

ROUNDTABLE

Team Management of the Female Athlete Triad: Part 2: Optimal Treatment and Prevention Tactics

Elizabeth Joy, MD; Nancy Clark, MS, RD; Mary Lloyd Ireland, MD; Joseph Martire, MD; Aurelia Nattiv, MD; Steve Varechok, LCSW

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This is the second of two roundtable articles on the female athlete triad. The [first](#), on diagnosis, appeared in March.

In Brief: Multidisciplinary management of the female athlete triad (disordered eating, amenorrhea, and osteoporosis) is optimal, but what exactly does it entail? With the primary care physician as the point person, the healthcare team addresses the underlying causes of disordered eating through such measures as drawing up a contract for returning to play, resolving nutrition issues, exploring psychotherapy options, and, sometimes, prescribing antidepressants. Hormone replacement therapy and conservative or orthopedic intervention for stress fractures may also be required. Communication among the members of the treatment team is crucial, and athletic trainers especially can provide valuable input. Prevention strategies need to involve education of coaches, teachers, trainers, parents, and others who work closely with female athletes.

Moderator:

Elizabeth Joy, MD, is in the Department of Family and Preventive Medicine and a team physician at the University of Utah in Salt Lake City. She is a fellow of the American College of Sports Medicine (ACSM) and a member of the ACSM task force on women's issues in sports medicine.

Participants:

In addition to being on the front line for detection of the female athlete triad (disordered eating, amenorrhea, and osteoporosis), primary physicians play an integral role in its multidisciplinary management. Primary care sports medicine physicians often initiate treatment for underlying causes of the triad, and they are well suited to coordinate overall treatment and follow-up. As the case study below illustrates, continual communication among all members of the healthcare team--and with parents, coaches, trainers, and other ancillary personnel--improves all aspects of treatment.

Case Study

Joy: Multidisciplinary management of the female athlete triad is ideal and probably improves prognosis. Let's look at a typical case and then discuss optimal management:

A 20-year-old female gymnast returns from summer break, having lost 15 lb to weigh 85 lb. She hasn't menstruated for 4 months. After 2 weeks of preseason conditioning work, she comes to the training room with right shin pain.

Further information reveals that she has restricted her calorie intake to 500 to 800 kcal per day and thinks the ideal body weight for her 5'8 29 frame is 75 lb. Her coach, trainer, and team physician, however, believe that her ideal body weight is closer to 100 or 105 lb. She reports that she had menarche at the age of 15 and has had fairly regular menstrual periods from age 16 until 4 months ago. She has no history of bone or overuse injury.

On exam she is quite thin and has stable vital signs and facial and body lanugo. Extremity exam reveals focal tenderness to palpation on the midshaft of the tibia. Her laboratory studies are all normal except for low follicle-stimulating hormone and low estradiol, which are consistent with hypothalamic amenorrhea. Her plain films are negative, but a bone scan is positive for a tibial stress fracture.

Medical and Nutrition Steps

Joy: What are some of the first steps in treating this patient?

Nattiv: This is where the multidisciplinary team comes into play. I

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Joseph Martire, MD, is the director of nuclear medicine at the Union Memorial Hospital and Sports Medicine Center and an assistant professor of radiology at Johns Hopkins University School of Medicine, both in Baltimore. He is also a member of the editorial board of **The Physician and Sportsmedicine** and a fellow of the ACSM and the

would obtain a more detailed history regarding the athlete's recent weight loss and psychological well-being, as well as her insight into the problem. After establishing a relationship with the athlete, I would confront her with the problem and facilitate getting her into a program involving a psychologist and nutritionist who have expertise in working with disordered eating in athletes.

In situations such as this one, I would try to get the athlete to understand and agree to the recommendations outlined to her in a written contract that details what steps she needs to take for continued participation on her sports team. The focus of the contract is on optimal health and supporting the athlete to compete in a safe and healthy manner. It would include specific increment goals for weight increase, such as 1 lb per week until she achieves the goal of an established healthy weight range. (Weight alone is not a good indicator of body composition, but it may be used in the short term to monitor the athlete's progress. Percent body fat or sum of skinfold measurements can be used after she has reached and maintained a healthier weight range.)

I would recommend that the patient meet with the psychologist, nutritionist, and me regularly to monitor her progress. I would review her laboratory studies and perform a more detailed physical exam and pelvic exam if she has not had one recently. If her workup were consistent with hypothalamic, hypoestrogenic amenorrhea, I might recommend oral contraceptive pills, because studies have demonstrated that athletes who have a history of oral contraceptive use may be at less risk for stress fracture (1-3), and hormone replacement therapy may actually lead to an increase in bone mineral density in amenorrheic athletes (4).

Finally, I would recommend a calcium intake of 1,500 mg/day and 400 to 800 IU/day of vitamin D. Her training intensity will need to be changed to non-weight-bearing activity because of her stress fracture, and the amount of exercise will need to be monitored so that her energy expenditure does not exceed her energy intake.

Clark: I would try to get a sense for why she's in my office and ask her, "What brings you here? What are you looking for? How can I help you?" to help gauge her receptivity to nutrition counseling. I would ask what her current weight is and what *she* wants to weigh, as well as learn about her overall weight history and how she compares with her genetic family. I'd mention the rule of thumb for her height is to weigh 110 lb plus or minus 10%. A gymnast may want to be lighter, so 100 lb is reasonable, but 85 lb is unhealthfully low.

American College of Radiology.

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Steve Varechok, LCSW, is a licensed clinical social worker and certified strength and conditioning specialist. He is an adjunct instructor in the Division of Food and Nutrition, College of Health, at the University of Utah.

As part of my data collecting, I often use pictures to compare anorexic people with healthy athletes; I point out the muscle wasting, the cachexia, and mention that my goal is to help her be lean, fit, healthy, and at peace with food. I'm not trying to "fatten her up." I also take baseline skinfold measurements to use in the future to show improvements in body composition as she rebuilds her body.

I assess how she feels about her body. If she complains about being fat, I'll make the distinction, "You may be *feeling* fat, but clearly you are not fat. We have data to show that you are not fat." We'll talk about how fat is not a feeling; what she is likely feeling is *out of control*, *inadequate*, and *imperfect*.

I repeatedly mention that food is not the problem, but rather the symptom of some unhappiness in her life. But certainly she needs to fuel herself. I'll calculate how much fuel she needs to eat each day: for example, 1,000 kcal for just lying in bed, another 500 kcal for daily activities, and maybe another 500 kcal for her gymnastics. This clarifies that her current 500- to 800-calorie intake is way below her body's needs. I'd also calculate how many grams of protein and fat are appropriate. We would design a healthy eating plan that gradually increases her intake to accommodate these needs, adding about 100 calories per week (eg, a yogurt for breakfast, a banana for a preexercise snack, etc).

I try to get the patient away from fearing food as the fattening enemy. I'd explain that, rather than trying to eat as little as possible, she needs to fuel her muscles better so she can be a better athlete. I might ask her, "Are you training to improve your performance or to burn off calories? What are you invested in? What are your goals? Do you think you are ready to let go of the anorexia and be a healthy athlete?"

My job is to educate people about the best ways to fuel their bodies. I make it very clear that I can provide nutrition information, but each client must choose to put it into practice. If an anorexic client has four "safe foods"--broccoli, bagels, pretzels, and rice cakes, for example--I will point out with visual aids the lack of protein, calcium, iron, and zinc--all nutrients important for top performance. I'll explain the benefits of balancing the diet with protein-rich foods and dairy products. We would also discuss the role of nutrition in amenorrhea and stress fractures.

In subsequent visits, I would continue to address her fears about food. We would gradually increase her calories, add in a variety of foods, and focus on improvements in her energy, health, sleeping, ability to concentrate, body warmth, and workouts--all benefits of eating better. Given that food is not the problem, I generally talk about *control* of food, her drive to eat a *perfect* diet and have a *perfect* body, and ask if control and perfection are issues she's addressing in her counseling sessions.

My approach varies from person to person. A lot of patients with anorexia are preoccupied with calories, but I think it's important for them to know that they could appropriately be eating 500 kcal a meal. When they have only a 100-kcal yogurt for lunch, they can see that they fall short by 400 kcal. I typically convert calories into servings of dairy foods, protein-rich foods, starches, vegetables, and fruits to reduce the obsession about calories.

With the bulimic patient, I will probably not do as formal a meal plan. The woman who has bulimia

likes to know she may have 500 kcal of doughnuts; this helps her overcome her feelings of denial and deprivation. We create meal plans that prevent hunger and the physiologic drive to binge.

I generally let patients choose what they want to eat. If they feel safe eating rice cakes but not bread, fine. I encourage balance in the diet. If they want to have fat-free everything, for a while I'll let them. But I'll talk about the values of fat and its importance in the diet. I repeatedly mention that their desire to *control* fat is the bigger issue than fat; food is to fuel, not to control. As we establish more of a relationship, I'll say "How about trying an 'adventure food' with just a bit of fat? How about having 1% instead of fat-free yogurt or fat-free milk?"

Joy: I encourage people to eat with someone else. I find that if they eat alone they are more likely to talk themselves out of eating enough food. If they're with a supportive friend whom they trust, they feel a bit safer eating that entire bagel or whatever.

Psychological Issues and SSRIs

Varechok: First, it's helpful to know what's going on in the patient's life. She might be struggling with questions about relationships, career choice, values, etc. It's helpful to identify the sources of stress in her life.

I would also want to identify her motivation for treatment. Does *she* see a problem? Is *she* concerned? Or is she seeking treatment only because a coach or parent is forcing the issue? These are important questions.

I'd want to find out if this patient sees the treatment team members as resources or simply as authority figures. Her view of her healthcare providers could affect her compliance. For example, if she sees the physician and dietitian as authority figures, she may be very passive-aggressive or pleasing to them.

A very rigid, demanding, and uncaring primary care physician can cause the patient to be more resistant to treatment. I think it is very important that the physician be gentle and understanding, yet firm and uncompromising about medical standards.

The physician needs to know that the patient may not be motivated for treatment, even if she is smiling in the office. She may have every intention of doing what she promises, but when she is by herself she may not eat as she's supposed to, or she may not report the times she's purging--for a number of reasons. She may do a lot of different things to cloak her behavior, like water-binge before an appointment at which she is to be weighed. These people are not generally deceitful, but they can feel extremely threatened and may hide maladaptive weight-control behaviors as a result.

Individual therapy is essential because of individual dynamics, and some patients are intimidated by group therapy. Some people look at the group experience and say, "I'm not one of them. I don't have their problem." Group therapy can be very helpful, especially for the patient who has bulimic

tendencies, and sometimes it can help anorexic athletes. But each patient must be treated uniquely and will require an individualized plan. The dietitian, physician, and athletic trainer may have information to either support or not support group therapy.

Joy: In terms of pharmacotherapy for psychological problems, I prescribe selective serotonin reuptake inhibitors to most, if not all, my bulimic patients, and to at least 50% of anorexic patients. Most of these patients have combined anxiety, depression, or obsessive-compulsive features that could be helped by antidepressant therapy. Anxiolytic medication such as benzodiazepines may have a role in the patient who has extreme mealtime anxiety. It's important to start with low doses of medication and increase the dose gradually as needed to avoid side effects. Once-daily medication is preferred to multiple-dose therapy because it improves compliance.

Stress Fracture Management

Joy: How would you treat the tibial stress fracture? What if it were on the distraction side of the femoral neck?

Ireland: The primary care physician can make the diagnosis of a compression-side, or medial, tibial stress fracture by localized tenderness, usually at the middistal third of the tibia, and plain x-rays that show periosteal reaction. (If these tests are equivocal, repeat the x-rays in 2 to 4 weeks or order a lower-extremity technetium bone scan.) The medial tibial stress fracture is treated with reduction of axial loading during training, lower-extremity strengthening, and soft orthoses. It will usually take 6 weeks to heal.

On the anterior cortex of the tibia, a "dreaded black line" and localized tenderness with anterior tibial bowing indicate a more worrisome stress fracture. Intermedullary nailing is indicated for recurrent anterior tibial cortex fractures.

For a hip fracture on the distraction side of the femoral neck, pinning in place is indicated. If these fractures are not pinned, displacement, avascular necrosis, and permanent disability are likely. A compression-side femoral neck fracture is treated with protected weight bearing, cross-training, and reduced repetitive axial loading. Return to sports usually takes 3 to 4 months.

The bigger picture, however, must be addressed. If the fracture is caused by nutrition or hormone insufficiency that is properly treated, the fracture will usually heal with time. Recurrent stress fractures should alert the physician to a bigger problem: the female athlete triad.

Clark: It's helpful for the patient to work with her coach and trainer to devise an alternative exercise program that will not aggravate the stress fracture. Maybe she can't do her usual exercise, but she'll yearn to do something else, assuming that her weight is stable or on the upswing and her intake can support that exercise. This adds a sense of relief to her anxieties about "getting fat" because of lack of exercise.

Return to Play

Joy: Assuming that the patient's stress fracture has healed, what would you recommend regarding return to competition?

Nattiv: I would emphasize more cross-training, especially as she begins to return to weight-bearing activities, and a cyclical approach to training, with a decrease in activity following an increase. The multidisciplinary approach would need to continue, as well as the contract (with adjustments if needed), and I would continue to meet with her regularly and monitor her psychological and nutrition status, as well as her general health and injury status.

Joy: At what point should you order dual-energy x-ray absorptiometry (DEXA)? At diagnosis, after she's been treated, or before she goes back to activity?

Martire: DEXA can be an important tool for diagnosis, checking treatment efficacy, planning follow-up, and predicting fracture risk. A baseline DEXA is crucial when you first suspect or detect the problem, although guidelines haven't been established for this age-group. The DEXA will allow you to assess whether osteoporosis is present, and the bone mineral density value then becomes the baseline to measure the effectiveness of therapy on follow-up scans every 12 months. Second, if osteoporosis is present, you can show the patient how she compares with young adult standards, and this statistical analysis may have some shock value to show the athlete her risk for fracture and other problems.

Ireland: These athletes have already been sidelined once, and their desire is to stay on the playing field. They may avoid being seen by athletic trainers and physicians as early as they should.

Nattiv: I'm more aggressive in the workup of femoral neck stress fractures, especially if they have the typical triad picture. I usually get bone densitometries in this situation. If they are low (osteopenia is defined as bone density values between 1 and 2.5 standard deviations below the mean and osteoporosis as greater than 2.5 standard deviations below the mean compared with young normals), I will often obtain a metabolic workup. The profile includes parathyroid hormone (PTH), thyroid-stimulating hormone, vitamin D (25-hydroxyvitamin D), and a chemistry panel and complete blood count, in addition to the amenorrhea workup.

If the athlete has significant bone loss, I will sometimes obtain bone markers for bone resorption (urinary studies for N-telopeptide or pyridinium crosslinks) and bone formation (serum osteocalcin). If they are abnormal, they can assist in treatment and follow-up. The PTH can also be followed. If it is elevated (due to secondary hyperparathyroidism), it should normalize as the athlete improves her nutrition status and weight.

A DEXA can be obtained again after a year or so in patients who have osteopenia or osteoporosis to evaluate the effect of treatment. If her bone density is normal or above normal--as is sometimes seen in

gymnasts because of high mechanical loading--I still recommend a comprehensive approach to prevention and treatment of her disordered eating, amenorrhea, and potentially diminished bone health.

Involving Parents and Coaches

Joy: How does the management team involve parents and coaches for the long term?

Varechok: Obviously, if the athlete is a teenager, the parents need to be involved. I would have the parents in for family therapy and strongly recommend that they participate with the dietitian because the parents can help make team management work or sabotage it. If the patient is an adult, parents would not necessarily be involved unless it's clinically indicated.

Again, coaches can help make or break treatment just as the parents can. If a strength and conditioning coach is involved, I would recommend that the physician stay in touch with that person about optimal conditioning choices. Strength coaches are also a good source for educating the patient about building lean mass. The head coach usually is too busy, so either an assistant coach, a strength coach, or an athletic trainer is an excellent source to communicate with the physician. The athletic trainer is probably the best person to relay information from the patient to the healthcare team and vice versa.

A psychotherapist wants to know from these sources the athlete's motivation level and what symptoms are being seen, and then he or she can help discuss this information with the physician.

Clark: When parents bring the athlete to our clinic, I clarify beforehand that I'll spend the initial 50 minutes of the consult with the child, but I'll save 10 minutes at the end for them. During the consultation, I ask my client how her parents are dealing with the situation, if they are helpful to her, and if there's anything she wants me not to tell them.

With the parents, I'll address their concerns and clarify that my job is to teach their daughter how to eat more healthfully, their job is to support her, and her job is to progress when she's ready. I encourage the parents to let go of trying to control food; we acknowledge how hard that is. I give them and their daughter a reading list, highlighting the books I think would help most at the moment (see "Eating Disorder Resources for Patients" below).

Considering Hospitalization

Joy: At what point do you consider hospitalization for psychological issues?

Varechok: I see four reasons to consider inpatient treatment: (1) functional impairment; (2) severe impairment of mental status (concentration, attention span, etc); (3) an acute risk for bodily harm through reckless behavior or suicide; and (4) ineffective outpatient treatment--the athlete's symptoms continue to worsen.

Treatment should be done in the least restrictive environment. More intensive treatments are used if the risks to the patient's health increase or her ability to function worsens. More intensive treatment can take several forms. The first is intensive outpatient treatment. If the patient's condition deteriorates, more frequent visits with all members of the management team are warranted, such as more frequent therapy sessions, maybe group therapy, meeting with the dietitian more often, and more medical monitoring.

If that doesn't work, brief hospitalization on a medical floor for a couple of days to treat dehydration or stabilize any medical complications may be effective. This approach can benefit a patient who has otherwise been doing well in outpatient treatment, but it will only be effective with motivated patients.

Another option is a stay in a general psychiatric unit for 3 to 10 days. The patient can then receive more intensive treatment while her medical condition is monitored. Therapy can address the patient's maladaptive behaviors, like out-of-control purging, and it can provide more supervision and support during and after meals. The patient can then be discharged to a less restrictive environment like day treatment or outpatient treatment.

In day treatment, the patient is involved in daily therapeutic activities but does not live at the hospital. One benefit of this option is its cost-effectiveness. A drawback is that the athlete is not able to participate in her sport for a while--generally 2 to 6 weeks.

When brief treatments are not effective and the athlete exhibits low motivation, extended hospitalization in either a general psychiatric unit or an eating disorders program for up to about 8 weeks may be indicated. Finally, living in a residential treatment facility for more than 3 months may be necessary. This is rarely needed, however.

Again, you need to treat every individual as unique because some of these modalities will make matters worse for some patients. That is when communication with the treatment team is essential.

Prognostic Factors

Joy: My experience is that the longer a patient has an eating disorder, the longer she needs to be hospitalized. What other factors affect prognosis?

Nattiv: Besides the chronicity of the disease as you mentioned, the older the individual is, usually the worse the prognosis, at least with anorexia. Other prognostic factors that have been reported for anorexia include failed previous treatment, a history of disturbed family relationships, and poor individual adjustment (5).

Varechok: Another valuable prognostic indicator is the patient's environment. If she lives in a dorm or at home with family, she needs to be in a supportive environment with encouraging people. An

environment in which she feels isolated, pressured, uncared for, or misunderstood can impede recovery. If the patient's surroundings will not support her use of appropriate methods of coping with stress, she will probably revert to destructive behavior patterns.

The patient's identity as an athlete may be a factor in prognosis, too. If she has been an athlete most of her life and can't broaden her identity beyond that, she could face a long struggle.

Joy: Being male and having an eating disorder is an indication of poor prognosis, as is being married, because it implies that the disease process has been longer. Other factors associated with a poor outcome are very low self-esteem and being able to correct the weight problem but not the underlying psychological issues. This last factor expresses itself in the patient who wants to please her coach, doctor, and psychotherapist by gaining weight just to get to play.

Prognosis for the triad can be viewed as a bell-shaped curve (figure 1). On one end is the patient who has a very mild disease, often as a result of nutritional misinformation. She may not need multidisciplinary management and is probably never going to need hospitalization. At the other extreme is the patient who has a chronic disease and multiple hospitalizations.

The remaining 80% of the bell-shaped curve can be divided in half. One half has mild-to-moderate disease. These patients are likely to have a disturbed body image and need multidisciplinary management, but they are less likely to be hospitalized. The patients on the other side of the curve tend to have the disease longer and are more likely to require hospitalization.

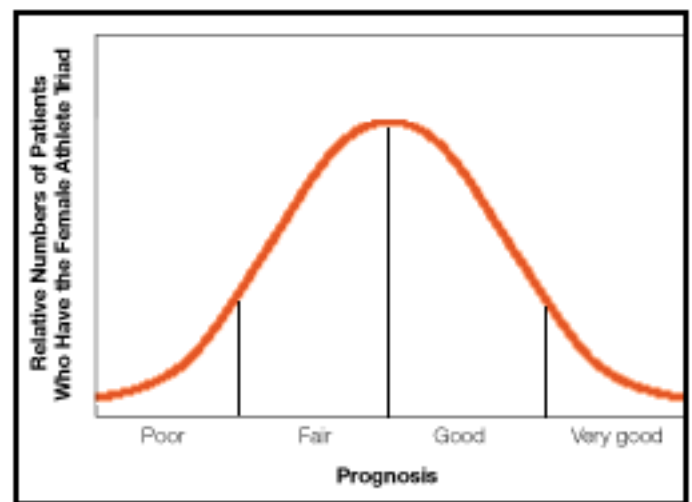


Figure 1. For illustrative purposes, a bell-shaped curve can describe the prognosis for patients who develop the female athlete triad. At the two extremes are patients who have chronic disease and multiple hospitalizations and those who have a very mild disease. Those with moderate-to-severe disease tend to have had the triad longer and are likely to require hospitalization. Those who have mild-to-moderate disease are likely to have a disturbed body image and need multidisciplinary management, but they are less likely to be hospitalized.

Preventive Measures

Joy: How is the triad best prevented?

Nattiv: Increased awareness and sensitivity to the problems of the triad are key. Because most coaches don't know a lot about eating disorders or about counseling athletes on weight loss, many national governing bodies are looking at mandatory education for coaches in these areas of concern.

Physicians need to talk to the coaches to make sure that, if the athlete is weighed, the coach does not monitor her status or give her weight-loss suggestions. In fact, a physician or trainer, not a coach, should monitor weight or body composition. Eating disorders can be exacerbated because of pressure

from the coach to be a certain weight that he or she perceives as ideal. At the University of California, Los Angeles, we are evaluating a multidisciplinary approach to educate coaches and athletes to see if education results in behavior change.

Clark: We as a society also need to acknowledge and honor diversity of body size and shape; one is not better than another. We also need to reinforce the message that the best-fueled athlete--not the thinnest--will be the better competitor.

Varechok: Having a good screening mechanism to catch problems early is critical. Preseason education of athletes can also help. But seminars have to be cast in positive terms, not just telling athletes to avoid eating disorders, because they tend not to worry about something they don't see as a problem. Discussions should emphasize that athletes can improve body composition, strength, endurance, energy level, mental focus, and their ability to cope with stress.

You also need clearly defined lines for referral, whether the athlete has a mild problem or severe one. Athletes have unique pressures on them; if we teach them how to cope with stress, they might stand a better chance of making sound choices.

Joy: Education needs to start at a very early age. Kids are starting organized sports at 6 to 8 years of age, and that's where we need to focus nutrition education.

Ireland: I'd like to echo the importance of education. Having an athlete who has had disordered eating talk to groups is very helpful because young athletes often respond well to a peer. Also, parents, coaches, and officials need to know that thinness should not be rewarded with higher marks.

Nattiv: Another helpful approach is to have peer mentors--usually senior members of the team--to whom athletes can go if they have a problem. The mentor maintains confidentiality and provides resources.

Martire: The Union Memorial Sports Medicine Center in Baltimore has a community outreach program that gives educational and prevention lectures to people who deal with young student-athletes every day, like school coaches, athletic directors, school nurses, and teachers. The program helps sensitize these professionals to the problems of adolescent athletes such as eating disorders and steroid use. These individuals on the "front line" are our best hope for prevention and detection.

Joy: I hope multidisciplinary management will improve the prognosis of disordered eating because recurrence rates are high--up to 50%. I'd like to see much improved statistics 10 years from now.

Eating Disorder Resources for Patients

Organizations

American Anorexia/Bulimia Association, Inc
293 Central Park West, Suite 1R
New York, NY 10024
(212) 501-8351

Anorexia Nervosa and Related Eating Disorders, Inc
Box 5102
Eugene, OR 97405
(541) 344-1144

Bulimia Anorexia Self Help, Inc
2821 N Ballas Rd
St Louis, MO 63131
(314) 997-0945

Eating Disorders Awareness and Prevention, Inc
603 Stewart St, Suite 803
Seattle, WA 98101
(206) 382-3587

National Association of Anorexia Nervosa and Associated Disorders
Box 7
Highland Park, IL 60035
(847) 831-3438

Recommended Reading*

The Body Betrayed: A Deeper Understanding of Women, Eating Disorders, and Treatment. Zerbe KJ, Carlsbad, CA, Gurze Books, 1995

Body Traps: Breaking the Binds That Keep You From Feeling Good About Yourself. Rodin J, New York City, Morrow, 1993

Breaking Free From Compulsive Eating. Roth G, New York City, Signet, 1986

Compulsive Exercise and the Eating Disorders. Yates A, New York City, Bruner/Mazel, 1991

French Toast for Breakfast. Cohen MA, Carlsbad, CA, Gurze Books, 1995

Full Lives: Women Who Have Freed Themselves From Food and Weight Obsessions. Hall L, Carlsbad, CA, Gurze Books, 1993

Is Your Child Dying to Be Thin? A Workbook for Parents and Family Members on Eating Disorders. Goodman L, Pittsburgh, Dorrance, 1992

Making Peace With Food: Freeing Yourself From the Diet-Weight Obsession. Kano S, New York City, Harper & Row, 1989

Nancy Clark's Sports Nutrition Guidebook, ed 2. Clark N, Champaign, IL, Human Kinetics Books, 1997

Nutrition and Eating Disorders: Guidelines for the Patient With Anorexia Nervosa and Bulimia Nervosa. Patterson C, et al, Van Nuys, CA, PM Inc, 1992

Overcoming Eating: Living Free in a World of Food. Hirschmann J, Munter C, New York City, Fawcett/Columbine, 1989

Surviving an Eating Disorder: Perspectives and Strategies for Family and Friends. Siegel M, Brisman J, Weinshel M, Harper & Row, New York City, 1988

When Food Is Love. Roth G, New York City, Penguin, 1992

When Women Stop Hating Their Bodies: Freeing Yourself From Food & Weight Problems. Hirschmann J, Munter C, New York City, Ballantine, 1995

*Many of these titles are listed in the Gurze Eating Disorders Bookshelf Catalogue (1-800-756-7533)

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therapy. Arch Intern Med 1996;156(19):2193-2195

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