Published in final edited form as:

J Am Acad Child Adolesc Psychiatry. 2020 February ; 59(2): 209–212. doi:10.1016/j.jaac.2019.09.037.

Co-occurrence of avoidant/restrictive food intake disorder and traditional eating psychopathology

Kendra R. Becker, PhD,

Eating Disorders Clinical and Research Program at Massachusetts General Hospital in Boston, MA, USA as well as the Department of Psychiatry at Harvard Medical School in Boston, MA, USA.

Lauren Breithaupt, PhD,

Eating Disorders Clinical and Research Program at Massachusetts General Hospital in Boston, MA, USA as well as the Department of Psychiatry at Harvard Medical School in Boston, MA, USA.

Elizabeth A. Lawson, MD,

Neuroendocrine Unit at Massachusetts General Hospital in Boston, MA, USA as well as the Department of Medicine at Harvard Medical School, Boston, MA, USA.

Kamryn T. Eddy, PhD,

Eating Disorders Clinical and Research Program at Massachusetts General Hospital in Boston, MA, USA as well as the Department of Psychiatry at Harvard Medical School in Boston, MA, USA.

Jennifer J. Thomas, PhD

Eating Disorders Clinical and Research Program at Massachusetts General Hospital in Boston, MA, USA as well as the Department of Psychiatry at Harvard Medical School in Boston, MA, USA.

To the Editor:

Avoidant/restrictive food intake disorder (ARFID) is a feeding/eating disorder introduced in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* characterized by inadequate volume and/or variety of food intake.¹ ARFID represents an expansion of the prior *DSM-IV* disorder “Feeding Disorder of Early Childhood” that can be diagnosed across the lifespan.^{1,2} *DSM-5* clearly states that ARFID cannot be diagnosed in the context of significant shape/weight concerns and associated behaviors.¹ However, our clinical team has observed multiple instances in which adolescent girls have presented with frank ARFID and simultaneously reported, or ultimately developed, traditional eating-disorder psychopathology. The following two cases are representative of the most common presentations of this diagnostic overlap that we have seen. We discuss possible reasons for this overlap and suggest two revisions to *DSM* criteria that may help in treatment planning

for this unexpected comorbidity. Each patient provided written consent for their case to be included.

Case 1.

A 12-year-old girl choked on a piece of bread, developed an intense fear of choking, and abruptly lost a significant amount of weight (12 lbs), falling off her growth curve. She met *DSM-5* criteria for ARFID via A1 (i.e., significant weight loss precipitated by fear of choking). Her declining weight alarmed her pediatrician, prompting development of a treatment plan for weight re-gain. During treatment, she initially re-gained a small amount of weight, but reached a plateau and began refusing high-calorie foods. She developed *de novo* body checking (e.g., using a measuring tape to check her waist circumference) and avoidance (e.g., wearing baggy clothing), yet remained fearful of choking and unable to eat previously preferred foods.

Case 2.

A 16-year-old girl had a long history of selective eating (consuming no fruits or vegetables) since childhood. Due to her limited diet, she had a vitamin D deficiency and her providers felt she was at risk for iron deficiency. She felt guilty that her food restrictions impacted peer and family activities (e.g., she struggled to eat at restaurants, family holidays, or while traveling). To prevent embarrassment, she avoided eating with others. She met ARFID criteria via A2 (risk for nutritional deficiency via a blood test) and A4 (psychosocial impairment). Because she ate preferred foods only when alone, she often went long periods (e.g., the entire school day) without eating, leading her to eat large quantities of preferred foods when at home. She reported feeling out of control and eating rapidly during these twice-weekly binge-eating episodes. The high-calorie, high-sugar, and high-fat nature of her preferred foods resulted in weight gain and she was extremely dissatisfied with her appearance. Subsequently, she attempted to follow strict dietary rules to limit her already restricted dietary range in an effort to lose weight.³

Discussion

We hypothesize that—rather than being completely distinct disorders as suggested in *DSM-5*—a combination of neurobiological factors and developmental stressors may engender traditional eating-disorder psychopathology in adolescents with ARFID. ARFID may (1) share endophenotypes with symptoms of other eating disorders, simultaneously increasing risk for all forms of disordered eating and/or (2) ARFID symptoms themselves or accommodation to ARFID symptoms may precipitate additional eating pathology.

(1). Some individuals with ARFID who have heightened sensory sensitivity to taste, appearance, or texture report extreme disgust responses to certain foods.² Picky eating in childhood is considered a prospective risk factor for later AN development.⁴ Perhaps individuals with ARFID who also exhibit disgust sensitivity are at risk for generalizing disgust responses to their body shape, particularly during key life-transitions like puberty. Early evidence shows that individuals with ARFID have a heavy reliance on detail-level processing, a cognitive thinking style marked by rigidity that may underlie inflexibility in

dietary variety.⁵ Additionally, detail-level cognitive processing is implicated in the pathogenesis of disordered eating, particularly in AN.⁶ Poor interoceptive awareness is also a risk factor for the development of eating disorders and is associated with difficulty interpreting gastrointestinal stimuli.⁷ Irregular eating patterns in ARFID may be related to disrupted appetite awareness via dysregulated hunger and satiety cues.²

(2). Adolescence is marked by increasing significance of complex peer relationships and adolescents tend to want to be more similar to their friends.⁸ Many ARFID symptoms such as weight changes and irregular eating habits are obvious. While symptoms such as weight loss may be praised, others such as weight gain or reliance on preferred/safe foods, may be teased. Weight loss and weight-related teasing are considered risk factors for the development of eating-disorder psychopathology.^{7,9} ARFID eating can also be associated with significant changes in family functioning.² Overprotection, high maternal anxiety, difficult meals, and conflict about food/eating increase risk for eating disorder development in longitudinal studies.^{7,10}

Research suggests eating-disorder recovery is most likely if treatment is initiated soon after illness onset and treatment outcomes for anorexia nervosa are best for adolescents.¹¹ Failure to achieve full recovery during adolescence from eating/feeding disturbances puts individuals at risk for serious, possibly long-lasting, medical complications (e.g., structural and functional brain abnormalities, bone loss).^{2,12} Our team provides Cognitive-Behavioral Therapy for ARFID (CBT-AR) to individuals with ARFID, which includes several techniques (e.g., regular eating, weighing, food fear hierarchies) common to empirically-supported therapies for traditional eating disorders.² In our clinical practice we have seen some cases in which supplementing these common techniques with psychoeducation targeting weight/shape (e.g., weight redistribution occurring first in the abdomen; appropriate mirror use) from Cognitive Behavior Therapy and Eating Disorders (CBT-E)¹³ is sufficient for elimination of weight/shape-motivated behaviors (e.g., body checking, dietary rules). However, research is needed to describe different presentations of overlapping ARFID and eating disorder psychopathology and to support specific recommendations depending on presentation.

To better understand the prevalence and nature of this overlap, we recommend ongoing assessment for traditional eating-disorder psychopathology in adolescents who present with ARFID symptoms and assessing for ARFID symptoms in those who present with traditional eating disorders. In Table 1 we propose two possible options in which the diagnostic criteria for feeding/eating disorders could be revised, to address the diagnostic dilemmas typified by Case 1 and Case 2 and guide treatment development. Option 1 would allow ARFID and eating-disorder psychopathology to be diagnosed simultaneously with one diagnosis identified as primary, potentially determined by the order of symptom development or current symptom severity. In contrast, option 2 would clarify that the development of weight/shape-motivated behaviors should always represent diagnostic crossover. Currently a diagnosis of AN or BN would trump a diagnosis of ARFID, but option 2 would clarify that a diagnosis of BED or OSFED would also be a trump. Treatment outcome research as well as studies exploring common traits between feeding and eating disorders and the impact of

developmental factors on illness trajectory would help inform if either option is an appropriate revision to *DSM* criteria.

In our clinical experience, it is not unusual for adolescents who present with frank ARFID to simultaneously report or subsequently develop traditional eating-disorder psychopathology. Exploring the prevalence and severity of eating disorder psychopathology in ARFID, delineating illness trajectories (including diagnostic crossover from ARFID to traditional eating disorders and vice-versa), examining shared biological vulnerabilities, and how/when to address this co-occurrence in treatment represent important areas for research. Findings will be relevant in informing potential revisions to diagnostic classification.

Acknowledgements:

Research reported in this publication was supported by the National Institute of Mental Health of the National Institutes of Health under F32MH111127 awarded to Dr. Kendra R. Becker; R01MH108595 awarded to Drs. Jennifer J. Thomas, Elizabeth A. Lawson, and Nadia Micali; and K24MH120568 awarded to Dr. Elizabeth A. Lawson. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Conflict of interest: Over the past two years, Dr. Kendra R. Becker reports that she has received additional funding from the Global Foundation for Eating Disorders and Harvard Medical School as well as honoraria from the Australian and New Zealand Academy of Eating Disorders (ANZAED) and the Hispanic and Latin American Academy of Eating Disorders for academic speaking engagements. Dr. Lauren Breithaupt reports that she has received funding from the National Science Foundation for grant numbers 1000183151 and 16012 as well as funding from Zeta Tau Alpha, the Swedish Research Council, and the PEO Foundation. For academic speaking engagements, Dr. Breithaupt has received honoraria from Georgetown Medical School and Virginia Bioscience. Drs. Elizabeth A. Lawson, Kamryn T. Eddy, and Jennifer J. Thomas have received further funding from the National Institutes of Health (NIH) for R01MH103402 and R01MH116205. Dr. Lawson reports additional NIH funding from grant numbers R01DK109932, R21HD090396, and P30DK040561 as well as funding from the Partners Innovation Discovery Grant Program. Drs. Eddy, Thomas, Becker, and Lawson report further funding from the Hilda and Preston Davis foundation and Drs. Eddy, Thomas, and Becker have also received funding from the American Psychological Foundation. Dr. Eddy and Thomas report further funding from the Lawrence J. And Anne Rubenstein Charitable Foundation. Drs. Lawson, Eddy and Thomas have all received honoraria for serving as NIH grant reviewers and Drs. Eddy and Thomas have also received honoraria for grant reviews as part of the Department of Defense. Dr. Lawson has received honoraria for speaking engagements including the Tufts Human Nutritional Center Seminar series, the University of Illinois Chicago Endocrine Grand Rounds, and the 13th World Congress on Neurohypophyseal Hormones. Dr. Lawson is on the scientific advisory board and has a financial interest in OXT Therapeutics, a company developing an intranasal oxytocin and long-acting analogs of oxytocin to treat obesity and metabolic disease. Both Dr. Eddy and Thomas report honoraria from the Veritas Collaborative, and the Bridge Training Institute for speaking engagements. Dr. Eddy has received honoraria from the Children's Hospital of Philadelphia and the International Association of Eating Disorders Professionals for academic speaking and professional training engagements. Dr. Thomas also reports honoraria from John Wiley & Sons, Inc. for service as an associate editor for the *International Journal of Eating Disorder*, and from the Academy of Eating Disorders for serving on the Board of Directors. For academic speaking engagements, Dr. Thomas has received additional honoraria from ANZAED, the Universidad de Monterrey, the Children's Hospital of Orange County, the University of California San Diego, North Shore Medical Center, the Cincinnati Children's Hospital, Rhode Island College, and Walden Behavioral Care for academic speaking engagements and professional trainings. Dr. Thomas receives royalties from Harvard Health Publications and Hazelden for the sale of her book, *Almost Anorexic: Is My (or My Loved One's) Relationship with Food a Problem?*. Drs. Thomas and Eddy receive royalties from Cambridge University Press for the sale of their book, *Cognitive-Behavioral Therapy for Avoidant/Restrictive Food Intake Disorder: Children, Adolescents, and Adults*. Dr. Lawson receives royalties from UpToDate, Inc. for *Anorexia nervosa: Endocrine complications and their management*. All authors are employed and receive income from the Massachusetts General Hospital and Drs. Becker, Eddy, and Thomas each receive income from their respective private psychotherapy practices. The interests of all authors were reviewed and are managed by Massachusetts General Hospital and Partners HealthCare in accordance with their conflict of interest policies.

References

1. Association AP. Diagnostic and Statistical Manual of Mental Disorders (DSM-5). 5 ed. USA: American Psychiatric Association; 2013.

2. Thomas JJ, Eddy KT. Cognitive-Behavioral Therapy for Avoidant/Restrictive Food Intake Disorder: Children, Adolescents, & Adults. Cambridge, UK: Cambridge University Press; 2019.
3. Becker KR. Case Example #3: A 16-year-old girl with sensory sensitivity, lack of interest in eating or food, comorbid binge eating, and obesity (individual CBT-AR) In: Thomas JJ, Eddy KT, eds. Cognitive-Behavioral Therapy for Avoidant/Restrictive Food Intake Disorder: Children, Adolescents, & Adults. Cambridge, UK: Cambridge University Press; 2019 123–127.
4. Marchi M, Cohen P. Early Childhood Eating Behaviors and Adolescent Eating Disorders. *Journal of American Academy of Child & Adolescent Psychiatry*. 1990;29(1):112–117.
5. Becker KR, Plessow F, Keshishian AC, et al. Does heightened attention to detail differentiate anorexia nervosa and avoidant/restrictive food intake disorder? *Eating Disorder Research Society* 2018; Sydney, Australia.
6. Lang K, Lopez C, Stahl D, Tchanturia K, Treasure J. Central coherence in eating disorders: an updated systematic review and meta-analysis. *World J Biol Psychiatry*. 2014;15(8):586–598. [PubMed: 24882144]
7. Jacobi C, Hayward C, de Zwaan M, Kraemer HC, Agras WS. Coming to terms with risk factors for eating disorders: application of risk terminology and suggestions for a general taxonomy. *Psychol Bull*. 2004;130(1):19–65. [PubMed: 14717649]
8. Brown BBL J. Peer Relationships in Adolescence In: Lerner RMS L, ed. *Handbook of Adolescent Psychology*. Vol 2 Contextual Influences on Adolescent Development. 3 ed. Hoboken, New Jersey: John Wiley & Sons, Inc.:74–103.
9. Haines J, Neumark-Sztainer D, Eisenberg ME, Hannan PJ. Weight teasing and disordered eating behaviors in adolescents: longitudinal findings from Project EAT (Eating Among Teens). *Pediatrics*. 2006;117(2):e209–215. [PubMed: 16452330]
10. Kotler LA, Cohen P, Davies M, Pine DS, Walsh BT. Longitudinal relationships between childhood, adolescent, and adult eating disorders. *Journal of American Academy of Child & Adolescent Psychiatry*. 2001;40(12):1434–1440.
11. Zipfel S, Giel KE, Bulik CM, Hay P, Schmidt U. Anorexia nervosa: aetiology, assessment, and treatment. *The Lancet Psychiatry*. 2015;2(12):1099–1111. [PubMed: 26514083]
12. Westmoreland P, Krantz MJ, Mehler PS. Medical Complications of Anorexia Nervosa and Bulimia. *Am J Med*. 2016;129(1):30–37. [PubMed: 26169883]
13. Fairburn CG. *Cognitive Behavior Therapy and Eating Disorders*. New York, NY: Guilford; 2008.

Table 1

Two Possible Diagnostic Options for Case 1 and Case 2

	DSM-5 criteria met for ARFID¹	DSM-5 criteria met for a traditional eating disorder¹	Diagnostic option 1: Allow for co-occurrence of feeding and eating disorders	Diagnostic option 2: Clarify diagnostic crossover with clear trump rules
Case 1	Acute food avoidance following a choking episode resulting in significant fear of choking and subsequent weight loss of greater than 10 lbs and crossing from 75th to 50th percentile	Significant weight loss, intense fear of gaining weight, and undue influence of body weight/shape on self-evaluation as evidenced by self-measuring of waist and skipping meals/snacks with high calorie items	ARFID + OSFED: Case 1 met all criteria for <i>DSM-5</i> AN-R except reaching significantly low weight. Thus, she met criteria for OSFED, and in particular, atypical AN. ¹ <i>DSM-5</i> does not currently allow for the concurrent diagnoses of ARFID and atypical AN, although the patient met criteria for both.	OSFED
Case 2	Long-standing selective eating (avoidance of all fruits, animal proteins, and vegetables) due to sensory sensitivity resulting in psychosocial impairment, vitamin D deficiency, and risk for iron deficiency. ³	Long periods of fasting (8 or more hours) followed by recurrent binge eating, characterized by eating alone from embarrassment, feeling guilty/disgusted afterwards, eating rapidly, and distress around binge eating. ³	ARFID + BED Case 2 met criteria for <i>DSM-5</i> BED. <i>DSM-5</i> does not currently allow for the concurrent diagnoses of ARFID and BED ¹ , although the patient met criteria for both. ³	BED

Note: ARFID = avoidant/restrictive food intake disorder; *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders 5th edition*; BMI = body mass index; AN-R: anorexia nervosa-restricting subtype; AN = anorexia nervosa; OSFED = other specified feeding or eating disorder; BED: binge eating disorder.