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Avoidant and Restrictive Food Intake Disorder

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Introduction

Avoidant restrictive food intake disorder (ARFID) is a recent eating disorder diagnosis introduced in the "Feeding and Eating Disorders" section of the *Diagnostic and Statistical Manual of Mental Disorders* (fifth edition) (*DSM-V*) (1), in 2013. ARFID replaces and expands the DSM- IV diagnosis of feeding and eating disorders in children. (2, 3) Since the introduction of ARFID as a diagnosis in 2013, research studies on ARFID have proliferated.

The hallmark of ARFID is a disturbance in eating or feeding pattern without fear of weight gain, or a drive for thinness or body dysmorphia, that are characteristic of other eating disorders such as anorexia nervosa (AN). The eating disturbance in ARFID can lead to a decreased variety/volume of food intake causing persistent failure to meet appropriate energy/nutritional needs and/or psychosocial impairment. (1, 4) Current studies show there is a lack of widespread awareness and recognition of ARFID across health care providers leading to an underdiagnosis of ARFID, despite improved understanding of feeding and eating disorders. (5–7)

In this review paper, we provide an overview of the current literature on ARFID and examine the clinical features, comorbidities, complications, diagnostic evaluation and management of this condition.

Epidemiology

Currently there is a lack of epidemiological data on the incidence and prevalence of ARFID in the community setting. Most reports of incidence in clinical settings have been based on retrospectively classified cases and have ranged from 5%−14% among patients presenting to tertiary pediatric eating disorder programs.(8, 9) A recent study presents incidence of 8% among patients diagnosed with ARFID at their initial assessment.(10) Prevalence of ARFID has ranged from 1.5%−23% among children and adolescents who presented to day treatment programs for eating disorders, pediatric gastroenterology outpatient clinics and inpatient eating disorder programs in North America.(11, 12) ARFID can begin in early infancy or childhood and may persist in to adulthood.(13) Patients with ARFID are more likely to be male, of a younger age group (4–11 years) and have a longer duration of illness compared to

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those with other eating disorders such as anorexia nervosa (AN) or bulimia nervosa (BN). (8, 9, 14–16)

DSM-5 diagnostic criteria

ARFID is a heterogeneous disorder with diverse etiologies, encompassing several types of clinical presentations, requiring varied treatment approaches. ARFID can occur in children and adolescents, as well as in adults.

According to the DSM-V, there are four distinct criteria that need to be met for an ARFID diagnosis.(1)

Criterion A demonstrates an eating or feeding disturbance associated with at least one of the following: significant weight loss, significant nutritional deficiency, dependence on enteral feeding or oral supplements such as a nutritional formula, and a marked change in psychosocial functioning. In this case, a feeding disturbance could be due to the following reasons:

- Low appetite and disinterest in food
- Avoidance of foods or narrow selection of foods related to sensory issues (e.g. related to smell, taste, texture)
- Avoidance or restrictive eating related to fear of consequences (such as choking, vomiting, and nausea).

Criterion B demonstrates that the interference with eating is not related to religious or cultural practices or lack of availability of food.

Criterion C demonstrates that the feeding disturbance is not due to another eating disorder such as anorexia nervosa or bulimia nervosa, evidenced by lack of body image issues or preoccupation with body weight.

Criterion D demonstrates that the feeding disturbance is not due to another psychiatric or medical condition (for example, gastrointestinal disease or malignancy) that may better explain the symptoms.(1, 17)

Children and adolescents with ARFID can present with one or more of the above characteristic features since they are not mutually exclusive and there is currently insufficient evidence to classify these presentations as distinct subgroups. At presentation, they can be of normal weight, overweight or underweight. They can be equally as underweight as those with AN. (8)

Comorbidities

A diagnosis of ARFID is associated with a higher prevalence of neurocognitive disorders, particularly autism spectrum disorder, anxiety disorder and attention deficit hyperactivity disorder. Compared with patients with AN, patients with ARFID have higher rates of anxiety disorder (8, 9, 15), pervasive developmental disorder (15), learning disorder (15),

attention-deficit hyperactivity disorder (8, 9, 15, 18), and obsessive compulsive disorder (9, 15) with a lower comorbidity of a mood disorder such as depression. (9, 19) As an example, in a study by Fisher et.al, among 98 patients who met the diagnostic criteria for ARFID, anxiety disorder was present in 60% and a comorbid medical condition was present in approximately 50% of patients.(9)

How do clinical features between AN and ARFID patients compare?

There have been several recent studies comparing clinical characteristics of patients diagnosed with AN and those with ARFID. Studies of patients hospitalized with ARFID report they tend to be younger, have less weight loss before admission, and have fewer eating disorder behaviors compared to patients diagnosed with AN. (16) Patients diagnosed with ARFID relied more on enteral nutrition and required longer hospital stays compared to patients with AN. (16) Both groups had similar remission and readmission rates in one study.(16) A study among a Japanese sample reported better outcomes over a course of 17 years among patients with ARFID compared to patients with AN. (20)

Complications

The eating disturbance pattern in patients with ARFID is associated with insufficient intake in terms of the overall energy needs and/or their nutritional needs resulting in acute and chronic side effects of malnutrition. The complications are summarized in Table 1.

Patients with ARFID and AN can have similar degrees of weight loss and malnutrition (15) Patients with ARFID can be significantly underweight with a longer duration of illness with a percent median body weight intermediate between those with AN and BN.(9)

ARFID patients can experience pubertal delay, growth retardation, have lower scores for bone mineral density, have symptoms related to macronutrient and micronutrient deficiencies such as iron deficiency anemia causing lethargy.(21)Patients with ARFID have significant dependence on enteral feeding (tube feeding) and/or oral nutritional supplements (such as Ensure, Boost, Orgain).(8) Patients with ARFID can be as sick and nutritionally compromised as patients with other eating disorders and may require medical stabilization in an inpatient unit. In one study, almost one third of the patients with ARFID required medical hospitalization.(8)

Given the heterogeneity of ARFID, the complications and medical morbidity may vary based on the type of clinical presentation. In one study, the ARFID-limited variety subtype with apparent lack of interest in eating reported a significantly longer length of illness when compared with ARFID-aversive patients, who restricted based upon fear of aversive consequences of eating.(22)

On the other hand, the ARFID-aversive patients were admitted into tertiary care more frequently compared with either ARFID-limited variety or ARFID-limited intake patients (those who restricted due to sensory sensitivity). (22)

Medical evaluation

History

Families of children and adolescents with ARFID are less likely to self-refer to an eating disorder program compared to patients with anorexia nervosa or bulimia nervosa. (9, 14–16, 18) Yet they tend to have a prolonged complicated history often characterized by multiple contacts with pediatric providers before receiving a formal eating disorder evaluation. It is important to engage parents and patients often using a multidisciplinary approach to make a diagnosis and treatment plan. (21)

The history is obtained by interviewing parent and child or adolescent together initially. During the latter part of the history taking, parent and child are interviewed independently. Data gathered from parents/caregivers, patient, specialist assessments and referring physician are used to determine the appropriate setting of the treatment and level of care.

A thorough birth, developmental, feeding, psychosocial history is critical to understand the impact of ARFID on the patient's physical and mental health. (21) Careful history of the patient's eating habits, such as dislike or fear of specific foods (due to smell, taste, color, temperature, and texture) should be collected. Since some patients may present with a lifelong history of "picky" eating or food avoidance, the timing of any change in feeding and eating patterns should be clarified along with any potentially precipitating events. Examples include past acute episode of choking, vomiting, diarrhea or other potentially precipitating gastrointestinal symptom, or a traumatic medical procedure that may have overlap with actions or behaviors associated with eating (e.g. barium swallow). Providers should also exclude food availability issues or any religious or cultural reasons for limiting diet or skipping meals. (9, 23) To determine whether the patient has or is at risk for any nutritional deficiencies, a thorough dietary assessment should be performed. This assessment should include a review of foods and beverages consumed, portion sizes and frequency of meals, and any specific intentional dietary restrictions or exclusions. It is crucial to query whether the patient has any body image concerns or preoccupation with weight, any history of binging or purging, use of diet pills, laxatives, diuretics or herbal supplements to lose weight, in order to differentiate from other eating disorders such as anorexia nervosa or bulimia nervosa. Patients with ARFID are often distressed about being thin and want to gain weight. (21) Finally, it is important to obtain the extent to which the feeding and eating disturbance interferes with the patient's psychosocial functioning such as school attendance, parental relationships and eating with others. (21)

A menstrual history is vital to obtain since pre-menarchal females may experience primary amenorrhea while post-menarchal females may experience secondary amenorrhea due to acute or chronic weight loss and malnutrition. It is important to determine if an individual has associated comorbidities such as anxiety disorder, ADHD, obsessive-compulsive disorder etc. or other underlying comorbid medical conditions. In addition, it is important to consider other etiologies that can present with weight loss and gastrointestinal symptoms such as malignancies, endocrine disorders (hyperthyroidism, type 1 diabetes, Addison's disease), infections (tuberculosis, human immune deficiency virus), gastrointestinal disorders (celiac disease, Crohn's disease, ulcerative colitis) or conditions that affect

swallowing (achalasia, tonsillar hypertrophy). Finally, obtaining a family history will provide information on whether other family members are affected by similar eating disturbance or other psychiatric disorders. (21)

Physical examination

The physical examination should include the individual's weight, height and body mass index. (Table 2) (24) Percent median BMI is calculated by using the formula: current BMI/ 50th percentile BMI for age and sex × 100. (24, 25)

Medical stability is determined by obtaining heart rate, blood pressure, and orthostatic changes in heart rate and blood pressure, as well as oral temperature. Patients can present with signs of malnutrition such as lanugo, pallor, bradycardia, orthostatic tachycardia, hypotension, or hypothermia. A detailed physical exam including a sexual maturity rating should be performed to determine the stage of puberty and any growth impairment. Providers should also look for clinical findings related to micronutrient deficiencies such as anemia and or iron deficiency. (21)

Lab tests

It is the practice of physicians treating eating disorders to perform some or all the following tests to assess the etiology of the weight loss and assess any complications.

- Complete blood cell count- for example, malnutrition can be associated with a decrease in all cell lines resulting in leukopenia, anemia and thrombocytopenia.
- Erythrocyte sedimentation rate (ESR) - to rule out inflammatory conditions or malignancies that can also be associated with weight loss. It is important to note that ESR is not a sensitive test for many inflammatory conditions and malignancies.
- Comprehensive metabolic panel, magnesium, phosphorous- To assess any electrolyte deficiency such as hypophosphatemia, hypomagnesemia, hypokalemia that can result from malnutrition
- Thyroid function tests (TSH, free T4, total T3) - to rule out thyroid disorders that can result in weight loss. Total T3 is often used as a marker of malnutrition in patients with an eating disorder. In addition, some patients may have "euthyroid sick syndrome" related to their malnutrition with normal TSH and decreased T3 or T4 levels.
- In post-pubertal patients, luteinizing hormone, follicle stimulating hormone, estradiol or testosterone levels can be obtained- All these values may be decreased in patients with malnutrition.
- Urinalysis- to assess degree of hydration by looking at urine specific gravity and ketones; to assess urine pH that can be high in patients with purging behaviors
- 25-OH vitamin D levels- patients with malnutrition can have a low vitamin D level that can be assessed and corrected during their treatment course

- Celiac disease screen consisting of tissue transglutaminase (TTG) antibodies and total IgA- particularly recommended in patients who have short stature or those who present with GI symptoms such as bloating, abdominal pain, diarrhea, nausea, vomiting or weight loss.

Management

ARFID is frequently under recognized and the efficacy of various treatments has not been established, however in limited studies and in specialized centers, a multidisciplinary approach has been shown to help affected children and their families. The multidisciplinary approach includes a combination of close medical monitoring, nutritional monitoring, parental education, adjunctive pharmacotherapy, hospital based re-feeding and psychosocial interventions such as cognitive behavioral therapy, family-based therapy and individual therapy.(26) Given that children and adolescents with ARFID have a heterogeneous presentation, they require different targeted treatment models. (27) Currently, there are no specific defined treatment models for ARFID or weight ranges or indicators of malnutrition in patients diagnosed with ARFID, unlike other eating disorder diagnosis in DSM-V.(28) Since patients with ARFID may present with a complicated psychological comorbidity, a generalized common treatment model is difficult to define.

Given the complex nature of ARFID presentation, assessment and management is best performed by a multidisciplinary team. This team can include physicians (pediatrician or an adolescent medicine physician), psychologists (with experience in treating eating disorders), psychiatrist (if medications are prescribed), dietitians (to help educate parents about the patient's nutritional needs), speech language pathologists (to assess swallowing), and occupational therapists (for biofeedback and recommendations for optimal position for eating - especially important for those patients who have experienced or have a fear of choking).

Goals of treatment:

The goals of management of ARFID patients are outlined below:

- Medically stabilize the patient
- Determine appropriate level of care (e.g. outpatient versus inpatient)
- Weight and growth restoration
- Nutritional rehabilitation- Increase variety of food intake
- Management of any fear and or pain associated with eating
- Restore joy of eating

Treatment goal weight is determined by looking at the patient's BMI growth charts and trying to return the patient to his or her pre-illness trajectory. (25) Often patients with ARFID can present chronically underweight that can complicate calculation of their treatment goal weights.

In such situations, a two-step process is recommended: (1) determination of the degree of malnutrition compared with the reference population using percent median BMI, z scores, and amount and rate of weight loss as described previously and then (2) determination of a healthy weight range for that individual, on the basis of previous height, weight, and BMI percentiles, pubertal stage, and growth trajectory (grade IVC). (29)

Criteria for hospitalization:

These criteria are based on guidelines for the medical management of restrictive eating disorders in adolescents and young adults presented in the Position Paper of the Society for Adolescent Health and Medicine (SAHM), as outlined below. (24)

- Severe bradycardia (heart rate <50 beats/min in the daytime and <45 beats/min at night)
- Hypotension (BP<90/45 mm Hg)
- Hypothermia (body temperature <96 degrees F or 35.6 degrees C)
- Orthostasis

  Increase in pulse (>20 beats/min)

  Decrease in blood pressure (>20 mm Hg systolic or >10 mm Hg diastolic)
- Low weight: < 75% Median body mass index for age and sex
- EKG abnormalities (e.g., prolonged QTc)
- Dehydration
- Electrolyte disturbance (e.g., low potassium, sodium, phosphorus)
- Acute medical complications (e.g., syncope, seizures, cardiac failure)

Hospital based refeeding has been positively utilized in children with low-weight ARFID. (16) Patients with ARFID may require longer hospital stays compared to patients with anorexia nervosa because a higher percentage of ARFID patients require enteral nutrition to meet their caloric needs.(16) Although tube feeding helps in refeeding low weight patients with ARFID, there are several short-term (tube blockage, need for replacement, tube displacement, balloon rupture) and long term complications (tube dependency, changes in hunger cues, nausea, recurrent vomiting, altered gastric emptying, bloating, chronic constipation or diarrhea, and GERD) associated with tube feeding. (29) In case of gastrostomy tube (G-tube) placement, there is the additional risk of leakage around the G-tube site, infection and hemorrhage around the G-tube site. (29)

Psychotherapy

Several eating disorder treatment centers have demonstrated use of cognitive behavioral therapy (CBT) and family-based therapy (FBT) in children and adolescents for successful nutritional rehabilitation and reduction of associated symptoms such as anxiety.(17, 30) A novel form of cognitive-behavioral therapy for ARFID (CBT-AR) has successfully treated ARFID in children >10 years of age and adolescents, as well as adults, over a 6–12-month

period and involves family and individual therapy that focuses on restoring nutrition, gradual reintroduction of certain foods, psychoeducation, and exposure therapy to accept characteristics of certain foods without judgement. (30) Principles of FBT that include externalization, agnosticism as to the cause of the illness, emphasizing the seriousness of the illness, parental empowerment and behavioral consultation has been demonstrated to successfully refeed patients with ARFID.(31)

Pharmacotherapy

Research on pharmacotherapy for patients with ARFID is currently lacking. Low dose olanzapine, an antipsychotic medication, and a selective serotonin reuptake inhibitor (SSRIs), such as fluoxetine, when used as an adjunct to other treatment modalities, have been shown to facilitate eating, weight gain, and the reduction of anxiety and depressive symptoms in ARFID patients.(32)

Examples of ARFID cases *(continued)*

Case 1 continued: 15-year-old male with poor appetite, lack of interest in food

A 15-year-old male, presents to an adolescent medicine eating disorder clinic after referral from his gastroenterologist for long-standing malnutrition and BMI < 5th percentile for all of his life. He has a diagnosis of autism spectrum disorder and learning disability.

He reports persistent lack of interest in food and poor appetite. He denies any body image concerns or fear of gaining weight or engagement in disordered eating behaviors. Past medical history is notable for “picky” eating with poor weight gain since childhood. The patient has had extensive evaluations by a gastroenterology service resulting in normal findings. A trial of cyproheptadine by the gastroenterologist did not result in improvement in his appetite.

Relevant family medical history is remarkable for stress, related to his father’s alcohol consumption and ongoing marital discord.

On examination, he is shy, anxious, thin-appearing with a flat affect, and speaking in monosyllables. His vital signs are significant for a 45-point orthostatic pulse change and a borderline BP of 90/48. His weight is less than 75% of median BMI, which is significant for severe malnutrition and medical instability, requiring hospitalization and nutritional rehabilitation as an inpatient. During his hospitalization, the child psychiatry team diagnoses him with ARFID and an anxiety disorder. He acknowledges that he is underweight but reports low appetite and eats small meal portions. However, he wants to get better to avoid frequent clinic and hospital visits. Upon discharge, he is showing slight progress with his eating, however requires three hospitalizations in a 1-year period for medical stabilization. He receives individual therapy as well as family-based therapy as an outpatient. He is followed every 1–2 weeks by the eating disorders team.

Discussion: This case demonstrates how patients with ARFID can be referred to the eating disorder clinic after being seen by multiple specialists for low BMI and picky eating without an organic cause being identified. This case also demonstrates how ARFID is associated

with comorbidities such as autism spectrum disorder, learning disability, and an anxiety disorder. It is important to note that ARFID patients can be quite sick as described here, with vital sign instability and severe malnutrition that requires medical stabilization in the inpatient setting.

Case 2 continued: 9-year-old female child with restrictive eating due to fear of choking

A 9-year-old female child presents to the eating disorder clinic with a history of restrictive eating due to a “fear of choking”. Four months ago, the parents and the child said she had an episode of choking while eating ice cream. Since then, the child started to obsessively worry she would choke if she ate any food.

She began to prefer fluids or softer foods, and she would take several hours to complete meals. Her weight started to drop and when she presented to the clinic; she had lost approximately 20 pounds in 4 months.

On examination, she is anxious, with a BMI at the 25th percentile (dropped from 50th percentile in the past year), with a low BP of 82/46, requiring hospitalization. During her hospitalization, the child psychiatry team diagnoses her with ARFID. She spends 3 weeks in the inpatient eating disorder unit for nutritional rehabilitation, psychotherapy and occupational therapy. During her inpatient stay, she has ENT and GI evaluations for her choking, including occupational therapy evaluation, barium swallow, and endoscopy, all of which unremarkable findings. She is started on fluoxetine 10 mg daily to manage her anxiety. After 3 weeks of inpatient treatment, her weight slowly increases; however, she continues to have a fear of choking when she eats any food. She is followed closely by the eating disorder medical and psychiatry team and is started on a behavior modification plan by the occupational therapist. Over the course of the next seven months, she slowly recovers from her fear of choking and makes significant progress towards eating a regular table diet.

Discussion: In this case, we see how ARFID presents in a young child in the context of a fear of consequences related to eating that can result in rapid weight loss and severe malnutrition causing medical instability that requires hospitalization. This case also demonstrates how young patients with ARFID can be successfully refed in a hospital setting using a multidisciplinary approach that includes medical and psychiatry teams and a behavior modification plan by an occupational therapist and a psychologist.

Case 3 continued: 12-year-old male with restrictive eating related to food texture

A 12-year-old male with a history of multiple food allergies is referred to the eating disorder clinic for weight loss and restrictive eating. He reports allergies to milk as a young child and to all nuts. He has been restricting his diet all his life.

During his evaluation at the eating disorder clinic, he denies any body image issues or fear of gaining weight. He reports sensitivity to foods with a soft texture such as applesauce, pudding, and butter. As a result of this sensitivity, he places additional restrictions on the variety of foods he eats, which leads to gradual weight loss of 8 lbs. in the past year. His vital signs are stable during his initial medical evaluation and he is at the 25th percentile BMI for his age. During the past few months preceding this visit, he would say that he was

"full" when he ate small amounts of food and his mother could not get him to complete his meals. He is doing well at school academically but has difficulty with social anxiety.

During his evaluation at a psychiatry clinic, he is diagnosed with ARFID and an anxiety disorder. He receives family-based therapy and individual therapy as an outpatient with close follow up by the dietitian, occupational therapist, and the medical eating disorders team and slowly increases the variety of his food intake.

Discussion: This case demonstrates how patients with ARFID present with a prior history of restrictive eating unrelated to a eating disorder such as food allergies and how ARFID can complicate the presentation with a gradual restriction of additional foods related to food texture, temperature, taste, and smell thereby leading to malnutrition. Thus, taking a thorough history about diet, 24-hour diet recall, and sensitivities to foods is very important. This case also demonstrates how a multidisciplinary approach is required for the management of ARFID.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Abbreviations

ARFID	Avoidant/Restrictive food intake disorder
AN	Anorexia Nervosa
BN	Bulimia Nervosa
DSM-V	*Diagnostic and Statistical Manual of Mental Disorders* (fifth edition)
FBT	Family based therapy
CBT	Cognitive behavioral therapy
SSRI	Selective serotonin reuptake inhibitor
SAHM	Society for Adolescent Health and Medicine
BMI	Body Mass Index
GERD	Gastroesophageal reflux disease

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Practice Gap

In 2013, revised guidelines were published on eating disorders, with the introduction of a newly classified eating disorder diagnosis called avoidant/restrictive food intake disorder (ARFID), in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*

Learning Objectives

After completing this article, readers should be able to:

1. Recognize diagnostic criteria for ARFID
2. Distinguish how patients with ARFID lack fear of weight gain or body image disturbances that are evident in other eating disorders such as anorexia nervosa
3. Recognize how ARFID is more often seen in males and younger patients compared to other eating disorders.
4. Recognize that ARFID is associated with comorbid psychiatric diagnosis such as anxiety or obsessive-compulsive disorder and developmental disorders such as autism
5. Understand that patients with ARFID can have significant disordered eating resulting in impaired growth, pubertal delay and malnutrition that might require medical stabilization in a hospital.
6. Identify how ARFID management requires a multidisciplinary approach.

We present three cases to introduce and exemplify the clinical characteristics of ARFID.

Case 1: 15-year-old male with poor appetite, lack of interest in food

A 15-year-old male, presents to an adolescent medicine eating disorder clinic after referral from his gastroenterologist for long-standing malnutrition and BMI < 5th percentile for all of his life. He has a diagnosis of autism spectrum disorder and learning disability.

Case 2: 9-year-old female child with restrictive eating due to fear of choking

A 9-year-old female child presents to the eating disorder clinic with a history of restrictive eating due to a “fear of choking”. Four months ago, the parents and the child said she had an episode of choking while eating ice cream. Since then, the child started to obsessively worry she would choke if she ate any food.

Case 3: 12-year-old male with restrictive eating related to food texture

A 12-year-old male with a history of multiple food allergies is referred to the eating disorder clinic for weight loss and restrictive eating. He reports allergies to milk as a young child and to all nuts. He has been restricting his diet all his life.

Summary

- On the basis of consensus, avoidant restrictive food intake disorder (ARFID) is a recent eating disorder diagnosis introduced in 2013 in the “Feeding and Eating Disorders” section of the *Diagnostic and Statistical Manual of Mental Disorders* (fifth edition) (*DSM-V*) (1).
- On the basis of consensus, children and adolescents with a diagnosis of ARFID have a disturbance in eating or feeding pattern without a fear of weight gain or body dysmorphia, which are characteristic of other eating disorders such as anorexia nervosa, that leads to decreased food intake and persistent failure to meet appropriate energy/nutritional needs and/or psychosocial impairment.(1)
- On the basis of consensus, the feeding and eating disturbances in ARFID are not related to religious or cultural practices or lack of availability of food. (1) The feeding disturbance is not due to another eating disorder such as anorexia nervosa and is not due to other psychiatric or medical conditions.(1, 17)
- On the basis of evidence, children and adolescents with ARFID have a feeding disturbance that could be due to avoidant restrictive eating related to fear of consequences (such as choking, vomiting, and nausea), sensory issues (e.g. related to smell, taste, texture), or low appetite/disinterest in food. (1, 8, 9, 26)
- On the basis of evidence, patients with ARFID are more likely to be male, of a younger age group (4–11 years), and have a longer duration of illness compared to those with other eating disorders such as anorexia nervosa or bulimia nervosa. (8, 9, 14–16)
- On the basis of evidence, children and adolescents with a diagnosis of ARFID can have associated comorbid neurocognitive disorders, particularly autism spectrum disorder, anxiety disorder, and attention deficit hyperactivity disorder. (8, 9)
- On the basis of recent case reports, patients diagnosed with ARFID benefit from a multidisciplinary team approach (if available), including physicians, psychologists, dietitians, speech language pathologists, and occupational therapists. (21)
- On the basis of recent case reports, children and adolescents with a diagnosis of ARFID can benefit from psychotherapy such as family-based treatment (FBT), cognitive behavioral therapy (CBT) and individual therapy. (27, 31, 33)
- On the basis of evidence, children and adolescents with a diagnosis of ARFID may be medically compromised similar to other eating disorder patients, requiring medical stabilization, enteral feeding and nutritional supplements. (16)

- Research on pharmacotherapy for patients with ARFID is currently lacking. Based on recent case reports, patients diagnosed with ARFID may benefit from pharmacotherapy such as anti-anxiety medicines like SSRIs and or low dose antipsychotics such as olanzapine, which has shown to improve weight gain in ARFID patients. (33)

Ideas for Quality Improvement projects

Problem statement:

To decrease readmissions in pediatric and adolescent patients diagnosed with ARFID

Background:

There is currently a lack of data on readmissions in pediatric and adolescent patients hospitalized for ARFID. Studies have shown that use of novel methods (such as the teach back method) of patient and family caregiver education and discharge checklists can help in decreasing readmissions.

Recommend setting a SMART goal (Specific, Measurable, Achievable, Relevant and Time-Bound)-

For example, decrease the percent of readmissions for pediatric and adolescent patients hospitalized for ARFID from 76% to 40% over the next 12 months.

Current State-

Measure the current readmission rates for hospitalized patients with ARFID.

Root cause Analysis-

Determine and understand the causes for the readmissions.

Key Drivers/ Countermeasures:

Once the current state is identified, propose counter measures- things that must happen consistently or structures that should be in place for target goals to be achieved. Examples would be use of teach-back method, a communication method where patients are asked to demonstrate their level of understanding by repeating back the information that is provided to them. (34) This method can be used to evaluate the parent/patient's understanding of the teaching and discharge instructions.

Sustainability Plan:

Ensure new measures have appropriate structure and people in place to maintain sustainability.

Table 1:

Complications of ARFID

Significant weight loss causing medical instability, requiring hospitalization (bradycardia, hypotension, orthostatic tachycardia and hypotension)
Severe malnutrition (with median BMI< 75th percentile)
Pubertal delay
Growth retardation
Micronutrient deficiencies (for example, iron deficiency anemia, Vitamin D deficiency)
Macronutrient deficiency (for example, protein calorie malnutrition)
Dependence on enteral nutrition
Decreased bone mineral density

Table 2:

Classification of Malnutrition in Adolescents and Young Adults with Eating Disorders

	Mild	Moderate	Severe
%mBMI	80%–90%	70%–79%	<70%
BMI *z* score	−1 to −1.9	−2 to −2.9	−3 or Greater
Weight loss	>10% Body mass loss	>15% Body mass loss	>20% Body mass loss in 1 year or >10% body mass loss in 6 months

A proposed classification of degree of malnutrition for adolescents and young adults with eating disorders as reported on Society for adolescent Health and Medicine (SAHM) position paper on medical management of restrictive eating disorders in adolescents and young adults

mBMI = median body mass index