

# Athlete-Specific Treatment for Eating Disorders: Initial Findings from the Walden GOALS Program

**E**ATING DISORDERS ARE A public health concern because of the high levels of comorbidity with other mental health diagnoses such as anxiety, depression, and the associated suicide risk.<sup>1</sup> Athletes are at increased risk for eating disorders compared with the general public<sup>2,3</sup> and unique features of both the athlete mindset and the sport environment have been shown to relate to risks for eating pathology, body dissatisfaction, and compulsive exercise.<sup>4-10</sup> Eating disorders in sport have a range of serious metabolic and physiologic consequences with negative effects on nearly every organ system in the body.<sup>11-13</sup> Ultimately, chronic energy deficiency predisposes athletes to injuries and compromises performance in sport. Early identification and timely intervention are essential<sup>14</sup> yet often delayed in athletes for many reasons, including low awareness of perceived risk inside the culture of sport. Untreated eating disorder symptoms have significant health, performance, and cost implications.<sup>15</sup> Eating disorders in sport are receiving increased recognition and attention at all levels of sport, in a wide variety of sports, and in both national and international arenas since a number of elite athletes, including Olympians, began sharing personal stories on social media. Although awareness of the

problem is growing and the serious consequences to physical and metabolic health, mental health, and performance in sport are well documented, research to guide treatment services that effectively engage and treat athletes with eating disorders is lacking.

Treatment of athletes' eating disorders has received little attention in research.<sup>14</sup> Research is needed to identify effective treatment strategies for athletes and facilitators of recovery.<sup>16</sup> In its 2018 consensus statement addressing relative energy deficiency in sport (RED-S), the International Olympic Committee advocated for research to inform treatment and return-to-play guidelines for athletes with eating disorders.<sup>13</sup> Recent qualitative research provides a rationale for athlete-specific treatment programs to address the unique characteristics of an athlete's mindset and risk factors in the sport environment that influence eating disorder onset, disease course, and recovery experiences.<sup>4,5,17,18</sup> Stereotypes, stigma, and other barriers to eating disorder treatment have been identified<sup>19</sup> and may be augmented in the athlete community.<sup>16,20</sup> As well, athletes commonly report that they feel ambivalent toward and misunderstood in eating disorder treatment.<sup>16,21,22</sup> These realities cause many athlete cases to go undetected and untreated,<sup>16</sup> or they may contribute to negative initial treatment experiences that serve as obstacles to future treatment options. Specialized treatment services for athletes with eating disorders may offer a direct route to recovery and restored wellness by offering an alternative pathway to early detection and timely, efficacious intervention.

This program assessment describes the creation of an athlete-specific eating disorder treatment program delivered at the intensive outpatient program (IOP) level of care and treatment outcomes

achieved. With only one prior report of treatment outcomes from an athlete-specific eating disorder treatment program in the literature,<sup>23</sup> this work contributes novel insights by adding evidence of shifts in behavioral nutrition outcomes to evidence of strength and power improvements documented by other researchers. Client characteristics provide an initial understanding of the athlete phenotype that presents for eating disorder treatment at the IOP level of care and treatment data depict measurable outcomes achieved. Our goal is three-fold: to add to the extremely limited literature on treatment outcomes for eating disorders in sport to inform interprofessional clinical practice, provide justification for athlete-specific treatment services to improve treatment outcomes and patient experiences, and drive research on this understudied public health problem in a high-risk population subgroup.

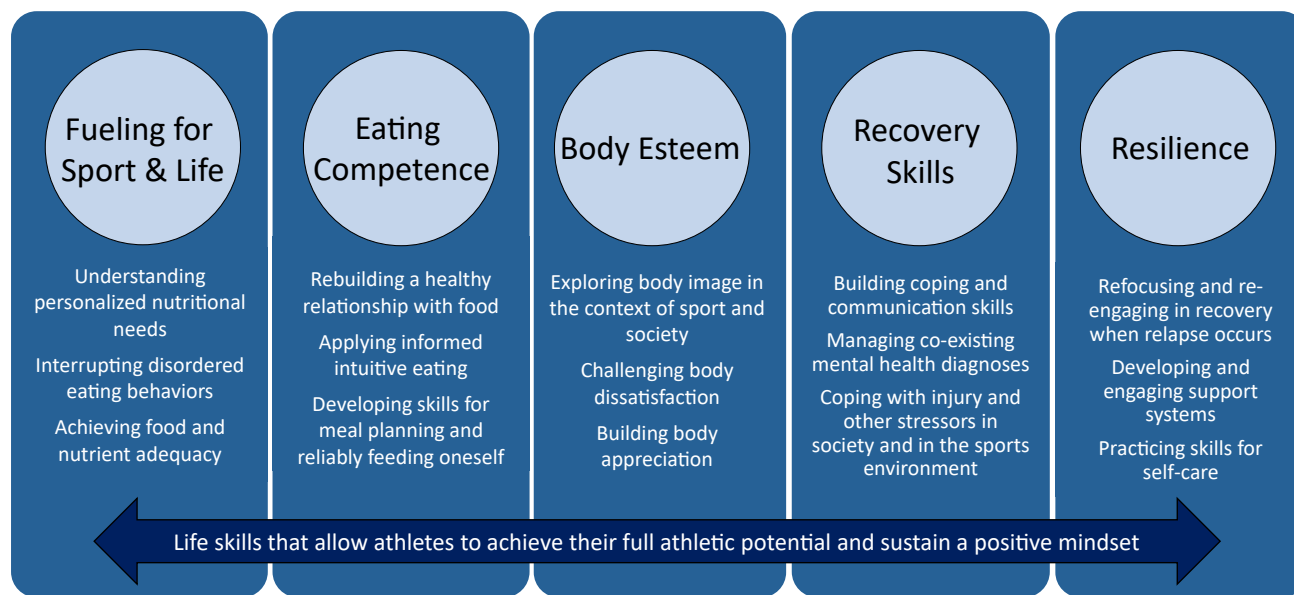
## AN ATHLETE-SPECIFIC EATING DISORDER TREATMENT PROGRAM

The Walden GOALS program is an intensive outpatient eating disorder treatment program designed specifically for competitive adult athletes. The program was created by a multidisciplinary team of mental health clinicians, registered dietitian nutritionists, sport psychologists, and exercise science professionals with dual training in eating disorders and sport working for Walden Behavioral Care, Waltham, MA. The team collaborated to create the IOP curriculum using evidence-based best practices in their respective fields and emerging qualitative research defining eating disorder onset and recovery factors in athletes. The Walden GOALS IOP runs 3 nights a week for 3 hours, providing group and individual psychology and nutrition education sessions along with

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## PRACTICE APPLICATIONS



**Figure 1.** Five pillars of the Walden GOALS Program.

therapeutic food exposure in a shared dinner meal.

The educational curriculum is a 6-week series of group lessons that comprehensively address five pillars of the program: fueling for sport and for life, eating competence, body esteem, recovery skills, and resilience (Figure 1). Lessons are organized around topics and themes that are central to eating disorder treatment using common strategies of cognitive behavioral therapy, dialectical behavioral therapy, and motivational interviewing yet uniquely tailored to addressing the athlete identity, contextual body image, sociocultural influences, sport-specific and performance pressures, and other factors unique to the sport environment, including relationships and communication styles with coaches and teammates. For example, the universal theme of body image is addressed through the lens of the double bind that an athlete faces where she needs the strength of her muscles to excel in sport but desires either the thin ideal put forth by society or the lean ideal put forth by sport culture. Lessons in the nutrition curriculum are aligned with complimentary lessons in the psychology curriculum. In the nutrition group, clients learn why their bodies need fuel and are taught strategies for planning and providing their bodies with foods, nutrients, and hydration. In the psychology group, clients explore

common maladaptive eating disorder thoughts that interfere with fueling goals and learn skills to challenge or reframe those thoughts and emotions, including in the setting of the shared meal experience.

Each athlete receives an individualized assessment, counseling, group education, and exposure to essential life skills that allows him or her to thrive inside and outside of sport. To assess for RED-S and determine the need to limit physical activity during eating disorder treatment, the RED-S clinical assessment tool is applied.<sup>24</sup> A customized meal plan is developed for each athlete and a determination is made whether training, competition, and exercise in general are permitted, restricted, or curtailed. Where and when deemed appropriate, an individualized exercise prescription and training plan is provided by our credentialed exercise specialist. Meal plan and exercise prescriptions are monitored for compliance and adjusted as needed throughout the course of treatment. Weekly, clients receive a minimum of 1 private session with the therapist, 1 with the registered dietitian nutritionist, and 1 group yoga session to build mind–body connections. Individualized therapeutic sessions are grounded in motivational interviewing, a technique that gives clients autonomy, encourages reflection, addresses ambivalence, elicits change talk, and increases both readiness to change and confidence

to change.<sup>25</sup> The multidisciplinary provider team includes licensed mental health clinicians, a sport psychologist, and a registered dietitian nutritionist (RDN) who is also credentialed as a certified strength and conditioning specialist.

The RDN played a central role on our treatment team on both the curriculum development side of the program and in delivery of medical nutrition therapy services in line with best practices for assessing and treating athletes with eating disorders.<sup>26,27</sup> Dual trained in clinical nutrition and exercise science, he managed the assessment, planning, monitoring, evaluation, and refinement of each client's nutrition care plan and exercise prescription. The RDN closely coordinated care with the mental health providers, with outpatient providers, and with members of the athlete's sport community when authorized. The RDN taught sports nutrition educational groups, provided individualized counseling sessions, facilitated goal setting, participated in the shared meal, provided meal coaching, arranged therapeutic challenge meals and processing groups, participated in interdisciplinary care rounds, and monitored and documented patient status and treatment outcomes in the medical record.

Strength and conditioning interventions ensured that physical activity was safe and effective while addressing possible ongoing eating

and/or physical exercise-related pathology. Interventions were guided by a thorough interview and assessment of physical activity, knowledge, beliefs, and behavior history. The assessment informed physical activity recommendations and coordination with the team to identify and treat pathologic physical activity. Our team uses a collaborative, multidisciplinary harm-reduction approach that aims to challenge and reduce harmful beliefs, knowledge, and behaviors through motivational interviewing, education, and various therapeutic modalities, including cognitive behavioral therapy and dialectical behavioral therapy.

### OUTCOME MEASURES

On admission, patients underwent a structured interview with a clinician and the diagnostic criteria of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*<sup>28</sup> were used to confirm eating disorder diagnoses. Anthropometric measures followed standardized protocols with patients wearing a hospital gown and no shoes. Height was measured to the nearest 0.25 inch using a wall-mounted stadiometer; weight was measured to the nearest 0.1 lb on a digital scale. Body mass index (BMI) was computed as weight (in kilograms)/height (in meters<sup>2</sup>). Weight, vital signs, eating disorder behaviors, and compliance with meal plan and exercise prescriptions were monitored weekly. On both admission and discharge, clients self-administered three validated surveys: the Eating Disorder Examination Questionnaire (EDE-Q),<sup>29</sup> the Satter Eating Competence Inventory (ecSI 2.0),<sup>30,31</sup> and the Female Athlete Screening Tool (FAST)<sup>32</sup> to assess eating disorder behavior risk factors unique to female athletes. Clients were asked to articulate their personal goals of treatment at program entry and their perceptions of their biggest accomplishments upon discharge, providing qualitative data on the treatment experience.

This program assessment summarizes data from 15 clients who completed treatment in the Walden GOALS program between March 2016 and November 2017. These clients constituted 19 IOP admissions because four clients had a repeat admission.

Data collected at baseline and program completion followed standardized protocols in the setting of routine clinical care in the Walden GOALS program. The institutional review board at Boston University determined this pilot work exempt under federal regulation 45 CFR 46.102. Clients who completed a minimum of 12 treatment sessions and who had complete assessments at both admission and discharge are included in this assessment (15 of 22 treated individuals; 68%). Five clients who completed the program discharged without completing final surveys. One client was transferred to a higher level of care in a psychiatric hospital for safety reasons and one was omitted from this assessment because he was the only male athlete who presented for treatment during this time period.

### SUMMARY OF THE DATA

Ideal body weight (IBW) was defined using a BMI of 21 for women as a starting point,<sup>33</sup> customized by the treatment team in collaboration with the primary care provider to define a therapeutic target for IBW. Factors that guided the therapeutic target weight included data from pediatric growth charts (for adolescent clients); weight history; evidence of an appropriate biological weight from when menstruation was intact; vital signs; and a thorough evaluation of the athlete's ability to train for sport in relation to the athlete's recovery capacity, which includes an evaluation of RED-S, the physiological and psychological stress of training, the presence of injuries, fatigue, and indicators of fueling and hydration status. From this target weight, percent IBW was computed. Global scores and, where appropriate, subscale scores were computed for each validated assessment tool. The EDE-Q generates a global score plus four subscale scores (restraint, eating concerns, shape concerns, and weight concerns). The ecSatter Inventory-2.0 yields a global score and four subscale scores (eating attitudes, food acceptance, food regulation, and contextual skills). Eating competence global scores were dichotomized with a score  $\geq 32$  used to identify competent eaters.<sup>30,31</sup> FAST scores  $>94$  were suggestive of a clinical eating disorder, scores 77 to 94 suggestive of a subclinical eating disorder, and scores  $<77$  in the healthy range.<sup>32</sup>

Descriptive statistics were generated for the sample. Means  $\pm$  standard deviation are reported for continuous measures and frequencies are reported for categorical outcomes. Because there was no comparison group and given the small sample size in this pilot, no formal hypothesis testing was performed. Open-ended responses to survey questions were typed verbatim and were organized by themes to depict commonly stated goals and self-perceived accomplishments.

### CHARACTERISTICS OF ATHLETES PRESENTING FOR EATING DISORDER TREATMENT

Clients in this sample were, on average, aged 21 years and ranged in age from 17 to 35 years (Table 1). All were women and most were runners. Average length of IOP treatment was 8 weeks. The most common eating disorder diagnosis was Other Specified Feeding or Eating Disorder (OSFED). In this diagnostic category, all met criteria for atypical anorexia nervosa (AN); three exhibited restriction behaviors only whereas six exhibited purging behaviors in addition to restriction. All six who purged used exercise as a means and three purged by vomiting in addition. Five athletes met diagnostic criteria for AN and one athlete met criteria for bulimia nervosa. None of the athletes in our clinical population exhibited binge eating behaviors.

Table 2 shows anthropometric and behavioral data assessed on admission and discharge. On admission, average BMI ( $21.4 \pm 2.6$ ) appeared to be in the desired range but athletes presented with a fairly wide range of BMI values (16.3 to 27.8). Clients ranged from being at 78% to 109% of IBW for height. Behavioral risk for eating disorders in sport was high, with an average FAST score of  $86.8 \pm 14.6$ . This screening tool classified two out of three athletes with either a subclinical or clinical eating disorder by self-report. Eating competence scores were low overall ( $17.8 \pm 11.5$ ) and in each subscale with lowest scores in the food acceptance subscale. Only 10% of clients were competent eaters when they entered treatment. Eating pathology measured by the EDE-Q showed highest levels of distress in the shape and weight concern subscales. Subscale scores were exceedingly high for some

**Table 1.** Baseline characteristics of athletes (aged 17 to 35 years) with eating disorder diagnoses who presented for treatment (n=15)

Characteristic	Result
	<i>mean±standard deviation</i>
Age, y	20.9±5.2
Length of stay in program, d	25±11 <sup>a</sup>
	<i>n (%)</i>
Female sex	15 (100)
<b>Sport</b>	
Distance running	6 (40)
Ball sports <sup>b</sup>	4 (27)
Ice hockey	2 (13)
Body building	2 (13)
Triathlon	1 (7)
<b>Diagnosis</b>	
Other Specified Feeding or Eating Disorder <sup>c</sup>	9 (60)
Anorexia nervosa	5 (33)
Bulimia nervosa	1 (7)

<sup>a</sup>8 weeks.<sup>b</sup>Ball sports include tennis (n=2), basketball (n=1), and lacrosse (n=1).<sup>c</sup>All nine Other Specified Feeding or Eating Disorder clients had atypical anorexia nervosa; three exhibited restriction only and six exhibited purging behavior in addition to restriction. Of those who purged, all six used exercise as a means of purging and three used vomiting in addition.

individuals, as shown by the range of scores reported.

## TREATMENT OUTCOMES ACHIEVED

On discharge, weight, BMI and IBW data appear quite stable on average for the sample, but shifts occurred individually. Average weight change from admission to discharge was a gain of 1.79±4.6 lb, representing a 1.5% increase in body weight on average. Weight change ranged from a loss of 7 lb (−5.7%) to a gain of 6.8 lb (+6%). Eleven admissions resulted in weight gain for clients (36% of whom were <100% of IBW on admission); seven admissions resulted in weight loss (43% of whom were >100% of IBW on admission); and one client who was admitted at 91% of IBW experienced weight maintenance (individual data not shown). Athlete behavioral eating disorder risk measured by the FAST declined to 70.8±12 on average, placing two-thirds of athletes in the healthy range and one-third in the subclinical eating disorder range. No athletes

scored in the clinical eating disorder range at discharge. Eating competence rose to an average score of 29.4±8.4; scores in all subscales measurably increased and food acceptance scores more than doubled. On discharge, one in three clients had achieved eating competence. EDE-Q scores and all subscale scores declined accordingly with treatment.

## PATIENT EXPERIENCES IN ATHLETE-SPECIFIC EATING DISORDER TREATMENT

Qualitative feedback from participants provides insight into factors that drew clients into treatment and self-perceptions of what clients accomplished through treatment. Goals of treatment that clients articulated upon admission (Figure 2) were predominantly categorized into themes related to mental health and mindset, food and feeding behavior, and body image. Other factors that motivated clients to seek treatment related to sport, physical health, confidence, self-worth, school, and social factors. Within these themes, clients articulated two kinds of personal

goal statements: goals that were recovery-focused, indicating what the client hoped to gain as a result of treatment; and goals that were symptoms-focused, indicating what the client hoped to remediate as a result of treatment. Upon discharge, athletes ascribed a majority of their accomplishments (Figure 3) to improvements in the mental health/mindset and food/feeding behavior, speaking to the multidisciplinary nature of treatment provided. A notable theme of accomplishment related specifically to buying into treatment “after so many years,” and the positive experience of engaging in athlete-specific treatment: “I felt like everyone that was in the program spoke my language, I felt so understood.” Other positive gains in sports participation, self-worth, and socialization were described.

## EFFICACY OF ATHLETE-SPECIFIC EATING DISORDER TREATMENT

This program assessment provides the first observational evidence of behavioral nutrition treatment outcomes from an athlete-specific eating disorder program and insightful qualitative data describing athletes’ expectations, experiences, and achievements in treatment. Important outcomes from the Victory Program<sup>23</sup> demonstrated improvements in strength and power as a consequence of eating disorder treatment for 21 athletes; however, those observations come from treatment provided at higher levels of care, in residential and partial hospitalization programs treating clients with greater clinical acuity. Adding to these observations, the Walden GOALS program provides evidence of influence from an IOP that drew lower acuity clients into treatment who otherwise risk going unrecognized and untreated. This distinction is seen in the difference in the profiles of the two populations. The most common diagnosis in the Victory Program sample was AN (66.7%), with only 14.3% in the OSFED category. This stands in stark contrast to the Walden GOALS sample where OSFED was the most common diagnosis among clients in an IOP treatment program (60%) and only 33% had AN. Consequently, the mean BMI of the Victory Program sample at baseline was notably lower than our sample (17.7±2.64 vs 21.4±2.6, respectively).

**Table 2.** Treatment outcomes from an athlete-specific eating disorders intensive outpatient program

Measure	Maximum score	On Admission		On Discharge	
		Mean±standard deviation	Range	Mean±standard deviation	Range
<b>Continuous</b>					
Weight, lb	—	128±13	98-153	130±13	96-151
Body mass index	—	21.4±2.6	16.3-27.8	21.7±2.7	15.9-27.6
FAST score <sup>a</sup>	130	86.8±14.6	59-111	70.8±12.0	52-89
Eating competence score <sup>b</sup>	48	17.8±11.5	5-45	29.4±8.4	12-45
Eating attitudes	15	4.5±3.7	0-12	8.4±3.1	4-14
Food acceptance	9	2.1±2.5	0-9	4.8±1.9	1-9
Food regulation	9	3.4±2.8	0-9	5.5±2.3	2-9
Contextual skills	15	7.9±4.5	1-15	10.6±2.6	5-14
EDE-Q <sup>c</sup> global score	6	2.72±1.34	0.625-5.2	1.90±1.37	0.29-5.2
Restraint	6	2.34±1.96	0.2-5.8	1.51±1.54	0-5.2
Eating concern	6	2.46±1.34	0.6-4.8	1.48±1.37	0.2-5.4
Shape concern	6	3.37±1.68	0.625-5.9	2.63±1.55	0.5-5.9
Weight concern	6	2.72±1.44	0.2-4.8	1.94±1.41	0-4.4
<b>Categorical</b>					
Percent ideal body weight <sup>d</sup>	100	98±8	78-109	99±9	76-111
		%		%	
Eating competent <sup>b</sup>	100	10	—	33	—
Eating disorder categorized by FAST	100		—		—
Clinical		42		0	
Subclinical		26		33	
Healthy, no risk		32		67	

<sup>a</sup>FAST=Female athlete screening tool.<sup>32</sup> FAST defines a clinical eating disorder by a score >94, subclinical eating disorder by a score 77 to 94, and healthy by a score <77.

<sup>b</sup>Eating competence was measured using the ecSatter Inventory 2.0<sup>30,31</sup> with a score ≥32 indicating eating competence.

<sup>c</sup>EDE-Q=eating disorder examination questionnaire.<sup>29</sup>

<sup>d</sup>Ideal body weight was defined as a body mass index of 21 for females,<sup>33</sup> customized as needed by the treatment team in collaboration with the primary care provider.

The efficacy of a specialized IOP for competitive athletes is grounded in its ability to increase eating competence, decrease behavioral risk factors shown to characterize eating disorders in female athletes, and decrease scores in all subscales of the EDE-Q, reflecting a decline in eating pathology and its associated psychological distress. To our knowledge, no prior study has measured eating competence in an eating disorder clinical population and only five studies have measured eating competence in the setting of an intervention. Among those intervention studies, two were weight loss interventions,<sup>34</sup> two were designed to improve diet quality of college students,<sup>35,36</sup> and one targeted low-income women to improve healthy

eating and food resource management.<sup>37</sup> This literature is considerably limited not only in depth but also in terms of methodologic rigor, leaving much room for additional research. According to one researcher, evaluating interventions for their influence on eating competence and developing programs that specifically build self-efficacy for eating competence is “not only prudent, but also imperative.”<sup>34</sup> To date, interventions that have considered eating competence as an outcome have been small in scale, short in duration, low in intensity, and subject to high drop out and bias.

Not surprisingly, others have not demonstrated a measurable change in eating competence in short-term studies. As well, characteristics of the

study populations in these few published intervention studies are so notably different from our eating disorder treatment sample that observations and findings are not at all generalizable. Despite this, we were able to detect a measurable increase in eating competence in our population using an intensive and comprehensive therapeutic program delivered by a multidisciplinary team to a population that had extremely low levels of eating competence at baseline over a duration of about 8 weeks' time. This is a novel piece of evidence. The only other report showing evidence of an intervention effect on eating competence comes from one of the weight loss interventions. In that study,<sup>34</sup> overweight adult women (who had notably higher

Theme	Selected Illustrative Quotes	
	Recovery focused: What I hope to gain	Symptoms focused: What I hope to remediate
Mental health/mindset	<i>I want to understand what's going on in my mind and body by addressing my feelings and thoughts; I want to relax about eating; I want to learn more productive coping skills; I hope to gain more desire to recover; Learn how to use everything I have to dig deep to propel me through this and live a happier life, my life!</i>	<i>I want to stop/reduce eating disorder behaviors; Decrease purging; Stop worrying about my food to exercise ratio; Stop being so anxious around food; Stop using food to cope with my emotions; I hope to be able to get to the point where I can live without having all of my thoughts involve obsessing about food.</i>
Food and feeding behavior	<i>I want to gain a more peaceful relationship with food; I want to have flexibility with food/variety; I want to learn how to fuel for running; I want to eat foods/meals that I enjoy; I hope to get closer to intuitive eating; I want to be able to trust myself alone around food.</i>	<i>I don't want to be afraid to eat certain things; I want to break strict rules around food and my eating patterns; I hope to be less rigid and not be compulsive around food; I want to let go of food [and restriction] as my only real source of comfort and stress relief.</i>
Body image	<i>I want to be more comfortable and confident with my body; I want to be more accepting of my genetics and body image; I want to have a better/more positive body image.</i>	<i>Get away from my obsession with a "fit, healthy, athletic" body type; I want to decrease negative feelings about my body; Not think about food/working out/body image 24/7.</i>
Sport-related	<i>I want to be more aware and informed on the best way to fuel my body for performance.</i>	<i>Being able to properly fuel my body for being an athlete with no regrets.</i>
Physical health	<i>I want to eat enough food to sustain my physical health and allow me to participate in fun physical activity.</i>	<i>I want to feel better.</i>
Confidence	<i>I hope to regain confidence in my ability to recover.</i>	<i>I hope to gain confidence and realize that I deserve food.</i>
Self-worth	<i>I hope to realize I am worth more than the eating disorder.</i>	<i>I want to remove the feelings of shame, guilt, and unworthiness while eating (I shouldn't need to justify my intake).</i>
School	<i>I want to get healthy and ready to leave for school in the fall as well as navigate treatment on top of the stress of the college process.</i>	<i>To cope with my eating disorder and control urges when they arise at school.</i>
Social	<i>I hope to regain the trust of the people around me and get my independence back.</i>	<i>Decrease stress and anxiety related to social interactions involving food.</i>

**Figure 2.** Qualitative themes characterizing goals on admission to athlete-specific eating disorder treatment.

levels of eating competence than our sample at baseline,  $26.2 \pm 6.2$  vs  $17.8 \pm 11.5$ , respectively) underwent a 4-month calorie-restricted diet and exercise program followed by an 8-month weight maintenance program. Although eating competence was not compromised during the weight-loss phase, it significantly improved once participants were no longer dieting during the maintenance phase. This could be considered somewhat comparable to an eating disorder treatment population

moving into recovery and giving themselves permission to no longer diet, restrict, and purge.

That OSFED was the most common diagnostic presentation of athletes in our sample confirms other reports<sup>15</sup> but stands in contrast to the assessment from the Victory Program<sup>23</sup> described above and a second article from that group showing admissions data from a larger sample of 140 athletes where the AN diagnosis affected almost 70% of patients enrolled in residential or partial

hospitalization program treatment.<sup>38</sup> None of the clients in our program assessment had been in eating disorder treatment before. This may be a feature of the OSFED diagnostic category where athletes show signs and symptoms of disordered eating but do not meet the full criteria for a clinical eating disorder diagnosis.<sup>39</sup> Most in our sample may appear to a coach or athletic trainer to be at an appropriate weight for sport, but the underlying emotional distress, eating pathology, and perceived concern for the athlete

Theme	Selected Illustrative Quotes
Mental health/mindset	<i>My biggest accomplishment was working through tough feelings without using behaviors, especially physical feelings like fullness; I learned a lot of useful skills to help me cope and navigate life in a healthy and nondestructive way; Aside from all the skills I learned is my ability to feel things and experience emotion in a way that is not disrupting my well-being; I learned to challenge my eating disorder thoughts, tolerate difficult experiences and manage my emotions better; Distress tolerance has probably been the biggest skill in avoiding behaviors; Finally 100% believing that the eating disorder has and will never bring me the joy that running does; Being a little bit more relaxed about food and eating; I've learned that overexercising and undereating sabotages health and weight.</i>
Food and feeding behavior	<i>My biggest accomplishment is starting to accomplish the eating competence stages. A few of them are becoming habitual; Being a more flexible eater; Being able/willing to eat dessert after dinner; I've increased the variety of foods I eat; I feel comfortable trying new foods; I know how to fuel for sport; I stopped counting calories more than 2 months ago; I increased my intake; I've gained confidence in my ability to follow my meal plan more often.</i>
Treatment-related	<i>I would consider my biggest accomplishment just the fact that I got myself into treatment after so many years; I felt like everyone that was in the program spoke my language, I felt so understood [here]. Feeling so comfortable here allowed me to open up which is one of my biggest accomplishments to date; This is the only place where I've ever been allowed to express my thoughts and opinions, as well as struggle without being punished; I think my biggest accomplishment has been showing up and facing my fears each week; Despite experiencing intense fear, shame, guilt and anxiety, I was able to develop trust in the program and with my team. As a result I was able to allow myself to be vulnerable and take risks with my thoughts, emotions and food; [This program] invested in me and taught me how to practice self-compassion for my body and mind; Having such powerful and inspiring coaching and strong peer support has been essential in my ultimate "leaning in" to all of the advice and strategies; It's not easy to feel so terrible and it's even harder to come out of it, but I'm thankful for the cradled push from everyone in [this program].</i>
Sport-related	<i>The ability to take time off [from sport] when my body/mind needs it; Greater understanding of how my behavior impacts my health and running; I learned that my eating disorder did not drive my athletic success; Becoming a happier, healthier and a better athlete; Being able to go back to training.</i>
Self-worth	<i>I recognized positive qualities about myself and my life unrelated to exercise; I learned radical acceptance—to be OK with yourself in the moment and move ahead; I do not question as much whether I "deserve" to take care of myself. I recognize that needs to be a priority so I can accomplish other things.</i>
Social	<i>I am able to eat food with others; I learned that it's OK to rely on other people sometimes; I've gained more independence.</i>
Other	<i>Getting my weight up; Getting healthy and ready to leave for school.</i>

**Figure 3.** Qualitative themes characterizing accomplishments on discharge from athlete-specific eating disorder treatment.

may be completely invisible. This observation fits with the common report that athletes (and others in the sport environment) often do not consider themselves "sick enough" to warrant treatment, given misperceptions and normative culture in sport. This situation is an important contributor to delayed intervention for eating disorders in sport, making our findings of IOP treatment efficacy for this specific diagnostic category most deserving of attention. Although several clients had been referred and/or had presented for eating

disorder treatment evaluation before, none had engaged with any conventional eating disorder treatment services until they found the Walden GOALS program. The athlete-specific programming was universally endorsed as an important feature that drew OSFED clients into treatment. Earlier detection of eating disorders, including hard-to-recognize OSFED cases, timely intervention that is not delayed until more severe consequences occur, and provision of effective and efficient treatment at a lower level of care are highly desirable

outcomes in terms of lowering morbidity and mortality, increasing the likelihood of recovery, enabling a return to sport, and containing health care costs.

### BARRIERS TO TREATMENT

According to a 2017 systematic review investigating barriers to treatment for eating disorders in the general population,<sup>19</sup> the research is limited and needs more rigor. For example, barriers to treatment likely differ by type of

treatment sought, whether psychological, nutrition-related, or pharmacotherapy, and type of treatment has not adequately been examined in the literature.<sup>19</sup> Nonetheless, it is documented that the number of individuals with an eating disorder who access treatment in a given year (19% to 36%) is quite low; notably lower than those with other mental health diagnoses (35% to 41%).<sup>40-42</sup> Also, treatment for eating disorders is quite often delayed, sought on average 10 to 15 years after the onset of the illness compared with an average 8.2-year delay in those with mood or anxiety disorders.<sup>43,44</sup> Common barriers identified in the literature include shame, stigma and gender stereotypes, low mental health literacy, perceived need for treatment, unhelpful prior treatment experiences, fear of change, low motivation, service eligibility restrictions, and cost.<sup>19</sup>

Barriers to treatment are likely heightened and more profuse in the athlete community. Access to qualified providers is quite limited in certain geographic locations and may be particularly challenging for collegiate athletes living away from home, in suburban, rural, or remote areas of the country, or competing at levels below Division 1 or below varsity status (ie, in club, intramural, or recreational sports). Only recently has student-athlete mental health become a priority initiative of the National Collegiate Athletic Association. In its 2014 publication *Mind, Body and Sport*,<sup>45</sup> the organization put student-athlete mental wellness at the top of its health promotion agenda and began providing extensive education and awareness campaigns to increase mental health literacy of athletes and athlete support personnel. The attention that this report and other expert panels<sup>11-13</sup> shed on the dangers of eating disorders in sport helps to increase the perceived need for treatment, increase the understanding that eating disorders affect both male and female athletes, and provide motivation for treatment by comprehensively articulating the far-reaching physical, emotional, physiologic, and metabolic consequences that ultimately compromise performance in sport. Although eating disorder treatment is often delayed until late in the course of illness in the general population,

one study demonstrated that the desire to regain the ability to compete in sport was a chief motivator for recovery among female athletes, and female athletes tended to recover at earlier ages than non-athletes.<sup>17</sup> We similarly found return-to-sport to be an important contributor to treatment compliance and a major motivator to recovery in the Walden GOALS program. This evidence provides an opportunity to effectively create and market athlete-specific eating disorder treatment programs and services not only to athletes but also to parents, coaches, and athlete support personnel who are equally invested in the athlete's recovery and return to sport.

Perceptions of stigma can deter affected individuals from seeking help to avoid being labeled or discriminated against.<sup>46</sup> In athletics, the fear of being perceived as weak and not strong, the threat of losing a college scholarship, and the faulty belief that eating disorders are "a woman's issue" are examples of stigma and emasculating stereotypes that keep athletes from disclosing eating disorder symptoms and asking for help.<sup>20</sup> It has been argued that individuals with eating disorders would more readily seek treatment where support services were less stigmatized and stigmatizing.<sup>47</sup> Yet a study involving 152 athlete support personnel (including coaches and others) documented the presence of stigmatizing attitudes toward athletes with eating disorders such as AN; and male providers displayed greater negative attitudes toward athletes with mental health conditions.<sup>48</sup> This research uncovered evidence of communication difficulties between athlete support personnel and athletes with eating disorder symptoms along with pessimism regarding the outcome of the condition. Given their salient roles in the daily lives and triaging of athletes' needs, it is likely that negative attitudes toward athletes with clinical or subclinical eating disorders have implications for assessment and referral activities that could significantly delay identification and timely intervention. On the other hand, a specialty treatment program with an expert treatment team that understands the athlete identity and the unique features of the sport environment can facilitate communication between athletes and athletic staff and

may restore optimism in the return to sport prognosis when timely and effective interventions are provided.

## FUTURE DIRECTIONS IN PRACTICE AND RESEARCH

Insights into how athletes give meaning to eating disorder treatment experiences can be gained from narratives. Those gleaned from clients in this program assessment provide us with a necessary sensitivity to the sport context of the eating disorder and offer relevant clues to guide therapeutic interventions.<sup>16</sup> Clients in this assessment bought into treatment because they believed it was customized for them and addressed their unique needs as athletes. This may turn out to be an important feature required to achieve meaningful treatment experiences and desired treatment outcomes for athletes.

This program assessment is limited by its observational design and the lack of a comparison group. Although treatment outcomes are positive and measurable, we do not know that they are superior to treatment outcomes of athletes who participate in traditional IOP programs. We also do not have data on athletes who declined treatment. Whereas the athlete eating disorder treatment literature is sparse, we do know that untreated eating disorders have life-threatening consequences,<sup>49,50</sup> wreak havoc on social, emotional, and physical well-being, and compromise performance in sport,<sup>13</sup> sometimes forcing an athlete out of sport altogether. Research with comparison groups and randomized intervention designs is needed to provide definitive evidence of the efficacy of eating disorder treatment for athletes.

This program assessment was also limited by the absence of male athletes from our treatment pool. This was not an intentional exclusion, but rather a lack of male athletes coming into IOP treatment. Male athletes experience eating disorders at rates higher than previously appreciated.<sup>13</sup> For many reasons and, arguably sometimes to a greater extent than occurs in female sport, eating disorders in male athletes run a high risk of going undetected and untreated.<sup>20</sup> In the general population, it is known that eating disorders in men have more deadly consequences



than in women because of the significant delay in identifying men and getting them into treatment.<sup>51</sup> Efforts to break down barriers to treatment, remove stigma, address stereotypes, and raise awareness by educating key members of the sport community should contribute to earlier identification of eating disorders among men and more timely initiation of treatment. Research that investigates the onset and disease course of eating disorders in male athletes is needed, as is research on treatment efficacy and outcomes.

## CONCLUSIONS

As demonstrated here, athlete-specific eating disorder treatment has positive, measurable effects on eating disorder behavioral risks, eating pathology, and eating competence. Additional research is needed to test the efficacy of athlete-specific eating disorder treatment using rigorous methods. In the absence of evaluation research, these summarized observations provide valuable insights to equip professionals in clinical practice with targeted strategies and empower them to systematically measure and report treatment outcomes. This work encourages the development of expert, multidisciplinary athlete-focused treatment services and provides a strong rationale for ongoing research to inform evidence-based best practices to treat eating disorders in sport.

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## STATEMENT OF POTENTIAL CONFLICT OF INTEREST

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## AUTHOR CONTRIBUTIONS

P. A. Quatromoni led the team that developed the athlete-specific intensive outpatient program curriculum, designed the protocols for data collection, directed the outcomes research, and drafted the manuscript. M. Stranberg, E. Slager, D. Spital, and C. Coia implemented the Walden GOALS curriculum, provided patient care, and collected assessment and outcome data. All authors reviewed and contributed to revisions to produce the final manuscript.