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# Eating Disorders Review

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## A Broad View: Disordered Eating on the Autism Spectrum

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Autism spectrum disorder (ASD) is a neurobiological condition defined by limitations in communication and social interaction. However, the secondary or ancillary aspects of the condition typically receive the most interest in research and practice, including atypical sensory processing and stimulus over-selectivity.

Autism studies have maintained a strong pediatric focus despite the fact that most people on the spectrum are adults. Consequently, a consensus is now emerging that for too long the adult cohort has been neglected, preventing a complete understanding of the health-related patterns (including eating disorders) during the adult years.<sup>1</sup>

### **New Studies, Old Definitions**

Eating pathologies for children on the autism spectrum have been relatively well studied, with a highly cited figure of 90% prevalence for this cohort.<sup>2,3</sup> A new study among adults with autism has reported a range of EDs that span 6% to 17% of this population.<sup>4</sup> However, our understanding is greatly affected by the way diagnostic criteria are established under the *DSM-5*. Here, language states that if an eating disorder is subsidiary to a mental condition -- such as autism -- then a secondary diagnosis is not warranted, except in certain circumstances (e.g., the presence of pica) where outcomes are "sufficiently severe."<sup>5</sup> The consequences of this are profound, as it prevents autism researchers from determining the true rates of prevalence. This, in turn, inhibits discussion on how EDs should be conceptualized, assessed, diagnosed, or treated for this and other cohorts with disabilities.<sup>6</sup> Consequently, autism studies remain in the early stages of making sense of these behaviors.

This overview looks at the manifestation of these disordered eating patterns from a broad view, and argues that four expansive types of disordered eating can be defined. Each is discussed in terms of manifestations, clinical significance, and current treatment options.

### **Four Categories of Disordered Eating on the Autism Spectrum**

**Behavioral rigidity.** Behavioral rigidity is a characteristic of many psychopathologies, including autism. In the difficulty in transitioning between activities, environments, or even internal aspects of the same task, behavior rigidity is often reflective of deficits in self-regulation. The first category of disordered eating references this type of behavior in the context of food and consumption. Behaviors on the autism spectrum falling into this category include food cravings,<sup>7</sup> food refusals,<sup>8</sup> and, particularly, a limited diet.<sup>9,10</sup> In this last group, both a narrow focus on specific foods as well as overreliance on specific food classes (e.g., refined carbohydrates) can predominate.

Because these varied behaviors are not driven by concerns about either body shape or weight, they are positioned as analogous to Avoidant/Restrictive Food Intake Disorder (ARFID) rather than eating disorders. Restricted eating on the spectrum has been most thoroughly studied in children, and has been noted as one of the predominant eating-related patterns during this period of the life cycle.<sup>11</sup>

Treatment for food rigidity relies primarily on behavioral techniques, especially "escape extinction," where food is continually presented until acceptance occurs.<sup>12</sup> However, the results of research studies have shown that increasing overall food intake has been more successful in interventions than as a means of increasing actual dietary variety.<sup>13</sup>

**Sensory abnormalities.** The second category of disordered eating and autism includes sensory abnormalities that affect hearing, vision, touch, and smell. For all of these systems, atypical sensory functioning is likely to contribute significantly to eating pathologies, though there still is only limited research.<sup>14</sup> As with most autism-related studies, children have been the primary focus where oral preferences and motor difficulties have been noted,<sup>15</sup> along with more generalized sensory abnormalities.<sup>16,17</sup> One small study assessed higher-functioning adults for the ability to discriminate among taste samples. Although the sample population was found to be less accurate in identifying bitter, sweet, and sour tastes than were healthy controls, they were comparable to a control group in the identification of salty foods.<sup>18</sup> A review of olfaction for individuals with ASD found "possible involvement" of impairment of sensory systems, suggesting more study is merited.<sup>19</sup> Early tactile sensitivities have also been proposed as a contributor to specific food preferences. <sup>8</sup>

From a qualitative perspective, this topic can be explored in more depth by reading the autobiographies and memoirs of high-functioning individuals with autism. For example, Stephen Shore, now a professor and autism advocate, remembered growing up in the following way:

"Brown or black food wouldn't be eaten, as I insisted that they were poisonous. Canned asparagus was intolerable due to its slimy texture, and I didn't eat tomatoes for a year after a cherry tomato had burst in my mouth while I was eating it. The sensory stimulation of having that small piece of fruit explode in my mouth was too much to bear and I was not going to take any chances of that happening again.

Carrots in a green salad and celery in tuna fish salad are still intolerable to me because the contrast in texture between carrots or celery and salad or tuna fish is too great. However, I enjoy eating celery and baby carrots by themselves. Often as a child, and less now, I would eat things serially, finishing one item on the plate before going on to the next."<sup>20</sup>

This ability to articulate interior rules has contributed to a better understanding of how food (including the size of the bolus, texture, flavor, color, and shape) can affect eating patterns for this population. <sup>21,22</sup>

**Behaviors with significant health risks.** The third category of disordered eating on the autism spectrum incorporates a disparate group of behaviors that "because of the significant health-related risks -- require substantial resources and support staff to manage. This group includes pica, rumination, and disruptive mealtime behaviors.<sup>23,24</sup> Despite the severity, there are no clinical guidelines for assessment or treatment.

Pica, or eating nonnutritive substances, is manifested in the general public as a discriminant behavior typically involving a single class of substance, for example, pregnant women eating clay. On the autism spectrum, however, this behavior is usually manifested in non-discriminant consumption patterns that likely favor opportunity.

Cigarette pica is reported as the most commonly ingested item for this population, <sup>25-27</sup> despite the fact that rates of nicotine, caffeine, and drug abuse are currently very low.<sup>28</sup> Items reported to have been ingested by individuals with ASD or ID in published research are amazingly wide-ranging, and include: dirt,<sup>26,27,29</sup> chalk,<sup>30</sup> cigarettes,<sup>31,32</sup> plastics,<sup>27,33-36</sup> foam rubber,<sup>37</sup> string,<sup>38,39</sup> paper, <sup>26,31,37,40,41</sup> paper clips,<sup>42</sup> rubber bands,<sup>35,43</sup> clothes <sup>26,34,41</sup> or cloth,<sup>38,44</sup> grass,<sup>45</sup> metal,<sup>33,44</sup> buttons,<sup>26,46</sup> hair,<sup>26,34,41</sup> feces,<sup>26,40,45,47</sup> vomit,<sup>39</sup> rocks,<sup>34,45,47,48</sup> glass,<sup>45</sup> broken light bulbs,<sup>45</sup> insects, <sup>45</sup> paint chips,<sup>27,40</sup> pencils, <sup>40</sup> trash,<sup>46</sup> toiletries,<sup>46</sup> cleaning products,<sup>27</sup> sewing needles,<sup>46</sup> tar,<sup>48</sup> vinyl,<sup>49</sup> or rubber gloves,<sup>47</sup> carpet,<sup>41,50</sup> foam padding,<sup>41</sup> toilet bowl fresheners,<sup>29</sup> spoiled food,<sup>39</sup> mothballs,<sup>29</sup> plastic tubing,<sup>34,35</sup> tea bags,<sup>46</sup> keys,<sup>34,47</sup> crayons,<sup>34</sup> twigs,<sup>34,47</sup> alkaline batteries,<sup>35,47</sup> soap,<sup>39,47</sup> sealed snack bags,<sup>35</sup> wood chips,<sup>48</sup> jewelry,<sup>35</sup> Styrofoam,<sup>27</sup> coffee grounds,<sup>39</sup> aftershave lotion,<sup>46</sup> toilet water,<sup>39</sup> holiday decorations,<sup>51</sup> and dead animals.<sup>34</sup>

The highest rates of pica behavior on the autism spectrum, from 26% to 65%, have been documented in

institutionalized settings.<sup>52</sup> Rates are significantly reduced in community-based residences, where there is a greater emphasis on social stimulation; here, published rates span 0.2% to 4%.<sup>52</sup> However, so many differing methodologies and definitions of pica have been utilized that analysis across this body of research is difficult.<sup>53,54</sup>

Treatment for patients on the autism spectrum typically addresses pica as either a challenging behavior (CB) or as a psychopathology. CBs are considered culturally abnormal actions that can either put the individual (or those around him or her) at risk, or that are so disruptive as to limit access to the community.<sup>55</sup> In their ability to affect quality of life, limit independence, and create social isolation, CBs are among the most studied and one of the most socially unacceptable aspects of ASD.<sup>56</sup> Learning-based approaches are common for treatment of CB, and include Applied Behavior Analysis (ABA), behavior therapy, social skills training, reinforcement models and token economies.

Pica as a psychopathology typically relies on psychological explanations of autism.<sup>57,58</sup> Though conditions such as anxiety, depression, or even psychosis are difficult to differentially diagnose in a population that is 40% nonverbal, psychiatric symptoms are highly prevalent, with rates for comorbidities ranging from 36% to 81%.<sup>57,59,60</sup>

Pharmacologic approaches for the treatment of pica have included the use of selective serotonin reuptake inhibitors (SSRIs), often fluoxetine, based on its anti-anxiety and anti-obsessive properties.<sup>30,46,50,61,62</sup> Both antipsychotics and atypical antipsychotic have also been utilized in treatment, with varied effectiveness.<sup>63</sup>

While medications are likely the most common treatment modality for all forms of CBs -- particularly in adults -- they have also been linked to the etiology of pica. Research as to underlying causes of pica have found that psychotropics and anticonvulsants are significantly associated for individuals with ID who display of pica.<sup>64</sup> Neuroleptic medication is also believed to have a link with pica, possibly due to diminished postsynaptic dopamine receptor changes, which may worsen the behavior.<sup>65</sup>

Whatever the perspective, the predominant treatment for pica behavior outside of research contexts is simply "pica-proofing" the patient's environment. In treatment settings, this usually involves the use of additional staff to protect an individual by sweeping a room for possible pica items and by limiting the opportunities to engage in pica behavior within the larger community.

**Rumination.** Rumination is also documented on the spectrum, though its prevalence is not completely understood due to the difficulty in clinically identifying this condition in nonverbal populations. Rates of rumination for individuals with autism and ID are estimated in the range of 6% to 10%.<sup>66</sup> Along with the immediate risk of aspiration, rumination contributes significantly to increased mortality rates,<sup>67</sup> as well as long-term concerns about dehydration, malnutrition, and gastrointestinal bleeding.<sup>68-70</sup> Because of the silent nature of this condition and the significant outcomes, identification of rumination warrants a full clinical workup. <sup>66</sup>

Treatment approaches for rumination on the spectrum have focused on supplemental feedings to break the regurgitation cycle, use of preferred stimuli, and emphasis on overall increased or alternative stimulation.<sup>71</sup>

**Rapid eating behaviors.** The last group of disordered eating noted on the autism spectrum involves a range of rapid eating behaviors<sup>72-75</sup> that approximate binge eating disorder (BED). Binge eating has been documented in institutionalized adults with ID at rates ranging from 3%- to 42%; in adults in community-based residences, reduced rates, ranging from 1% to 19%, have been noted.<sup>53</sup> There is relatively strong anecdotal evidence (and some research) to demonstrate that rapid consumption patterns are highly prevalent on the autism spectrum, <sup>72,73,76,77</sup> and more generally established among individuals with developmental and intellectual disability disorder (IDD).<sup>74</sup>

Traditionally the predominant risks of rapid eating were believed to be related to aspiration, choking, and weight gain through an override of satiation markers. For those with autism, it is also likely to contribute to both indigestion and ongoing social isolation. New research on this topic has documented a relationship between a high body fat ratio and rapid eating and hypothesized a relationship due to insulin resistance.<sup>78-80</sup>

In designing treatment modalities for all populations that address rapid consumption, the challenge lies in overcoming the fact that the food of choice is itself reinforcing. Thus, the faster an individual eats, the faster they consume,

thereby shaping rapid consumption. Typical strategies for treatment on the spectrum often involve placing support staff so as to actively coach a reduction in the speed of bites.<sup>81</sup> Newer, more innovative strategies utilizing technology have incorporated the use of a vibrating pager to cue consumption at fixed intervals. This approach has been found to decrease the rate of eating in teenagers on the spectrum<sup>72</sup> and in several case studies of adolescents<sup>76,77</sup> but is not currently in widespread use.

Rapid eating as manifested in binge eating disorder (BED) was first included in the *DSM-5*, and is now the most common eating disorder in the United States. From the perspective of a formal diagnosis, BED is considered to be idiopathic, and is defined by an absence of compensatory behaviors such as co-occurring AN or BN.

The formal BED diagnostic criteria demonstrate the difficulties of applying *DSM-5* language to individuals with autism, even when the behavior is highly prevalent. Due to communication deficits and alexithymia, applicability of stipulated criteria for BED would necessitate translating subjective symptoms to objective signs. By adjusting these criteria (see *Table 1*) it is possible to create applicable standards that capture behaviors manifested in those with autism. The only exception to this is the identification of “disgust, depression or guilt,” which would be impossible for many individuals on the spectrum to identify. Likewise, embarrassment for many individuals would be impossible to label, but stealing food is a commonly noted behavior and can be another means to come at this criteria. <sup>82</sup>

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**Table 1: Transforming *DSM* Language into Applicable Criteria for Autism**

***DSM-5* Subjective Criteria**

Eating more rapidly than is normal  
 Eating until uncomfortably full  
 Eating when not hungry or when full  
 Feelings of disgust, depression or guilt post-consumption  
 Eating alone due to embarrassment

**Altered Objective Criteria to Address Autism**

Eating rapidly  
 Eating whenever food is available  
 Eating too much  
 Cannot be adjusted  
 Stealing food

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Though Cognitive Behavior Therapy has found widespread acceptance for treatment of BED within the general public, it has only been used with the most highly functioning cohort on the autism spectrum. Even here, subjects were found to have difficulty in grasping cognitive restructuring, and organizing to various sections. Doubts and concerns were also raised regarding maintenance of behavior changes and generalizing abilities.<sup>83</sup>

**A Challenge for ED Professionals**

This broad view of disordered eating on the autism spectrum makes clear that these behaviors are widely manifested and require significant resources in terms of staff time and attention. Despite this, clinical understanding in terms of assessment and treatment remains limited. Disordered eating on the autism spectrum is clearly a new horizon for ED professionals, who have the skills and knowledge to make a tremendous contribution to this at-risk population.

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## From Across the Desk: Two Disorders in Search of an Official Definition

In this issue, we turn to two eating disorders still being defined as research continues: avoidant-restrictive food

intake disorder (ARFID) and Autism Spectrum Disorder, or ASD. As Janice Goldschmidt points out in our lead article, **A Broad View: Disordered Eating on the Autism Spectrum**, for too long attention has focused on children with autism, and the adult autism cohort has been neglected. This has prevented a complete understanding of the health-related patterns of ASD (including eating disorders) during the adult years. The article helps raise awareness of four distinct categories of disordered eating on the autism spectrum. And, in **ARFID: ED or Feeding Disorder?** Florida State University psychologists suggest viewing ARFID as both an ED **and** a feeding disorder, and suggest the distinction depends on the individual clinical presentation.

Finally, at the recent iaedp Symposium in Orlando, Dr. Anthony Orsini turned to an often-difficult area for those who treat eating disorders. **When You Have to Break Bad News** reports on an innovative program Dr. Orsini developed to train health care professionals to communicate more directly and humanely when treatment is not working and patient prognosis may be poor.

- MKS

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## UPDATE: Cardiac Abnormalities among Young Males with AN

Anorexia nervosa affects the heart by decreasing its mass and function. According to a recent report at the International Conference on Eating Disorders in Boston, young men with anorexia nervosa-restrictive subtype (ANR) have abnormal decreases in left ventricular cardiac mass, with changes in diastolic filling but without statistically significant changes in left ventricular function. Antonio Bano-Rodrigo, MD, PhD, and researchers at Universitario Nino Jesus, Madrid, and the National Autonomous University of Mexico, Mexico City, performed echocardiographic studies in 40 male patients diagnosed with ANR and a control group of 40 healthy adolescent males. Both study groups were from 9 to 20 years of age.

Dr. Bano-Rodrigo reported that males with ANR had body mass indexes (BMI) below  $19 \hat{\pm} 16.1.7 \text{ kg/m}^2$  (mean:  $16 \hat{\pm} 1.7 \text{ kg/m}^2$ ), while the mean BMI for the control group was  $20.8 \hat{\pm} 2.3 \text{ kg/m}^2$ . M-mode and color-Doppler-echocardiography were performed for all subjects. Mitral E and A inflow waves and also E/A ratio were analyzed for all patients, and left ventricular function was calculated for each. Diastolic E and A waves were abnormally low, a statistically significant finding, with increased E/A ratio compared to controls. Meanwhile left ventricular function was normal in both groups. The findings were similar to those seen in with ANR. The authors recommend following up all patients with these abnormalities to determine the severity of the changes in the cardiovascular system.

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## ARFID: ED or Feeding Disorder?

### *Untangling the overlap between the two disorders.*

Avoidant-restrictive food intake disorder (ARFID) is listed as a current diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5)*. Drs. Grace A Kennedy, Madeline R. Wick, and Pamela K. Keel, from Florida State University recently reviewed the medical literature from the last 3 years to compare ARFID's similarities to and differences from feeding disorders and eating disorders (*F1000Research* 2018, 7(F1000 Faculty Rev) doi:10.12668/f1000research.13110).

The authors explored the general disagreement about how the disorder should be categorized: some propose that ARFID be viewed as an eating disorder; however, others suggest that ARFID is actually a feeding disorder better grouped in the same broad category as pica and rumination disorder. Until recently, ARFID has been grouped in that broad category. (See also the lead article, "**A Broad View: Disordered Eating on the Autism Spectrum**".)

### **A feeding disorder?**

Using its official definition, ARFID can be diagnosed only when weight or shape concerns are absent. There is also the matter of nasogastric feeding in ARFID vs. AN or BN: children with ARFID are more likely to accept the use of nasogastric feeding than are patients with eating disorders. Young patients with ARFID also have less anxiety about taking in calories and much more fear of choking. Treatment patterns differ: children with ARFID are younger when they begin treatment, and are less likely to be self-referred for treatment compared with children with AN or BN.

### **An eating disorder?**

A case could also be made for ARFID being an eating disorder. Children with ARFID typically are at low weight, and as such are thought to require a multidisciplinary team. Like children and teens with AN, those with ARFID have strict food rules about what they can and cannot eat. Many aspects of treatment are similar and some reviews of treatment delivered show little difference, though whether this represents treatment patterns as they currently exist or the treatment needs of people with AN or ARFID is not fully clear.

Crossover occurs. In one study, 12% of patients with ARFID transitioned to a diagnosis of AN (*Int J Eat Disord*. 2014;47:495). The authors note specific similarities to non-fat-phobic AN but point out that children with ARFID want to gain weight rather than to lose it. There is also a gender difference, with a greater percentage of boys than girls with ARFID, in contrast to patients with AN or BN.

### **Taking a new view**

Ultimately, the authors suggest viewing ARFID as both an ED **and** a feeding disorder. ARFID may in fact "represent the

missing link between these differing types of disorders,” according to Dr. Kennedy and colleagues.

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## When You Have to Break Bad News

### *A hands-on program helps clinicians avoid being a 'Google Doc.'*

A bad experience with an uncaring or distracted clinician can be nearly as harmful to patients and their families as a dire prognosis, according to Anthony J. Orsini, DO, a neonatal and perinatal physician from Orlando, FL. Dr. Orsini is the creator of the *Breaking Bad News* (BBN) program, a training program that helps healthcare professionals improve compassionate communication with patients and their families. Dr. Orsini was a guest speaker at the recent Iaedp symposium in Orlando, FL.

Dr. Orsini explained that only about 10% of physicians have any formal training in dealing with delivering bad news to families, and most feel unprepared for and even fearful of this challenge. Part of the hesitation and fear involves anxiety about making mistakes or being misunderstood. He noted that police officers actually have more training than doctors about how to compassionately communicate with families when a loved one has a crisis, and the prognosis is poor.

Dr. Orsini developed the BBN course to help change this. In the program, healthcare professionals participate in improvisational training sessions with professional actors. The sessions are videotaped and watched remotely by a panel of trained physicians and non-medical instructors. The participants then watch the videotapes of their sessions with the physicians and instructors. Over the past 5 years, more than 600 residents and physicians and practitioners in many specialties have been trained; this year, 120 healthcare professionals in 5 states are scheduled for BBN training.

### **Changing a long-time culture of neutrality**

Dr. Orsini noted that from the turn of the last century and until recent times, clinicians have been taught to be neutral or detached when dealing with families in crisis. From the original model of doctors as comforters, the modern direction has been to be more detached and scientific. There are many reasons for this, including a lack of teachers and role models, and mostly, a lack of training in delivering bad news. A lack of compassionate communication then leads to mixed messages. Dr. Orsini pointed out that just as W. C. Fields said, “It’s all in the delivery.”

Dr. Orsini also advised the audience members to avoid being what he called a “Google Doc,” or a clinician who is excellent at delivering information only. The meeting with family and patients is not all about providing information, he said, but instead is about forging a trusting relationship with the health care team, including doctors, nurses, and nurse practitioners. Not doing so can harm the patient and family, lead to anger, or even to a lawsuit, he added.

### **Better ways to communicate bad news**

Dr. Orsini also gave a number of tips about better communication in crisis situations. Unlike previous years when the emphasis was on science and new medical techniques, today’s patient demands a relationship with the clinician, he said. When you must deliver bad news or a poor prognosis, the clinician needs to position herself or himself for success from the moment he or she walks into the room, he added. In what he calls the “bracing moment,” Dr. Orsini offered advice about starting a difficult conversation. One way to accomplish this in a compassionate way is to begin the conversation with a review of the situation so far, establishing what the family and patient understand. One suggested way to start the conversation is to say, “Tell me your understanding of what is going on,” Dr. Orsini said. He advised the audience to work on their observation skills, remembering that they are being observed as well. Our brains make 300,000 to 1 million observations per second, but the brain can’t make 2 analyses at a time, he said. Seventy percent of all language is nonverbal, he added.

### **Clinicians’ body language matters**

Body language is a large part of the process, he said, and even the way a clinician takes a seat in the conference room can be important. It helps to think of the meeting as a “chat” with family members, and not to assume a pose or posture. Two helpful actions that can make a big difference are to keep the hands above the table and to be seated

close enough to the family members to reach out a comforting hand when needed. Crossed legs and crossed arms can “push away” family members, so an open and trusting stance is much better, he said. Verbal and nonverbal communications should match; when they do not, confusion, anger, and mistrust can occur.

Dr. Orsini also advised avoiding “blindsiding” patients with the bad news, and instead to gradually break the news, using terms such as “I am concerned, or “I am worried that you might also be concerned,” and then to compassionately communicate a combination of knowledge and concern about what has happened. Sometimes silence can be a powerful tool, too, he said, particularly when the family members may be stunned and silent at the bad news. A rabbi once told him that in such situations it is best to “just say you are sorry and shut up,” he said.

Finally, Dr. Orsini stressed the importance of being specific about what is next for the patient and family, and to manage the conversation. The goal here is to help the family avoid feeling abandoned, he said. Some ways to do this include offering to meet with them at a later time, to follow up with your business card or telephone number, and to assure them that you are going to help them get through this rough stage.

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## Health Care Costs for Treating Binge Eating Disorder

### *Delayed diagnosis led to upward-spiraling costs in a Swedish study.*

Binge eating disorder (BED), the most common eating disorder, was recognized as a formal diagnosis in the *DSM-5*. The lifetime prevalence of BED is 3.5% among women and 2.0% among men. BED is associated with obesity, type 2 diabetes, and suicide.

A new controlled study has evaluated health care use and costs among individuals with BED compared to controls. The authors hypothesized that persons with BED would have significantly higher health care costs in the years before the disorder is detected. According to the authors, the increased use and costs involved in treatment for patients with BED can be traced to often-missed clues to the diagnosis, leading to lengthy delays in treatment.

Dr. Hunna J. Watson of the University of North Carolina, Chapel Hill, and her colleagues studied a large population-based sample of patients drawn from Swedish national registry information. Their study used a case-control design and a nationwide registry of all individuals diagnosed with BED at eating disorder clinics in Sweden between 2005 and 2009. The study group included 319 BED patients (average age: 22 years) matched with 10 controls for each patient (n=3190), matched by gender, age, and location of birth (*J Psychosomat Res.* 2018; 108:47). All study participants were born between 1979 and 1993. Inpatient admissions and hospital-based outpatient visits came from the *Swedish National Patient Register*, and use and spending for prescription medications were obtained from the *Swedish Prescribed Drug Register*, which has more than 99% of data for all medications prescribed and dispensed in Sweden since July 1, 2005. A particular strength of this study was that the authors had the capacity to look back 8 years at costs prior to the BED diagnosis.

### **Increased costs were the norm**

The results showed that inpatient costs, outpatient costs, and medication costs for individuals with BED were higher than for individuals without a BED diagnosis. For several years prior to their diagnosis, this increase was higher for BED participants as well. Of particular importance, while psychiatric treatment costs were elevated in the years following a BED diagnosis, medical treatment costs actually diminished in the years after the diagnosis. This suggests not only that BED is associated with medical complications, but also that identifying and treating BED may help to ameliorate medical costs, presumably by improving medical comorbidities

One limitation of this study is that it used a third-party payer perspective. That is, costs were calculated from the perspective of a national health service or an insurance company. As such, costs incurred by the individual (travel costs for treatment, costs of food related to binge eating, etc.) were not included. On the one hand, this means that there may have been further elevated costs in the time leading up to diagnosis, and, potentially, with successful treatment,

further diminishment in subsequent treatment costs. Therefore, the results may understate the potential benefits of diagnosing and treating BED. On the other hand, the use of a third-party payer perspective may also be a strength of the study. The reason for this is that the critical decisions related to coverage of treatment for BED are made by third party payers. Thus, in a practical way, the third party payer perspective is a particularly important, and, one hopes, a particularly impactful one.

Improving detection of BED earlier and treating symptoms as they emerge may improve health outcomes and reduce the cost of care as well, according to the authors.

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## When Teens Exercise Too Much, Too Often

### *Swedish researchers uncover links between excessive exercise and ED risk.*

Like a balance scale, exercise has many benefits, but when it becomes compulsive and is linked to concerns about weight or physical appearance, the balance can tip to increased risk for developing an eating disorder.

How does one distinguish unhealthy from healthy exercise? A team of Swedish psychologists studied variables related to compulsive exercise among healthy adolescent girls and boys, using the *Structural Analysis of Social Behavior* (SASB) and the *Eating Disorders Examination Questionnaire* (EDE-Q). They noted, however, that in a busy primary care practice or school health service setting, these measures are often too time-consuming to be practical. Instead, there is a need for an alternative, briefer, approach to assess compulsive exercise and risk of eating disorders. At the conclusion of their study, the Swedish team developed a simplified set of exercise-related questions to be used in primary care and school health settings (*Table 1*).

Dr. Emma ForsÃ©n Mantilla and colleagues at the Karolinska Institute and Stockholm Health Care Services, Stockholm, Sweden, also examined gender-specific items to generate the best possible questions for boys and girls (*Int J Environ Res Public Health*.2018; 15:797), since prior work has shown gender differences in exercise patterns. The authors sought to learn more about the ways that compulsive exercise affects boys and girls. One previous study showed that for both genders being highly self-critical was common among boys and girls, but stronger among girls than among boys (*Eat Behav*. 2014; 15:125). In another study, perfectionism imposed by others seemed to be important to boys but not to girls (*Int J Eat Disord*. 2011; 44:655).

The researchers aimed to identify effective *EDE-Q* items for each gender that relate to compulsive exercise and to give information about their psychological importance. Since self-criticism is not included in the *EDE-Q*, but seems central to compulsive exercise, the SASB questionnaire was also used.

The subjects were recruited from schools in a Swedish community. The final group included 482 teens, 244 boys and 238 girls, all between 12 and 15 years of age. While body mass index (BMI; kg/m<sup>2</sup>) was not recorded, the normal BMI for this age group in Sweden ranges between 17.6 and 18.9 kg/m<sup>2</sup> for boys and 17.9 to 19.1 kg/m<sup>2</sup> for girls.

### Characteristics of the group

Compulsive exercise was found in 135 individuals (28%), and was more common among the girls than among the boys (35% vs. 21%, respectively). Compulsive exercise was significantly associated with eating disorders symptoms, and girls reported more symptoms than did boys. Adolescents who reported exercising excessively also had, on average, 3 times higher levels of eating disorder symptoms than did teens who did not report excessive exercise. Among both genders, questionnaire items related to concerns about body weight and dietary restraint were related to use of compulsive exercise.

### Concerns differed by gender

One difference between the genders was that while fear of weight gain was important to girls, weight dissatisfaction, which includes issues about shape and muscularity and dissatisfaction with slimness, was more important to the boys.

Boys and girls shared a desire to lose weight, use of dietary restraint, dissatisfaction with weight and shape, and discomfort exposing one's body.

At the end of their study, the authors had developed efficient questions for examining suspected excessive exercise among teenage girls and boys (see *Table 1*). An initial question is used for both boys and girls, and then more gender-specific questions follow.

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**Table 1. Questions for Teens Suspected of Using Compulsive Exercise**

**GIRLS**

**BOYS**

**Probing CE (both genders):** Do you exercise a lot? How does it make you feel if you can't exercise just like you want to? Do you exercise sometimes even when you are sick or hurt?

**Theme 1:**

Are you very fearful of gaining weight or getting fat?  
What would becoming heavier mean to you?

How do you feel about your weight?  
Would you like to be slimmer?

**Theme 2:**

Have you tried to eat less to affect your weight or shape? Do you watch what you eat? Do you try to eat less or not at all sometimes?

Have you forced yourself not to eat to affect your shape or weight? Have you gone fasting for 8 hours or more?

**Theme 3:**

Would you say you are often unsure of yourself? Do you feel that other people can do things better than you, or are better than you, period?

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## **BOOK REVIEW**

### ***Understanding Teen Eating Disorders: Warning Signs, Treatment Options, and Stories of Courage***

(Cris Haltom, Cathie Simpson, and Mary Tantillo. Taylor & Francis, 2018, paperback, \$29.95)

A great deal of information is now available about the treatment of children and adolescents with eating disorders, but most of it is directed at eating disorder professionals. With this new book, Cris Haltom, Cathie Simpson, and Mary Tantillo provide a resource families and friends of teens and tweens with eating disorders to help better understand these conditions, and how and why to get help. These authors have produced an excellent resource for families.

This book is organized around seven cases, each discussed in extensive narrative detail. In reviewing these cases, key issues related to causation and maintenance of disordered eating, risk factors, medical complications, and treatment approaches are covered. The cases represent a variety of different diagnoses, including anorexia nervosa, bulimia nervosa, binge eating disorder, and other specified feeding and eating disorder (OSFED). They provide broad and deep coverage of the topic matter at hand. One of the many strengths of the book is that the diversity of cases described will likely result in at least one case description sounding sufficiently familiar and thus resonating strongly with the parents of a teen with an eating disorder.

A final chapter provides information on prevention of eating disorders. This chapter is well done and thoughtful, and is

an interesting inclusion in the book. Most readers of *Understanding Teen Eating Disorders* will likely be at a point where their interest in prevention of eating disorders may be rather limited; they will be, in that moment, focused on helping their child obtain treatment. Still, it may provide useful information for them in the future, and may be information of interest to their family members and friends.

This book will provide a very useful reference for families who have a teen or tween with disordered eating.

- SC

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## Reducing PRN Medications for AN Patients

### *Changing a long-time practice that may increase morbidity and polypharmacy.*

PRN (*pro re nata*, Latin for "as the circumstance arises") medications are given when needed, as opposed to medication given on a regular schedule. According to a group of clinicians led by Elizabeth Tyrrell-Bunge of Bethlem Royal Hospital, South London, and the Maudsley NHS Foundation Trust, London, psychotropic PRNs are given to 20% to 50% of patients on acute psychiatric wards. Often this practice is based on "clinical experience and habit" rather than on high-quality evidence, according to the authors.

#### **A test of use with a group of AN patients**

Dr. Tyrrell-Bunge and colleagues decided to investigate the use of PRN medications for a week at their own hospital, an 18-bed eating disorders inpatient unit for adult female patients with anorexia nervosa (*Psychiatric Danubina*. 2018; 30:107). The authors learned that the most commonly prescribed PRN medications were promethazine, paracetamol (acetaminophen), and lactulose. Over the week, the total dosage of each agent was: 1810 mg of promethazine, 23 g of paracetamol, and 285 mL of lactulose.

The authors then instituted a three-level intervention involving education for the nursing staff on PRN use and education for patients, and developed an information pamphlet for both patients and staff.

#### **Did the intervention work?**

Overall, there was a decrease in use of the two main PRN medications. Lactulose intake was reduced by 70%, offset by more use of prune juice, which had been mentioned as an alternative to the laxative in the educational sessions. The use of promethazine also was reduced by 34%. Paracetamol use was unchanged. The authors suggested that one more step could be a monthly screening of medication charts (*Psychiatr Danub*.2017; 29:568). This makes good sense, as use of PRNs seems to fluctuate.

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## Questions and Answers - Kleptomania

**Q.**Recently a colleague mentioned that kleptomania, or compulsive stealing, has been associated with having an eating disorder. Is this correct? (*W.D., Charlottesville, SC*)

**A.**Yes, this is true. Theft and eating disorders "especially bulimia nervosa" have been linked in the past. This is true for theft of food, perhaps due to the cost of BN symptoms (Mitchell, *Comp Psychiatry*1992; 32:342). However, kleptomania and eating disorders have been linked, too. Kleptomania, or repetitive theft with uncontrollable urges to steal, is relatively uncommon but not well appreciated and affects about 11% of people in the U.S., according to one large epidemiologic study. A recent article describes the connection between stealing and having an eating disorder.

Jon E. Grant, MD, and Samuel R. Chamberlain, MD, PhD, recently examined candidates for kleptomania severity as defined in the *DSM-5*. They tied frequency of urges to steal and reporting feeling a positive reaction from the act of stealing to anorexia nervosa, bulimia nervosa, and obsessive-compulsive disorder (*Ann Clin Psychiatry*.2018; 30:97).

The authors found that worsening kleptomania symptoms were associated with more frequent stealing urges and more excitement from stealing. In terms of diagnosis, co-occurrence with OCD, AN, and BN were tied to increased kleptomania severity.

This fits with prior work. In 2008, Dr. M. Takemura and colleagues started a registration system for patients suffering from habitual theft, which recorded 1430 cases between 2008 and 2016 (*Brain Nerve*. 2016; 68:1177; article in Japanese). The Japanese researchers found that the most common co-occurring disorder was BN.

The authors concluded that aspects of reward and compulsivity are both strongly associated with the severity of the disorder, and should be addressed in treatment.

- SC

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## Also in This Issue

### May/June 2018 Volume 29, Number 3

- **Breaking Bad News to Patients and Parents**
- **Health Care Costs for Treating Binge Eating Disorder**
- **When Teens Exercise Too Much, Too Often**
- **Reducing PRN Medications for AN Patients**
- **Review: Understanding Teen Eating Disorders: Warning Signs, Treatment Options, and Stories of Courage**
- **Q&A: Kleptomania Cardiac Abnormalities among Young Males with AN**

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## Coming in the July/August Issue

### In the Next Issue

- **How Childhood and Adult Emotional Abuse Affects Eating Disorders**
- **Medical Complications of Eating Disorders in Children**
- **Sleep: A Clinical Marker in Anorexia and Bulimia Nervosa?**
- **Is There a Relationship among BMI, Binge Eating Disorder, and Suicide Aging Anxiety and Disordered Eating**
- **And much more...**

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