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# **Eating Disorders Review**

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**Scott Crow, MD, Editor-in-Chief**

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## **Day Programs and Skills Training for Parents Enhance Outcome for Adolescents with AN**

### ***Alternative outpatient programs aid remission.***

After medical stabilization in-hospital treatment is completed, teenaged ED patients in poor physical condition or at risk of suicidal behavior can continue to be treated in a safe environment with inpatient care. However, inpatient care is expensive, and can detach patients from family, friends, school and work. Different forms of outpatient programs, such as ED daycare or partial hospitalization, can mitigate these drawbacks. Another option targets skills intervention training for parents of teens with AN.

#### **Daycare: Improving skills for daily life**

For teens with eating disorders, daycare programs help promote independence, support internalization of skills gained during inpatient therapy, and encourage use of these skills in daily life, according to a group of Israeli clinical researchers. The researchers note that daycare programs enable teens to continue outpatient treatment while comfortably continuing their routines at school and maintaining family and social contacts as well.

The pediatric eating disorders treatment service at Safra Children's Hospital, Sheba Medical Center, Tel Hashomer, Israel, offers inpatient, daycare, and ambulatory programs for children and teens between the ages of 6 and 18 years with diverse types of EDs. According to Dr. Liron Litmanovich-Cohen and colleagues at Sheba Medical Center, the center acts as a "wraparound" service, where patients can move from one facility to the other, depending on their current conditions and needs (*Front Psychiatry*. 2021; 12: article 648842). The Israeli daycare facility is located in the hospital near the inpatient department and operates 3 days a week during the afternoons, so students can continue to attend school in the mornings. Participating teens eat two supervised meals daily at the center, one in the daycare dining room and one in the hospital cafeteria. The cafeteria meals are included to help the teens readjust to normal meal settings, as in a school cafeteria or in a restaurant, for example.

The authors conducted a study from 2013 to 2017 for female inpatients older than 15 who had AN, BN, or eating disorders not otherwise specified (EDNOS). To qualify as being in remission, patients had to abstain from bingeing, purging, or restricting eating for at least 8 consecutive weeks before being assessed. The researchers also evaluated and rated patients for social functioning with family and/or their peers. Social functioning was measured by assessing the extent to which the patients' motivation to renew old friendships or to create new ones, continuing meaningful and fulfilling relationships with family and peers, or being involved in a romantic relationship.

#### **Was daycare effective?**

Almost half of the teens completing treatment in the post-hospitalization daycare center were considered to be in remission at 1-year follow-up, compared to fewer than 25% of those in the non-treatment group, a significant difference. About half of both groups were considered to have good social functioning at 1-

year follow-up. No between-group differences were reported in ED symptoms or for body mass index (BMI, mg/kg<sup>2</sup>); 86% of individuals completing the daycare program reported the return of regular menstruation at follow-up, compared with 75% of those who did not attend or complete the daycare program (this was not considered a significant between-group difference).

Interestingly, all participants in the study were treated with psychotropic medications upon discharge from inpatient treatment, with their therapists sanctioning the continued use of psychotherapy and pharmacotherapy. More than two-thirds of patients in both groups were still using pharmacotherapy at follow-up; most medications were selective serotonin reuptake inhibitors (SSRIs). All patients remaining in the daycare program longer than 5 months continued with psychotherapy, compared to two-thirds of those who did not remain in the program. Continuing psychotherapy might have been especially important for patients in remission who still demonstrated maladaptive preoccupation with eating at follow-up. The authors suggest this was important because having ED- and body-image-related concerns after initial remission can be associated with a greater risk of relapse later. The authors suggest that future research be conducted in larger populations and for longer periods. They noted that cooperation with parents is also a critical topic that should be addressed in future studies.

BMI measurements were within normal ranges at follow-up, whether the teens completed daycare treatment or not. Thus, adolescent teenage females with EDs can maintain normal-range BMIs from discharge from inpatient care to 1-year follow-up even if they do not complete daycare treatment. Regardless, completing a post-hospitalization daycare program may enhance the 1-year follow-up outcome of former ED inpatients, say Dr. Litmanovich-Cohen and colleagues.

### **Skills Training For Parents**

While skills training for caregivers of patients with AN has been effective for improving caregiver skills, the impact on patients, especially adolescents, is still unknown, according to Dr. Julia Philipp and colleagues at the Medical University of Vienna (*Int J Environ Res Public Health*. 2021;18:4656). Parental distress reduction interventions based on the model developed by Treasure et al. (*Clin Med*. 2020; 9:630) can reduce parental burden and highly expressed emotion and distress, and can improve caregiver skills among parents. Online interventions and in-person workshops were equally effective.

Dr. Philipp and colleagues designed a study to assess the impact of one such intervention, the Supporting Carers of Children and Adolescents with Eating Disorders in Austria, or SUCCEAT. This is a parental skills training program based on the cognitive interpersonal model of maintaining factors for EDs, and is delivered either in workshops or online. In their study, caregivers of adolescent patients with AN or atypical AN were allocated to the SUCCEAT workshops or to online interventions. The patients, all between 10 and 19 years of age who had AN or atypical AN and their main caregivers (1 parent for each child), were eligible to participate. Children and teens with severe comorbidities and caregivers with severe morbidities were excluded from the study.

### **The workshop group**

The goal of the SUCCEAT intervention is to alleviate caregivers' distress and burden, to enable them to help support their children with AN, and to achieve long-term changes for a healing atmosphere within their families through reduced high expressed emotion (HEE), and improved communication skills.

The intervention provides skills to the parents to improve communication in the family and to enhance the child or teen's motivation to change. Both the online and workshop versions of SUCCEAT are structured interventions, involving working with caregivers of a group of about 8 children and adolescents during the course of 8 weekly sessions. The 2-hour sessions were held once a week at the Medical University of Vienna, where the children and adolescents also received treatment as usual. Parents were given a detailed manual and a DVD of best-practice examples of ways to better communicate with their children. They also received weekly information handouts.

The online program began with a personal welcome for caregivers, so they could get to know one another and the program coaches. Parents in the workshop program also received the DVD and were given access to the online platform, where they could find the same intervention materials as the workshop group. The coaches responded to caregivers' questions and provided feedback to their progress once a weekly via the online platform.

Children and teens completed a number of questionnaires at baseline, after the intervention (after 3 months, at the end of the intervention, and then at 12 months). The questionnaires included the *Eating Disorder Examination* (EDE), the *Eating Disorder Inventory-2* (EDI-2), the *Anorexia Nervosa States of Change Questionnaire* (ANSCQ), the *Youth Self-Report* (YSR), and the *Health-related Quality of Life Questionnaire for Children and Adolescents* (KINDL).

### **Improvement was seen online and in workshops**

After the intervention, the authors found that all outcome measures, including BMI percentile, ED psychopathology, behavioral dimensions of EDs, motivation to change, motivational and behavioral problems, and quality of life improved among both the workshop and online participants. In fact, there was no difference in the outcome variables between the workshop and online groups. Patients whose parents participated in the online group showed similar improvement as did patients with parents who participated in the face-to-face workshops. The positive effects were not limited to ED psychopathology. Motivation to change, general psychopathology, and quality of life also improved during the study. The children and teens reported increased quality of life, shown in emotional, physical, and social well-being, self-esteem, and everyday functioning in school. The authors noted that theirs is the first study of specialized skills training for parents of children and adolescents that showed a broad number of benefits for parents, including motivation to change, general psychopathology, and improved quality of life.

When remission rates were evaluated at 12-month follow-up, the authors found that the percentage of patients with full and partial remissions was slightly higher in the face-to-face workshop group compared to the online group. Approximately 72% of participants from the workshop group had full or partial remission at 12 months, while the online group had 87% full or partial remission at 12 months; the difference was not significant.

The authors concluded that adolescent patients with AN might benefit from intervention for their caregivers, in addition to treatment as usual, especially over the long term. Their results strongly "support the importance of involving the family in the treatment of adolescents with AN by offering SUCCEAT training," according to the authors. They also pointed out that, particularly in this time of COVID restrictions, an online program like SUCCEAT that integrates online support for caregivers of AN patients can be an effective add-on to treatment as usual.

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## **From Across the Desk**

As the global COVID-19 epidemic continues, the Internet has proved to be a boon to many patients, including those with eating disorders. The number of online programs aimed at improving access to healthcare is rapidly expanding, and these programs are helping clinicians and patients overcome pandemic and other barriers. In this issue, we include a study by Dr. Julia Philipp and her colleagues in Vienna. The Austrian researchers examined two groups of parents receiving caregiver skills training in face-to-face workshops or online. There was no difference in outcome between the workshop and online groups.

The number of online tools is also increasing. Two online cognitive intervention assessment tools for parents of AN patients, CogTrack™, and SUCCEAT, measure attention, reasoning, information-processing, and working and episodic memory. The goal of the SUCCEAT intervention is to alleviate caregivers'

distress and burden, to enable them to help support their children with AN by helping them improve communication skills, and to achieve long-term changes for a healing atmosphere within their families.

The Internet offers increasingly helpful ways to enable ED patients and clinicians overcome distance, geography, and pandemic barriers to care.

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## **Update: Another Effect of the Pandemic: Higher Rates of Hospitalizations for People with EDs**

The University of Michigan recently reported that teens with eating disorders were twice as likely to be hospitalized as teens without EDs. For example, in the first 12 months of the COVID-19 outbreak, 125 eating disorders-related hospitalizations of young persons with EDs aged 10 to 23 were reported by the University of Michigan health system. In comparison, 56 teens without EDs were hospitalized within the same time. The highest rates of admissions occurred between 9 and 12 months after the start of the pandemic, and rates were still climbing when the study ended in March this year.

Author Dr. Alana Otto, an adolescent medicine specialist at the University of Michigan C.S. Mott Children's Hospital, noted that the higher rate of admissions emphasized "how profoundly the pandemic has affected young people," due to school closures, canceled extracurricular activities, and, importantly, the effects of social isolation. She added, "For adolescents with eating disorders and those at risk for eating disorders, these significant disruptions may have worsened or triggered symptoms."

The Michigan study may represent only a fraction of the young persons with EDs affected by the pandemic because only young people with severe illness from eating disorders were included in the study. Dr. Otto underscored the importance of stressful events, which may lead to development of symptoms in a young person already at risk for an ED, adding that the absence of routine, disruptions of daily activities, and a sense of loss of control were all important contributing factors. She added, "When everything is out of control, the one thing they feel they can control is their eating."

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## **Malnutrition and Risk of Severe COVID 19 Disease**

### ***Another good reason for ED patients to consider vaccination.***

It is clear that a variety of medical problems put people infected with the COVID-19 virus at risk for more severe illness. Recent findings show malnutrition increases risk of severe COVID-19, and this may have high relevance for those with current or prior eating disorders (*Nature Open Access* 22 July 2021).

This study looked at about 103,000 people (8604 children/adolescents and 94,495 adults) hospitalized for COVID-19. A large diagnostic database was used to see if participants had received a diagnosis of malnutrition during the preceding 5 years. For children diagnosed with malnutrition, there was an elevated risk for severe COVID-19, and the relationship was much stronger among adults. The cause of the malnutrition was not recorded in the database. This is a limitation, but it is extremely likely that a variety of causes were present as well, and it seems likely that at least some adults and children may have had an ED.

Certainly, this raises the possibility that those with EDs are at higher than normal risk for serious COVID disease. Moreover, it points out the importance of advocating vigorously for those with EDs to become

# ARFID and AN: Identifying Similarities and Differences

## *A small study seeks to better define ARFID and AN.*

Patients with avoidant-restrictive food intake disorder (ARFID) share one major component with those with restrictive-type anorexia nervosa. However, beyond this, the two eating disorders have very different characteristics. Patients with ARFID have poorer than normal appetite, sensory sensitivities, and fear of adverse consequences. Eating patterns also differ markedly between persons with AN and those with ARFID. It is somewhat unclear whether those with ARFID are at risk for medical complications similar to seen with AN. And, unlike AN, body image concerns play a very minor role in ARFID.

A team led by Dr. Anna Aulinas of Massachusetts General Hospital, Boston, recently conducted a small exploratory cross-sectional study to compare medical complications among low-weight females with ARFID (n=20) with complications seen in females with AN (n=42) and healthy controls with no history of an eating disorder (n=49) (*Int J Eat Disord.* 2021; 53:631). Little data are available about co-morbidities in ARFID, and the authors note that prior studies have not included healthy controls, and have included ARFID patients with a wide variety of weights, which might tend to confound assessment of medical complications seen with low weight. The authors hypothesized that females with ARFID, like those with AN, may have even more medical comorbidities and specific endocrine changes than expected, compared to healthy controls.

Most participants were receiving outpatient therapy for ARFID or AN. The authors analyzed each participant's medical history and other factors, including age, race, gastrointestinal data, family history of eating disorders, and psychiatric history. After an overnight fast, a thorough history was taken, along with a physical examination, and blood was drawn for leptin, IGF-1, and thyroid axis and cortisol levels. Body mass index (BMI; kg/m<sup>2</sup>) was also calculated.

### **What factors differed between ARFID and AN?**

ARFID patients were younger and had an earlier onset of restrictive eating (mean: 8.7 years) than did patients with AN (mean: 13.9 years). Compared to healthy controls, those with ARFID or AN more often had a family history of psychiatric disorders, a personal history of depression and anxiety, and use of antidepressants and anxiolytics. A personal history of obsessive-compulsive disorder was more common in those with AN than in the healthy controls and or in the ARFID patients. Use of antihistamines was higher among those with ARFID than those with AN.

Several differences also were seen in laboratory results. Leptin levels were lower in the ARFID and AN patients than among the healthy controls. Mean IGF-1z scores were lower in the women with ARFID than among healthy controls, but the difference was not significant among women with AN. Those with diagnoses of ARFID had higher total T3 levels and a lower total T4 to T3 ratio than did the women with AN and the healthy controls. These hormonal differences remained significant even after adjusting for age. Those in the ARFID and AN groups had more gastrointestinal symptoms, perhaps as a result of undernutrition. Low blood pressure was reported only among AN patients. This group also had a higher prevalence of bradycardia and lower heart rates than those with ARFID. The authors surmise that this reflects the acute weight loss occurring in AN. Patients in the AN and ARFID groups had greater food and drug allergies than did healthy controls. The authors' data suggest that immunologic mechanisms may be involved in the development and maintenance of ARFID, and that the presence of atopy in ARFID may point to undiagnosed immune-mediated disorders such as eosinophilic esophagitis.

### **Vigorous treatment recommended**

The authors noted that since medical comorbidities and endocrine factors overlap in persons with ARFID or AN, low-weight ARFID patients should be treated as vigorously as those with AN. Low blood pressure was reported only among AN patients.

There appeared to be more similarities than differences in medical issues for those with ARFID or AN. The results of this study suggest the importance of early case-finding for ARFID, just as for AN.

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## Measuring Cognitive Function in Adults with AN

### *In two areas, patients had better scores than healthy volunteers.*

Despite their serious illness, adult patients with long-term anorexia nervosa do not automatically lose core aspects of cognitive function. In fact, according to a team of German and Danish researchers, these patients may have increased concentration and accurate reasoning ability despite their illness.

Dr. Maria Seidel of the Karolinska Institute, Stockholm, and others report that it is possible to compare cognitive function among AN patients and healthy volunteers with the use of a newer online cognitive assessment system, CogTrack.™ This online tool measures attention, reasoning, information-processing, and working and episodic memory (*Nutrients*. 2021; 13:859). Between January 2016 and December 2017, Dr. Seidel and her team studied 26 adult AN patients (24 females; mean age: 29) and 36 healthy volunteers (30 females; mean age: 25) participating in the Danish Prospective Longitudinal all-comer inclusion study in Eating Disorders, or PROLED study. The PROLED study is an ongoing 10-year clinical naturalistic follow-up study. All patients were recruited through referrals to the Psychiatric Center in Ballerup, Denmark. The healthy volunteers, who were of normal weight, or with body mass index or BMIs >18.5 or < 25.0 mg/kg<sup>2</sup>, were recruited through public advertisements.

The patient group was at various stages of weight restoration and were either inpatients or were enrolled in intensive daycare treatment 4 days a week. A nutritionist planned their meals, aiming for a target weight gain of 1 kg/week. Sixteen patients were receiving psychotropic medications, including antidepressants and/or antipsychotic agents. Nineteen were diagnosed with one or more comorbid disorders, most commonly neuroses, stress-related psychoses, and somatoform disorders, mood disorders, and personality disorders. None was receiving regular psychotherapy, although some had infrequent, non-regular supportive dialogues with psychologists.

Both groups were assessed with a series of questionnaires, including *the Eating Disorder Examination (EDE)*, the *Major Depressive Inventory (MDI)*, the *Eating Disorder Examination-Questionnaire (EDE-Q)*, and the *Global Assessment of Functioning (GAF-F)*. The CogTrack system, as mentioned before, is an internet-based set of cognitive tests that examines major aspects of cognition, including attention, information processing, reasoning, and working and episodic memory. The 11 tasks in the system take about 20 minutes to complete. The tests assess such cognitive functions as immediate word recall, simple reaction time, and spatial working memory. All participants took the test using a study laptop in a quiet setting. As part of training, all study participants had two chances to perform the CogTrack tests before the baseline test was given.

### **Surprises for the authors**

The results were striking: those with AN performed better than healthy volunteers on the Attentional Intensity Index, which reflects the participant's intensity of concentration, and on the Grammatical Accuracy test, which reflects the ability to accurately reason whether a statement is true or not. After assessing participants at different time point during the study, the authors found no significant change in performance across time in the study.

The researchers were also surprised that the AN patients' performance was not correlated with body mass index (BMI) or with the duration of their illness. The authors could not detect deficits in the assessed domains between the study groups, particularly among the chronically and severely ill AN patients. Why was this? The team concluded that it might be linked to increased perfectionism and overachievement generally reported in the AN population. The Grammatical Reasoning Accuracy score reflects the ability to reason about statements referring to differing images. This is usually considered an ability linked to problem-solving, concentration, and working memory capacity. The authors speculated that this ability might reflect increased cognitive processes allocated to problem solving, which could be related to the increased rumination that is often found in AN patients, and to elevated cognitive control in AN patients or increased IQ, which might also better explain their performance despite their illness.

There were some limitations to the study. The sample size was small and only those with AN and BMIs 14 or greater were eligible for the study. Cognitive performance in individuals with BMIs <14, remain unclear.

Overall, the authors noted that their results suggest the potential benefits of behavioral interventions in early phases of treatment of AN. There seemed to be no evidence that such patients need nutritional rehabilitation to restore cognitive function (as measured by these tasks, at least), and that, in their words, "Computerized cognitive assessments have been shown to be a well-received tool for investigating cognition in AN patients."

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## Risks of Intermittent Fasting

### *The main concerns centered on people with EDs.*

Many, many methods designed to produce weight loss have come along, and one of the most recent is intermittent fasting, or IF. What this term exactly means seems to vary, but basically it involves extended periods of time throughout the day without eating and limited periods during which one can eat. There is some preliminary evidence that cardiovascular risk factors, such as glycemic control and inflammatory measures, may be improved by IF. Cuccolo and colleagues recently conducted a study examining potential eating disorders risks associated with IF (*Eat Disord.* 2021. June 30; 1; published before print).

The authors note that fasting itself is both a risk factor for as well as a symptom of an eating disorder, so there is ample reason to be concerned about its risks. Sixty-four people who endorsed IF completed an online survey that asked about their participation in IF. Participants also completed the *Eating Disorder Examination Questionnaire* (EDE-Q). The results were compared with those from published community samples.

### **EDE-Q scores were higher**

There were several important findings. First, *EDE-Q* scores were higher than those of community norms. Second, about 1 in 3 of the people who completed the questionnaire had scores above typically used clinical cutoffs. Third, most typical ED symptoms were reported more often in the IF sample than in the comparison community norm samples.

These findings clearly reinforce concerns about IF, although the authors correctly note that the cross-sectional design leaves the timing of the relationship unclear. It could be that IF brings on ED symptoms but, of course, it could also be that those who already have ED also engage in IF.

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## Studying Elements of Personality: A Search for Better

# Outcomes

## ***High treatment failure rates spur the search.***

Personality has been widely studied in those with both AN and BN, but the relationship between personality and the two eating disorders still isn't clear, according to a group of Italian researchers led by Dr. Laura Muzi at Sapienza University of Rome. She and her colleagues used a researcher-rated measure of personality traits as a way to correlate treatment outcome in those with AN and BN (*Eat Weight Disord-Studies on Anorexia, Bulimia and Obesity*. 2021 26:1195).

### **Early questions**

Could personality disorder factors assessed through an empirical approach predict overall ED symptom impairment at the group level? Could the clinical significance of ED symptomatic change at the individual level be predicted upon discharge from a psychodynamic oriented residential treatment program? To better answer questions such as these, Dr. Muzi and her colleagues designed a study using an empirically grounded clinician report and Q-sort procedure, the *Shedler-Westen Assessment Procedure-200* (SWAP). Of note, the SWAP-200 assesses personality by having a clinician rate a patient based on 200 descriptions of personality traits. Participant self-reports of personality traits was not included.

The researchers' study group included patients consecutively admitted to a specialized psychodynamic residential treatment center for eating disorders in Bologna (Italy) between December 2017 and November 2019. All participants were at least 18 years of age and had a *DSM-5* diagnosis of AN or BN, established at intake using the *Structured Clinical Interview for DSM-5* (SCID-5-CV). Twenty-six of the 142 patients declined to take part in the study. In the final study sample, 84 patients had AN, restricting subtype (AN-R), with an average BMI of 15.16. Fourteen met the criteria for AN-purging subtype, and had an average BMI of 16.82. The remaining patients, all with BN, had an average baseline BMI of 22.85.

Most patients reported a weekly average of 14 dietary restrictions, 6 compensatory behaviors, and 4 binge-eating episodes. A majority, 66.6%, had premorbid personality disorder, as reported on the SCID-5-CV. Nineteen had borderline personality disorder, 17 had obsessive-compulsive personality disorder, and 10 had avoidant personality disorder. Twenty-two patients also had a concurrent diagnosis of major depressive disorder, anxiety disorder, or obsessive-compulsive disorder.

### **A residential treatment program**

Once in the study, patients participated in a full-time non-hospital-based and multidisciplinary residential program and were treated for an average of 5 1/2 months. A multidisciplinary team met on a weekly basis to discuss individual cases, and patients could select 24-hour supervision to help them interrupt repetitive and pervasive ED behaviors. Each patient in the study also had individual psychotherapy once or twice a week, based on social, psychological, and nutritional factors. Other activities included nutritional rehabilitation and counseling, meal support, intervention focusing on affective and emotional experience, skills training, recreational and art therapy, and social cooking classes. The individual researchers administered a number of baseline questionnaires, including the *Clinical Diagnostic Interview* (CDI), the *SWAP-200*, the *Outcome Questionnaire-45.2* (OQ-45.2), and the *Eating Disorder Inventory-3* (EDI-3).

### **What did the study show?**

The *SWAP-200* scores showed positive associations between greater ED symptomatic impairment at discharge and paranoid, schizoid, and avoidant personality traits. Higher healthy personality functioning scores were related to lower ED symptom scores.



One interesting aspect of this work is that the treatment lasted for a relatively long time (a mean of 5.5 months). Also, personality traits were assessed by clinicians rather than by patient self-report. One can imagine this might have some limitations but perhaps also some advantages as well.

The authors had several suggestions of topics for future studies. For example, they felt that personality studies should measure the relationship between such variables as restrictive dieting and self-criticism and personality disorder features in greater depth. As previous studies have shown, a greater number of inappropriate compensatory behaviors per week negatively affect the likelihood of clinically significant or reliable symptomatic change. Earlier age of ED onset also has been shown to predict more severe symptoms and a longer duration of illness (*Eat Weight Disord.* 2017; 22:491).

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## Treatment-Resistant AN

### ***Those with binge-purge type AN had greater risk of resistance to being treated.***

There is still a real knowledge gap when it comes to patients with anorexia nervosa who do not get better after several treatment attempts. Are they somehow different from other AN inpatients? If so, can signs of these differences be detected at initial admission?

Drs. Sarah Smith and D. Blake Woodside explored such questions by analyzing data from inpatients at Toronto General Hospital, a large teaching hospital in Toronto, Canada (*Front Psychiatry.* 2021; article 542206). The authors used data from 75 patients admitted to the eating disorder unit at Toronto General between 2000 and 2015. All 75 met the diagnostic criteria for AN, according to the *DSM-IV-TR* at admission, and who consented to participate in the research.

Thirty-seven patients had multiple incomplete admissions, while 38 others completed their first admissions, remained well, and could be reached for follow-up a year after admission. The latter patients were considered to have a good outcome if they remained well and maintained a BMI of 18.5 or greater without bingeing or purging during the 3 months before the study. Other patients were considered to be treatment-resistant when they had two or more incomplete admissions or none during the study period. Thus, the authors noted, the two groups represented the best and worst treatment outcomes seen during the study.

The authors also pointed out that prior studies have shown that patients who do not complete inpatient eating disorders treatment consistently have shorter lengths of stay and are discharged from the hospital at lower body weights than are patients who complete treatment. Patients who do leave treatment at lower body weights are then more likely to have symptoms after discharge and to have severe depressive symptoms that require readmission to specialist inpatient ED care. They added that almost nothing is known about patients who have multiple incomplete hospital admissions.

### **Similarities and differences**

Drs. Smith and Woodside reported that treatment-resistant patients were more likely to have binge-purge type AN and higher depression scores than were those who had good outcomes. A greater percentage of patients in the treatment-resistant group than in the good-outcome group (35% vs. 11%, respectively), were unemployed. Otherwise, members of the treatment-resistant group did not differ from those with good outcomes, in terms of gender, occupation, age, or BMI on admission.

These results echo a common and long-held view in the field that the binge/purge subtype of AN may mark higher severity of disease. One note: the study used a relevant definition of treatment resistance, but not the only one possible. For instance, one encounters patients who complete treatment but do not

remain in remission. It would be interesting to know the characteristics of that group. Either way, this work can help identify where treatment resources as well as where future treatment development efforts might be focused.

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## QUESTIONS AND ANSWERS: Antidepressant-linked Muscle Spasms

**Q.** One of my patients with bulimia nervosa has had troubling periods of dystonia for some time. Among the medications she has been taking is bupropion. Could this be the underlying cause? (*A.J., Cleveland*)

**A.** Bupropion is a dopaminergic and nonadrenergic antidepressant available under trade names such as Wellbutrin® or Zyban®. It is used to treat major depressive disorders, sexual side effects of selective reuptake inhibitors, and as a smoking cessation aid. Bupropion has also been shown to diminish bulimia symptoms but-importantly- carries increased risk of seizures among those with BN (presumably related to electrolyte disturbances from purging) and thus is not usually used for patients with BN.

For your patient, the bupropion is possibly related to the muscle symptoms. Recently a team of Iranian physicians described the case of a patient similar to yours (*J Family Med Prim Care. 2021; 10:1034*). The Iranian physicians' patient was a 34-year-old woman with BN who developed dystonia after 8 months of treatment with bupropion. At first she received slow-release bupropion at an initial dose of 75 mg; she was being treated for feelings of sadness and impatience (usually in the mornings), and her dosage was gradually increased to 450 mg/day. After about 3 days, this patient had painful muscle contractions in her legs and thighs, along with respiratory and abdominal pain. She reported feeling that she was "suffocating." After a visit to the emergency department, she received 10 g of diazepam intramuscularly. Then, symptoms resolved shortly after receiving 2 mg of the anticholinergic biperiden intravenously. She was advised to stop taking bupropion, and follow-up over several months showed no more instances of dystonia. Of course, unless the purging had ceased, it would have been wise to have switched to another antidepressant, given the risk of seizures.

Acute dystonia can appear as a side effect of medications, most often during treatment with antipsychotic drugs, and is often frightening for patients. The authors advise clinicians to be alert to the possible development of acute dystonia in patients receiving dopaminergic drugs.

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## In the Next Issue

### When a Patient Refuses Treatment

Involuntary treatment of any psychiatric disorder has always been a controversial topic, especially for eating disorders patients. And, how to approach a long-time patient who suddenly and seriously refuses any further treatment.

### PLUS

- **Social Media that Promotes Non-suicidal Self-Injury and Anorexia**
- **Weight Suppression and Weight Maintenance After Treatment for AN**
- **Disordered Eating in Elite Male and Female Soccer Players**
- **Food Insecurity and Bulimic Spectrum Eating Disorders**
- **And Much More...**

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