developing peers.[17] Children with ASD show a higher incidence of food selectivity, neophobia, and restrictive eating and behavioral patterns, which are possible manifestations of ARFID.[18] The co-occurrence of ARFID and ASD ranges from 50% to 80%, with variability depending on the study.[6,8,13,19] ARFID usually begins in childhood or adolescence, with no consensus on gender differences.[20] The presence of ASD should be considered a clinical indicator or warning sign for systematic evaluation of a possible condition associated with ARFID, given the high prevalence of co-occurrence between both conditions in the pediatric population. The DSM-5 clarifies that, in individuals with ASD, rigid eating behaviors or sensory sensitivity are not sufficient for a diagnosis of ARFID. This requires at least one criterion of clinical impact on nutrition and/or health, as explained in *Table 1*.[4]

## CAUSES OF EATING DISORDERS IN CHILDREN AND ADOLESCENTS WITH AUTISM SPECTRUM DISORDER

The etiology of childhood ARDIF, like that of all eating disorders, is multifactorial and involves a combination of biological,[21,22] psychological,[3,8,9] environmental,[10] sensory, behavioral, and gastrointestinal factors specific to the individual.[15] These factors are expanded upon in *Table 2*.

Among environmental factors, family and caregivers play a crucial role in shaping eating habits in childhood. The type of parenting used will have a significant influence. Among parenting styles, authoritarian (controlling), permissive (indulgent), and neglectful models are presented as obstacles to effective parenting. The authoritative (responsive) model is highlighted as beneficial. The authoritative (responsive) style is characterized by a structured approach that takes the child's wishes into account. It allows for both the acceptance and rejection of new foods, while setting appropriate limits.[10,23]

In children and adolescents with ASD, sensory sensitivity is identified as one of the leading causes of ARFID; it is currently the most cited factor in the literature.[10] Sensory sensitivity causes them to respond disproportionately to stimuli, limiting their consumption of unfamiliar foods due to their texture or presentation.[10,24] Atypical sensory processing occurs in up to 97% of people with ASD, increasing the likelihood of food selectivity and ARFID.[14,25]

Food neophobia, referring to the fear of eating

**Table 2. Factors associated with the development of avoidant/restrictive food intake disorder in children and adolescents with autism spectrum disorder**

| Factor | Description | Examples/relevance in ASD |
|---|---|---|
| **Biological** | Hormonal and regulatory peptide appetite alterations, alterations in taste perception, lack of exposure to flavors, and sensory sensitivity.[21,22] | Atypical sensory processing in up to 97% of people with ASD.[14,24] |
| **Psychological** | Early stress linked to alterations in feeding, such as intrauterine factors, prematurity, attachment disorders, and traumatic events during development.[3,8,9] | It is necessary to address these early stressful experiences in medical history. |
| **Environmental** | Family habits, parenting style, and feeding practices, such as a lack of variety in the family diet, can put pressure or obligation on the child to eat or try new foods and textures.[10] | Among parenting styles, the authoritative (responsive) style is the most effective.[10,23] |
| **Sensory** | Leading causes of ARFID. Hypersensitivity to textures, flavors, smells, and colors. | Children with ASD are more likely to reject foods due to their textures, consistencies, and preparation of various ingredients.[28] |
| **Behavioral** | Rigidity, marked preferences, and disruptive behaviors during meals. | Frequent rejection of fruits/vegetables; preference for simple foods.[10,28] |
| **Gastrointestinal** | Reflux, constipation, and abdominal pain that interfere with appetite or cause food aversion. | May affect children's ability to concentrate.[1] |

new foods, is common in children. In children with ASD, neophobia, which is generally temporary, tends to persist over time.[26,27] In those with ASD, disruptive behaviors at mealtimes and marked preferences can also be observed, with a more frequent rejection of vegetables and fruits.[10,28]

Finally, gastrointestinal problems—common in children with ASD—can contribute to food refusal by causing pain, loss of appetite, or discomfort that they are often unable to communicate verbally.[28-30] It is essential to consider these factors in the therapeutic approach.

## RECOMMENDATIONS FOR THE EARLY DIAGNOSIS OF FOOD AVOIDANT/ RESTRICTIVE FOOD INTAKE DISORDER

Children and adolescents with ASD should be adequately evaluated frequently to detect symptoms of ARFID through a detailed clinical history in order to achieve early detection before major complications arise.[16,19,31] A multidisciplinary health team should implement this approach to help the child manage anxiety when eating and encourage them to expand the variety of foods they consume.[7,8] This will prevent an increased risk of associated comorbidities and complications that affect development.[9]

Nutritional assessment in people with ASD and suspected or diagnosed ARFID should include:[10]

- Detailed dietary history with food diary (assess energy, macro- and micronutrient intake).
- Complete anthropometric assessment based on reference standards.
- Screening for acute, chronic, and secondary medical complications of malnutrition, overweight/obesity, and micronutrient deficiencies.
- Rule out organic diseases such as gastrointestinal disorders, food allergies, and Crohn's disease, among others.

In addition, an interdisciplinary approach is suggested, accompanied by complete clinical, ophthalmological, neurological, and psychological evaluations, the indication for which should be established based on the type, severity, and chronicity of the selective eating disorder.[19]

## COMPLICATIONS OF AVOIDANT/ RESTRICTIVE FOOD INTAKE DISORDER IN PEDIATRIC POPULATIONS WITH AUTISM SPECTRUM DISORDER

The consequences of ARFID include impaired nutritional status, such as growth retardation, micronutrient deficiencies, and dependence on dietary supplements. It also has a significant impact on psychosocial functioning and, in some cases, may be associated with being overweight.[20]

The coexistence of ARFID and autism can lead to an exceptionally restricted diet and serious nutritional deficiency problems with long-term complications (*Table 3*). Children with ASD tend to consume low amounts of fruits and vegetables, fish, and dairy products and high amounts of ultra-processed foods that are high in energy density and low in nutritional value, such as juices, sugary drinks, and snacks.[8,32]

## GENETIC ASPECTS ASSOCIATED WITH AVOIDANT/RESTRICTIVE FOOD INTAKE DISORDER

Both picky eating and neophobia toward food are characteristics considered to have a high degree of heritability,[16,33] presenting an intense fear reaction to food or an entire food group.[34,35] About 70% of the heritability in the development of ARFID is attributed to genetic variation between individuals.[33] Although ASD and ARFID coexist, often, this association cannot be generalized to all individuals. It has been proposed that ARFID-related phenotypes are moderately heritable and that the degree of heritability and the nature of the underlying genetic variants may be linked to how they present.[36]

Among the relevant genetic findings, a single nucleotide polymorphism (SNP) was identified on chromosome 5, near the *ZWIM6* gene, which has been previously associated with conditions such as schizophrenia and cognitive impairment.[36] De novo variants in this gene have also been found in patients without intellectual disability but with significant gastrointestinal symptoms.[37]

Although some genetic analyses suggest a potential genetic link, much remains to be studied. In the future, genetic information will help us understand whether ARFID shares a common etiology with eating disorders or neurodevelopmental disorders, potentially impacting its approach and treatment.[31]

## MICROBIOTA: ITS RELATIONSHIP WITH AVOIDANT/RESTRICTIVE FOOD INTAKE DISORDER IN THE PEDIATRIC POPULATION WITH AUTISM

Multiple factors, including the type of delivery, genetics, diet, physical activity, antibiotic use, and environmental exposure, influence the composition and function of the intestinal

microbiota.[38] Food selectivity and lack of dietary diversity are associated with ARFID and gastrointestinal problems due to changes in the gut microbiota, which shows an increase in potentially harmful bacteria and a decrease in beneficial bacteria. Children with ARFID may exhibit changes in the diversity of their gut microbiota compared to their peers.[13] Research on the composition of the microbiota in children with ASD remains inconsistent and contradictory.[13] An increase in bacteria such as *Faecalibacterium*, *Parabacteroides*, and *Clostridium* has been reported, along with a decrease in *Bifidobacterium* and *Lactobacillus*, species recognized for their beneficial effects.[39,40] This bacterial profile suggests a dysbiotic state that may contribute to the pathogenesis of ASD. The gut-brain axis, which integrates the gastrointestinal tract and the central nervous system, plays a crucial role in modulating brain function and behavior, and has been identified as a potential factor associated with ASD.[13,41] This is possibly due to negative feedback generated by the limited variety in the ASD diet. As a result, ASD symptoms are intensified through neuroinflammation, altered neurotransmitter production, and increased responses to stress.[13,42] Intestinal dysbiosis could worsen ASD symptoms through multiple biological mechanisms and metabolic pathways, which still need to be studied.[13]

To improve microbiota, it is recommended that individuals with ASD enhance their diet by incorporating natural foods. Consuming probiotics and engaging in regular physical activity are also ways to improve gut health. This could help improve some symptoms of ASD linked to

**Table 3. Nutritional deficiencies, physical symptoms, and complications associated with avoidant/restrictive food intake**

| |
|---|
| **Nutritional deficiencies** |
| Vitamin A and carotenoids |
| B vitamins: B1, B2, B3, B6, B9, B12 |
| Vitamin C |
| Vitamin D |
| Vitamin E |
| Calcium |
| Zinc |
| Magnesium |
| Potassium |
| Iron |
| Copper |
| Selenium |
| **Physical symptoms** |
| Gastrointestinal disorders |
| Constipation |
| Ulcers |
| Gastroesophageal reflux |
| Vomiting |
| Abdominal pain |
| **Complications in chronic situations** |
| Acute intestinal pseudo-obstruction (Ogilvie syndrome) |
| Anemia |
| Anxiety |
| Difficulty breathing and/or moving |
| Edema |
| Emerging psychiatric disorders, such as obsession/rigidity and sensory sensitivity |
| Gingivitis |
| Impaired cognitive and emotional development |
| Impaired immune function |
| Liver dysfunction |
| Malnutrition and/or growth retardation |
| Optic neuropathy secondary to hypovitaminosis A and B complex, and trace elements deficiency |
| Osteopenia, rickets, or a bone metabolism disorder |
| Scurvy |

gastrointestinal discomfort.[13] Further research is needed on the treatment, dosage, and effect of diet on the microbiota and behavior of children and adolescents with ASD.

## INTERVENTIONS FOR THE TREATMENT OF EATING DISORDERS IN PEOPLE WITH AUTISM

Although there have not been many clinical trials or meta-analyses in pediatric populations for the treatment of ARFID and ASD, various studies have reported favorable results with behavioral approaches and nutritional education (*Table 4*). Among behavioral approaches, "applied behavioral analysis" (ABA) stands out. ABA is based on three fundamental principles: reinforcement, extinction, and stimulus control.[16] Behavioral intervention strategies are the most widely documented. Behavioral intervention strategies include positive reinforcement, extinction, fading, and, to a lesser extent, differential attention and negative reinforcement.[15,43] Early intervention in children with ASD and ARFID is crucial, as it may be necessary to include nutritional supplementation, cognitive-behavioral therapy, and behavior modification approaches. However, evidence on the effectiveness of these interventions is still limited.[7]

Group therapies in which interdisciplinary teams of health professionals supervise feeding are effective.[15] Training and coaching health professionals to work as a team is effective and necessary.[44,45] These multidisciplinary therapies are accompanied by nutritional education for families and caregivers.[15]

Within structured programs, a randomized clinical trial has been conducted to treat moderate to severe selective eating in ASD using the Managing Eating Aversions and Limited variety (MEAL) plan, which is effective.[45] The MEAL plan includes ten 90-minute group sessions and follow-ups over 16 weeks of treatment. What sets the MEAL plan apart from other parent education programs is that, in addition to training sessions for families, children are monitored, specific strategies are designed for each child, and practical activities such as role-playing and demonstrations are included.[45] Other interventions that incorporate these principles could be studied in future clinical trials.

Based on the above, a summary of the strategies for treating ARFID in children with ASD is presented in *Figure 2*.

## CONCLUSION

Eating problems should be recognized as multifactorial, especially in the pediatric population. It is essential to routinely perform comprehensive dietary and nutritional assessments for the early detection and intervention of ARFID in children and adolescents with ASD.

Although this narrative review consolidates relevant findings, the available evidence remains limited and heterogeneous. Even so, it is recognized that behavioral and nutritional education aspects must be addressed through strategies tailored to each child with an interdisciplinary approach that involves families. Despite the findings presented, studies of higher methodological quality, as well as longitudinal and comparative studies, are required. ■

The supplementary material provided with this article is presented as submitted by the authors. It is available at: https://www.sap.org.ar/docs/publicaciones/archivosarg/2026/10745_Act_RuizBrunner_Anexo.pdf

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**Table 4. Systematization of interventions for the treatment of avoidant/restrictive food intake disorder in children with autism spectrum disorder based on reviews, meta-analyses, and clinical trials**

| Article | Country | Objective | Type of article | Type of treatment | Result |
|---|---|---|---|---|---|
| Sarcia B. 2021 [16] | USA | The purpose of this article is to provide an overview of ABA interventions used to address behavior when eating. | Literature review | Applied behavior analysis (ABA) | [a] Explains what ABA therapy. [b] It presents results ABA therapy using reinforcers and extinction strategies behavior. [c] It reports that there are a few studies on the long-term effects of its application. |
| Sharp WG, Burrell TL, Berry RC, Stubbs KH, McCracken CE, Gillespie SE, Scahill L. 2019[45] | USA | The objective was to evaluate the initial feasibility and effectiveness of a structured program for training parents of children with ASD and moderate food selectivity. | Randomized clinical trial lasting 16 weeks Group A: 19 children with ASD and picky eating whose families received the structured program (MEAL plan[1]) Group B (control): 19 children with ASD and picky eating whose families received parental education. | 10 structured 90-minute sessions for groups of the parents of children with ASD. One group was assigned the MEAL plan, which, in addition to training families, includes role-playing, practical activities, and specific strategies designed for each child. It includes behavioral interventions and nutrition education. Parenting education program had structured content, but did not include children. | [a] The following were observed greater responses positive in families who performed the structured program MEAL. [b] The MEAL plan, by including interventions and tailored to each child, showed greater effectiveness in the treatment of food selectivity [c] Group therapies that include parent training had effects positive in improving food selectivity in children with ASD. |
| Sharp WG, Volkert VM, Scahill L, McCracken CE, McElhanon B. 2017[15] | USA | Its objective was to evaluate care models and conduct a meta-analysis of program outcomes for children receiving intensive, multidisciplinary intervention for pediatric eating disorders. | Meta-analysis Studies from 2000 to 2015 Eleven studies were included, involving a total of 593 patients. | Treatment involves monitoring of meals by a multidisciplinary team. Interventions studied: • Behavioral intervention. • Nutritional education. • Oro-motor exercises. • Removal of. feeding tube. | [a] Eating at the treatment center under supervision shows better effects in treating serious problems. [b] Behavioral intervention proved positive. Behavioral intervention strategies included positive reinforcement, extinction, fading, and, to a lesser extent, differential attention, negative reinforcement, cost of response, and others. [c] Dependence on enteral feeding via. The tube was eliminated in 70% of cases. [d] Multidisciplinary supervision of meals led to an increase in oral consumption, improved behavior at mealtimes, and reduced parental stress. |

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|---|---|---|---|---|---|
| Sharp WG, Stubbs H, Adams H, Wells BM, Lesack RS, Criado KK, Simon EL, McCracken CE, West LL, Scahill LD. 2016[44] | USA | The objective of this pilot study was to investigate the feasibility and preliminary effectiveness of an intensive behavioral intervention based on a training manual for children with ARFID who show chronic food refusal and dependence on enteral feeding or oral nutritional formula supplements. | Pilot clinical trial with 20 children. The treatment lasted for five consecutive days. Ten children received the treatment and ten children did not. | Training for professionals based on a structured manual called iEAT. The treatment consists of supervising and addressing 14 feeding sessions over five consecutive days, each lasting 40 minutes, using behavioral strategies to address the issue. Parents participate in the final feeding sessions and receive training. | .[a] It has been proven that training therapists based on a manual can be effective for the behavioral approach to eating behaviors in children with ARFID. [b] This is only a pilot study that requires a larger sample size and further exploration of the approach. [c] This is a preliminary study by the same research group that later developed the MEAL plan. |

*MEAL: Managing Eating Aversions and Limited variety; ASD: autism spectrum disorder; ARFID: avoidant/restrictive food intake disorder; ABA: applied behavior analysis.*


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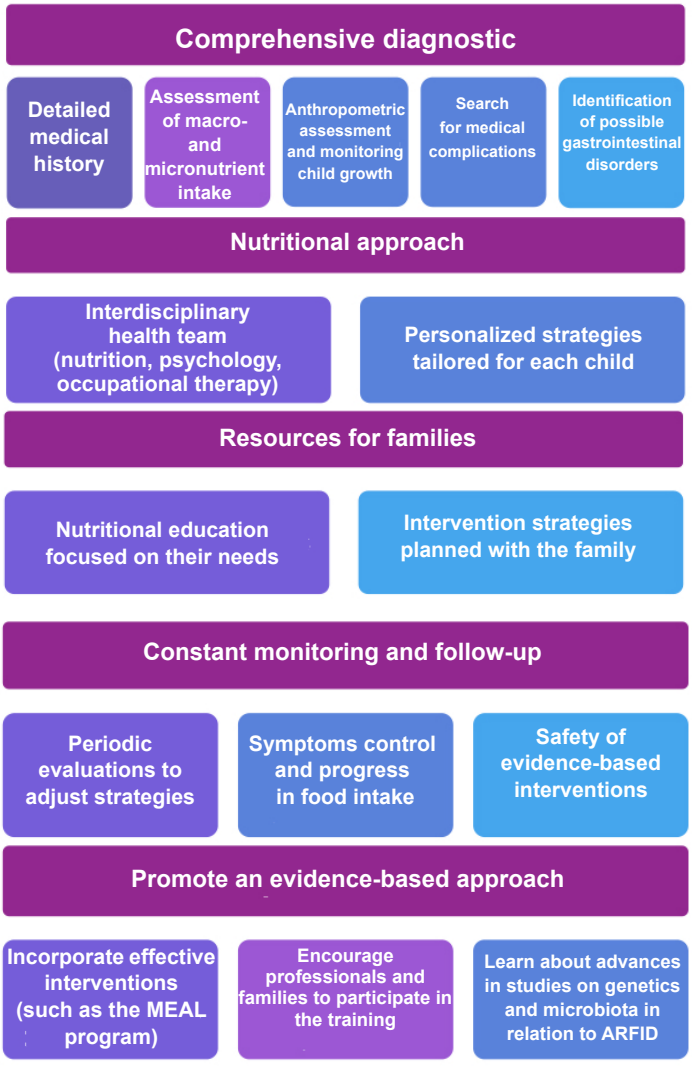
**Figure 2. Strategies for managing avoidant/restrictive food intake disorder in children with autism spectrum disorder**




*MEAL: Managing Eating Aversions and Limited variety; ARFID: avoidant/restrictive food intake disorder.*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