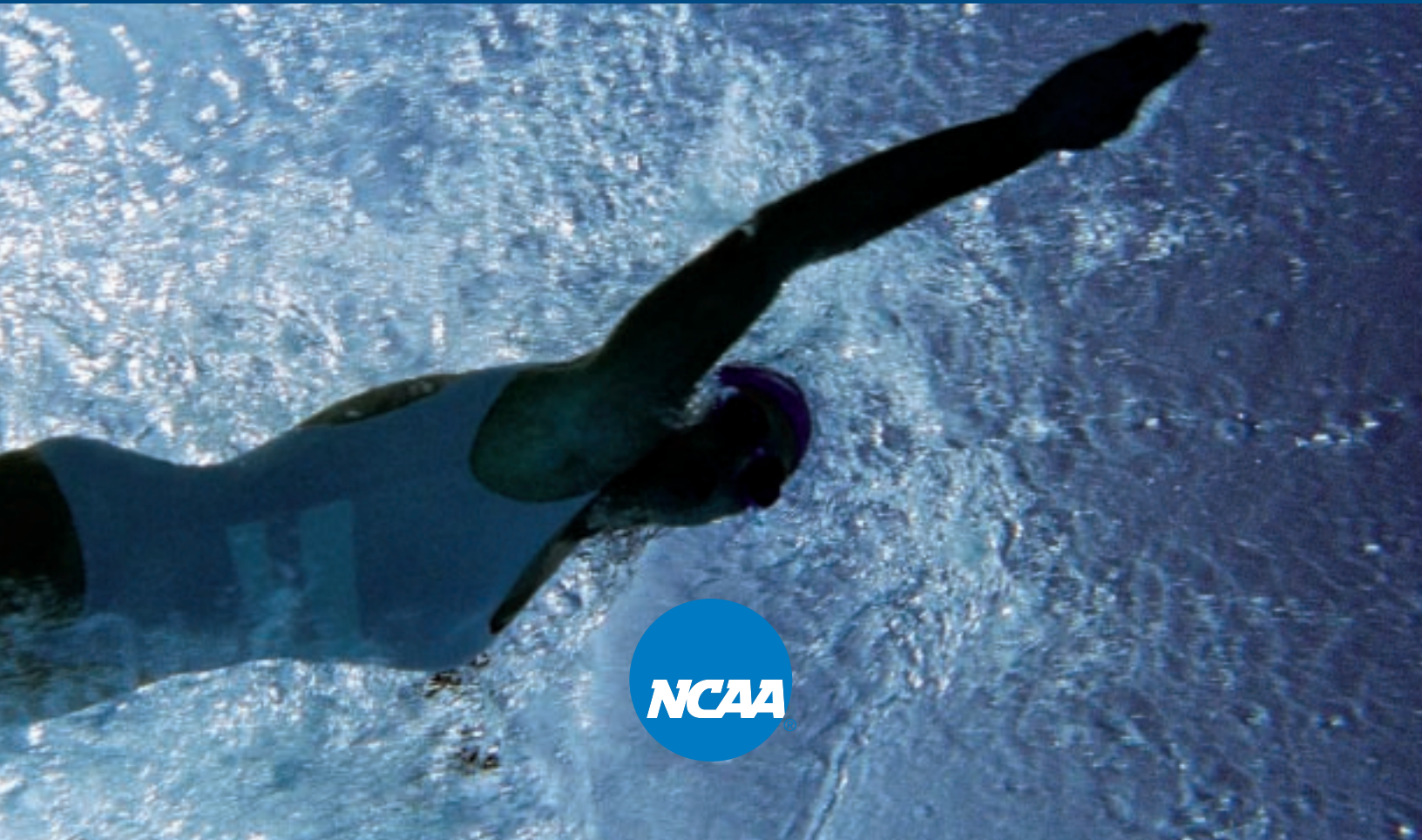


# Managing the Female Athlete Triad



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# Good Nutrition Promotes Health Enhances Performance

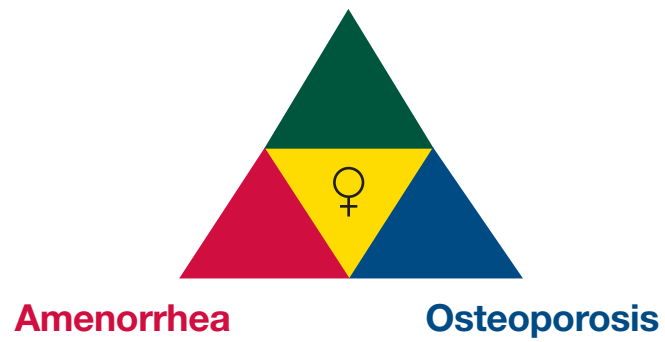
**Managing the Female Athlete Triad**



## Female Athlete Triad

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**Disordered Eating**



## Introduction

This manual resulted from a recent survey of almost 2,900 NCAA coaches of female athletes that looked at how disordered eating and the Female Athlete Triad are identified and managed. Coaches were surveyed because of their importance to, and their influence with, their student-athletes, and the fact that coaches are in an excellent position to play a significant role in identifying and managing affected athletes. On the survey, coaches were also asked what training or information they needed in this regard. Based on the findings of that survey, this manual was proposed.

The purpose of this manual is to provide coaches with strategies to identify, manage and prevent the Female Athlete Triad, which involves the interrelated problems of disordered eating (DE), amenorrhea (loss of menses) and osteoporosis (loss of bone mineral density). The prevalence of the Triad is unknown, but is believed to be high among female athletes due to the prevalence of eating disorders in young women, the high rate of amenorrhea often found in athletes, and the pressures many athletes feel to be thin or lean in order to perform better athletically or conform to an appearance standard associated with their sport. An athlete with signs or symptoms of any component of the Triad should be evaluated regarding the other two.

## Female Athlete Triad Components

### Disordered Eating

“Disordered eating” is a term that includes the full spectrum of abnormal eating behaviors, ranging from simple dieting to clinical eating disorders (American College of Sports Medicine, 1997). The term “disordered eating” is used rather than eating disorders because the athlete’s eating does not have to be disordered to the point of a clinical eating disorder (i.e., anorexia nervosa or bulimia nervosa) in order for the other two components of the Female Athlete Triad — amenorrhea and osteoporosis — to occur.

Disordered eating (DE) can be inadvertent, such as when an athlete mistakenly eats too little to adequately fuel her physical activity and her caloric needs for activities of everyday living. However, the most serious and the most difficult cases to treat involve athletes who are willfully restricting their caloric intake for the purpose of becoming thinner or leaner. “Dieting” or “dietary restriction” is included as DE because **dieting is the primary precursor (forerunner) to eating disorders.**

The precipitants for DE can involve a variety of factors with the most frequent being related to the athlete’s desire to be thin or lean. As a result, DE affects more athletes in sports that emphasize a thin size or shape and/or a low weight, but no

sports are exempt. Sometimes, DE is directly related to the sport, but more often is only indirectly related to sport participation. That is, the individual would probably be just as likely to engage in DE if she were not an athlete.

Disordered eating can play a role in precipitating amenorrhea in the athlete, and amenorrhea in turn can lead to bone loss. Poor nutrition associated with DE can contribute to osteoporosis through inadequate ingestion of calcium and vitamin D.

## Amenorrhea

Amenorrhea is the loss of menstruation. In primary amenorrhea, the individual has not experienced her first menstrual period (menarche) by age 15 when secondary sex characteristics have developed. In secondary amenorrhea, the (postmenarchal) athlete misses three consecutive periods.

Amenorrhea can occur as a result of a variety of pathological conditions (e.g., pituitary tumors, hormonal imbalances), and from eating disorders, pregnancy, and anabolic steroid use, but amenorrhea not due to the aforementioned causes is often attributed to the hypothalamus turning off the reproductive system due to energy drain (Otis & Goldingay, 2000). The prevalence of amenorrhea among athletes tends to be higher than for non-athletes.

Athletes with prolonged amenorrhea are at increased risk for loss of bone mass. Although amenorrhea is the specific condition listed as a component of the Triad, this is not to suggest that other forms of menstrual dysfunction (e.g., oligomenorrhea, luteal phase deficiency, etc.) are unimportant. Any type of menstrual dysfunction should be medically evaluated.

## Osteoporosis

Osteoporosis (porous bone) is a disease characterized by low bone mass and deterioration of bone tissue, resulting in bone fragility and increased risk of fracture (National Osteoporosis Foundation, 2003). Bone growth and health involve the opposing, but balanced, processes of bone building and bone resorption (tearing down).

Estrogen is necessary for the building of bone, but can be unavailable due to amenorrhea. In the absence of estrogen, loss of bone mass occurs because bone growth is decreased

Disordered Eating can affect every aspect of the student-athlete's life, including:

- **Academic,** especially concentration
- **Athletic,** due to malnutrition and dehydration, which lead to insufficient energy stores and muscle weakness
- **Psychological,** especially causing negative moods
- **Social,** leading to withdrawing from others

while resorption continues at a higher rate. At a time when the athlete should be building bone mass, she is losing it.

An amenorrheic athlete can lose five percent of her bone mass in one year. As bone mass decreases, the risk of fractures, especially stress fractures, increases. With a return of more normal estrogen levels, the process of bone building can return, but some of the bone loss may be irreversible. Adequate nutrition is also necessary for bone growth and health, but can be compromised due to DE.

## Health and Nutrition Focus

**The focus in working with the student-athlete who is affected by DE or has other symptoms of the Triad should be more on her health and nutrition, and less on her weight.** This approach has sometimes been criticized by athletes and coaches, who claim that a de-emphasis on weight is apt to result in a decrease in athletic performance. However, athletic performance is like most human behaviors; it is multidimensional and probably determined by multiple factors. Or, as one coach said, “Everything affects performance.”

Leanness may well be one of those factors. Even if it is, is the potential gain (enhanced performance) worth the potential risk that the athlete may face when she is asked to become thinner or leaner? The process that she will engage in (dieting and attempted weight loss) will place her at increased risk for developing DE.

Does this focus imply that the athlete’s weight is unimportant? Does this focus mean that performance is unimportant? The answer to both questions is “No;” it simply means that **nothing is more important than the athlete’s physical and mental health.**

When looking at the most basic factors affecting athletic performance (or probably any type of performance), we must begin with good health. In turn, the greatest contributor to good health is good nutrition. With good nutrition, weight is apt to be less of a problem.

De-emphasizing weight may be difficult for some coaches, especially for coaches in sports that emphasize aesthetics or



appearance, and those that emphasize a thin/lean body size or shape. For this reason, ways to enhance athletic performance that do not focus on weight will be discussed in Chapter 5 of this manual. Also, a brief discussion of how to manage a student-athlete who is believed to be overweight is included in Chapter 2.

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## Summary

**Female Athlete Triad is composed of disordered eating (DE), amenorrhea, and osteoporosis.**

**The triad usually begins with disordered eating.**

**DE occurs in all sports.**

**DE occurs more frequently in sports emphasizing thinness/leanness.**

**DE can negatively affect athletic performance.**

**Amenorrhea in athletes is often due to an imbalance of eating and training.**

**Prolonged amenorrhea can result in loss of bone (osteopenia/osteoporosis), which in turn increases the risk of fractures, especially stress fractures.**

**Good nutrition is a key factor for good health, which is necessary for good athletic performance.**



## Chapter 1: Eating and Weight: Some Considerations

### **Are college female athletes more at risk for disordered eating and eating disorders than non-athletes?**

Yes. These young women athletes experience the same societal pressures to be thin, lose weight, “look good,” etc., as non-athletes. But, they also experience the pressures associated with participating in college athletics. Often this pressure manifests itself in eating disorder symptoms. Does greater risk translate into more problems? Perhaps. There will be fewer problems if the risks for those problems can be decreased or eliminated.

### **Are college athletes more at risk than other athletes?**

Yes, because eating disorders and disordered eating (DE) usually begin or worsen during periods of transition. Other than puberty, leaving home for college will likely be their most important and difficult transition.

### **What is the problem with asking an athlete to lose weight?**

There are several problems; the most important of these is that attempted weight loss (dieting) is the primary precursor (forerunner) to an eating disorder or DE. Attempted weight loss puts the student-athlete at greater risk for developing eating problems. When a coach or other individual involved with an

athlete's sport asks that athlete to lose weight, he/she has virtually no way of knowing if the athlete already has an eating disorder or is at risk for developing such a disorder. Pressure or even a suggestion from a coach to lose weight may significantly increase the individual's risk of developing a disorder or worsen an existing disorder.

### **If a coach shouldn't focus on weight, how can he/she address performance issues?**

There are several factors that affect athletic performance that can be a focus for change, other than body weight and body fat. Some are so basic that they may be overlooked. The first of these is nutrition. Many student-athletes are like many non-athletes with regard to their eating and their beliefs and attitudes about eating and weight. They are overeating, undereating, binge-eating, on unhealthy diets, eating low nutrient-dense foods, and eating on unusual schedules. All athletes should be provided with sound nutritional information.

A second factor is sleep/rest. Many student-athletes are regularly getting fewer than six hours sleep each night. Another factor is substance use (alcohol, prescription drugs, illegal drugs, nicotine, and dietary or "ergogenic" supplements). Such products are not only risky; they may also be on the NCAA's banned substance list.

Finally, there are numerous psychological factors (cognitive and emotional) that can affect performance. A focus on these factors is helpful in two ways. First, **a focus in these areas does not put the athlete at risk.** Second, **these factors can enhance performance by improving physical and psychological health.**

**Coaches have tremendous power and influence with their athletes.**

### **Why is there such an emphasis on coaches?**

Athletes with eating disorders, or who are at risk for such disorders, tend to be very compliant. They will try very hard to do what they think their coaches want in order to please them. Individuals with eating disorders are often willing to risk their health in order to please significant others, including coaches.

Given the power and influence coaches have with their student-athletes, the relationship between the coach and athlete is sometimes an untapped source of assistance to the athlete. Athletes in treatment for DE usually fare better in

treatment with the support and encouragement of their coaches. Relationships, especially with significant others (e.g., coaches), are often stressed in eating disorder treatment. A positive relationship with good communication between coach and athlete can likely have a positive effect on performance.

### **Aren't some athletes driven to diet or try to lose weight without any comment by the coach?**

Yes, and some athletes may use their sport to rationalize or legitimize their DE by saying that they are using their symptoms (i.e., restrictive dieting, pathogenic weight loss methods, excessive exercise, etc.) to become a better athlete or to perform better. As mentioned previously, some individuals are likely to have eating problems even if they were not athletes. Many will bring their DE or eating disorders with them when they come to college.

### **Isn't weight simply a matter of "will power"?**

No. Weight is affected by several factors. The most important factor is probably genetics. Research suggests that genetics can explain at least 60 percent of an individual's weight. Neurobiological factors (i.e., neurotransmitters, hormones, etc.) also affect eating and weight. Psychological factors (i.e., emotions, compulsions, obsessions, etc.) also play a role. Environmental factors (i.e., living situation, availability of food, schedules, etc.) affect eating and weight. Consequently, many factors that help to determine a person's weight may not be under the individual's direct control. "Will power" is still important in eating because healthy eating requires more time, planning and effort, than unhealthy eating.

### **Isn't a gain in weight due to overeating?**

If an athlete's weight has increased, it is easy to assume she is eating too much. Thus, eating appears to be the problem and dieting (losing weight) the solution. In actuality, eating is not usually the **problem**; rather, it is usually a **symptom** of a problem.

It is important to determine what the real problem is. This cannot be determined by having the individual lose weight. The individual's weight most likely changed because her eating changed.

But, why did her eating change? Eating is usually affected by

anxiety and/or depression, and many other factors. Eating is a much more complex process than it appears. Complex problems seldom have simple solutions.

Having the individual try to lose weight without understanding the motives for her unhealthy eating is seldom successful. She will either be unable to lose weight, or she will lose weight and then regain it (and maybe more). A fact about weight loss is that most of the pounds that are lost are usually regained.

### **What if an athlete is believed to be “overweight”?**

Should an athlete be judged to be “overweight” based on an accepted health standard (i.e., body mass index healthy range), or based on a profile of elite athletes in her particular sport? Because weight is a health issue, a health standard should be used.

The profile of elite athletes is descriptive. That is, it describes one of the characteristics of successful athletes. However, it is not necessarily predictive. Having an athlete conform to a particular weight or body fat composition does not ensure performance enhancement. Another problem with a profile is that it is not known how athletes in that profile ate. Were they “normal eaters,” “healthy eaters,” or “restrained eaters?” Were any of these athletes eating disordered?

**The only objective way to know if the student-athlete is overweight is to have her evaluated by a health-care professional** (i.e., physician, nurse, etc.). Because weight is a medical issue, health-care professionals should handle it.

Coaches with concerns about an athlete’s weight can communicate their concerns to their athletic trainer or another health-care professional who works with their student-athletes. This individual can then approach the athlete about a possible referral in this regard, while keeping in mind that weight can be a very sensitive issue for many young women. (See Chapter 3 for more information on approaching an athlete regarding an eating problem.)

If a medical evaluation determines that an athlete is, in fact, overweight due to true overeating, the athlete should be evaluated by a mental health practitioner to determine and eliminate sources of dysfunctional (non-hunger) eating. The athlete should also be seen by a dietitian to improve nutritional knowledge and intake.

Ideally, these health-care professionals would be experienced in working with eating problems and athletes, and thus, should be able to assess the potential risk (i.e., disordered eating) to the athlete if she were to attempt to change her eating. Also, the entire process is made easier if the athlete agrees with the evaluation and the decision to address her eating.

### **Are there other related issues that should be talked about with our athletes?**

It is always appropriate to talk about taking good care of one's health (i.e., eating healthfully, getting plenty of sleep/rest, and improving mental focus). This could include having a dietitian or sport nutritionist speak to the team at the beginning of each season regarding nutritional needs for good health and performance — academic as well as athletic.

**Our goal should be healthy, well-adjusted athletes. In general, healthy, well-adjusted student-athletes will outperform those who are not.**

**Basic elements affecting athletic performance are:**

- **Nutrition**
- **Sleep/Rest**
- **Substance Use**
- **Psychological Health**





## Chapter 2: Coaches' Role in Identification of the Female Athlete Triad

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### Identification of Disordered Eating (DE)

Coaches are in an ideal position to identify “at-risk” or symptomatic student-athletes because they spend so much time with their athletes and have opportunities to observe them in many circumstances, including team meetings, practices, competitions and road trips. Additionally, they often have medical information and academic information, and information about the athlete’s family and other important relationships. With this much knowledge about the student-athlete’s life, the coach can be one of the first to notice when an athlete is having a problem.

### Challenges in Identification

Even though coaches are in an ideal situation to identify affected athletes, several issues or beliefs that are common in the sport environment make identification of affected athletes challenging. These issues include:

**Sport body stereotypes.** These stereotypes occur in many sports and involve a body size or shape that is characteristic

of the sport. For example, basketball players are usually tall, whereas gymnasts are small, and distance runners are thin.

**The athletes who are most at risk for DE based on stereotypes are those who participate in sports that recommend, emphasize, or demand a thin body size and shape.** This risk is related to the fact that dieting (dietary restriction) is often required to attain and/or maintain thinness, and dieting is the primary precursor (forerunner) for DE/eating disorders.

The stereotype of thinness makes it easier for an athlete with an eating problem to become “less visible” within her sport. That is, problems related to thinness or weight loss are less apt to be noticed by sport personnel because the athlete’s thinness is consistent with the body stereotype characteristic of her sport. In fact, the athlete who goes against the stereotype (is heavier) is much more apt to be noticed and referred for treatment.

Unfortunately, when identification of an eating problem is delayed, treatment is delayed, thereby putting the athlete at more risk for medical and psychological complications.

**Purported relationship between leanness and performance.** For several years now, a prevailing notion in the sport world has involved the relationship between reduced body weight/body fat and enhanced athletic performance. This concept was discussed in the first chapter and will not be recounted here. Suffice it to say that a belief by sport personnel that thinness/leanness can enhance performance can make it more difficult to see dieting and weight loss as behaviors to avoid. In fact, these behaviors may be valued and even rewarded by sport personnel.

**Similarity of “good athlete” traits and DE symptoms.** In the previous paragraph, it was suggested that sport personnel might view dieting and weight loss positively. Dieting and weight loss are actually two symptoms associated with DE and eating disorders. They might be viewed, however, in the sport environment as an athlete working hard to perform better.

There are actually several traits that are often associated with good athletes that are also characteristic of people with eating disorders. Many, if not most, eating disorder patients are

perfectionists. In the good athlete, the drive for excellence is reminiscent of the non-athlete patient's need to be perfect. This athlete would not likely be satisfied with her performance no matter how good it might be. Is this a trait of a good athlete, or a symptom of a disorder? Or, is it both?

Eating disorder patients, especially those with anorexia nervosa, usually exercise excessively. Good athletes train hard, perhaps harder and longer than their teammates. Again, these athletes may be simply working hard or may have a problem. Eating disorder patients work hard to please significant people around them. In fact, most will do anything to please significant people (including coaches) in their lives, even to the point of sacrificing their own health and happiness.

Instead of being selfish and focusing on themselves, they tend to be selfless. They might be what a coach would consider the consummate "team player." They are very compliant in that they will do virtually whatever the coach tells them to do. This type of athlete would be referred to as very "coachable."

The point here is that what looks like a good athlete may also be a person with a serious eating problem, thus creating difficulty for the coach in terms of identification.

### **Presumption of health based on good performance.**

Many athletes with serious eating problems can perform well athletically, sometimes for long periods of time. Eventually, the disorder will begin to affect the physical and psychological well-being of the athlete in such a way that performance will decrease. However, until that happens, it is sometimes difficult for a coach to see an athlete who is performing well as having a serious problem. Again, any issue that delays identification also delays treatment, thereby putting the athlete at greater risk physically and psychologically.

## **Disordered Eating (DE): Signs and Symptoms**

**Caution:** The fact that an athlete displays some of the characteristics listed below does not confirm that the athlete is engaging in DE or has an eating disorder. However, the likelihood increases as more signs and symptoms are evident. Also note that this list does not include all possible symptoms, but rather the most common ones.

### **Physical/Medical Signs and Symptoms**

1. Amenorrhea
2. Dehydration
3. Gastrointestinal Problems
4. Hypothermia (cold intolerance)
5. Stress Fractures (and overuse injuries)
6. Significant Weight Loss
7. Muscle Cramps, Weakness or Fatigue
8. Dental and Gum Problems

### **Psychological/Behavioral Signs and Symptoms**

1. Anxiety and/or Depression
2. Claims of “Feeling Fat” Despite Being Thin
3. Excessive Exercise
4. Excessive Use of Restroom
5. Unfocused, Difficulty Concentrating
6. Preoccupation with Weight and Eating
7. Avoidance of Eating and Eating Situations
8. Use of Laxatives, Diet Pills, etc.

## Identification of Amenorrhea

Amenorrhea is so common among female athletes that sport personnel and athletes sometimes think of it as “normal” in the sport environment. Although amenorrhea may be the “norm,” it is not “normal.” Rather, it is a medical condition in need of treatment.

Because amenorrhea is viewed as “normal,” and for a variety of other reasons, the athlete is not apt to report it. Identification of the problem can be further complicated by sport personnel, especially males, who may be hesitant to ask the athlete about her menstrual cycle.

Certainly, the coach does not have to be the person who monitors, or directly communicates with, the athlete regarding her menstrual status. For a variety of reasons, it is better to have someone directly involved with the athlete’s health (team physician, athletic department nurse, athletic trainer) take this responsibility. Obviously, **early identification means early treatment, thereby reducing the risk to the athlete.**

**What to do:** A designated health-care professional should meet with the team at the beginning of each season to inform student-athletes about the importance of healthy menstrual functioning and how, and to whom, they should report any irregularities. This would be a communication to the athletes that their reproductive health is important and that assistance is available when needed.

Any athlete who has been without a menstrual period for three months should be referred to a physician for an evaluation. Amenorrhea related to sport participation can often be reversed with an increase in caloric intake and/or a decrease in physical activity. Some athletes may need hormone replacement therapy.

The athlete’s response to recommendations regarding eating, training and medication will vary; the difficulty the athlete has in complying with these recommendations usually increases with the severity of the DE. Many athletes will need to be treated by a specialist who deals with eating disorders.

## Actions

- **Monitor athletes’ menstrual cycles**
- **Educate team about healthy menstrual function**
- **Refer student-athletes with amenorrhea to physician**

Any athlete who has been without a menstrual period for three months should be referred to a physician for an evaluation.

## Identification of Osteoporosis

Osteoporosis (porous bones) can result from amenorrhea. Usually, the amount of bone loss increases with the duration of the amenorrhea and may, in part, be irreversible. DE can play a role in bone loss in that athletes who are restricting dietary intake often restrict ingestion of calcium-rich dairy products, the very food source they need to help build bone.

Training and eating regimens need to be changed to restore menstruation. These typically involve an increase in caloric intake and a decrease in physical activity. Until menstruation occurs, amenorrheic athletes need to be ingesting a minimum of 1,500 milligrams of calcium daily. For those athletes who do not respond to nonpharmacologic treatments (i.e., improved nutrition, decreased physical activity), pharmacologic treatments are available.

When a health-care professional encounters any one of the components of the Triad, it is imperative that he/she evaluates the athlete for the others.

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## Summary

**Coaches are in a good position to identify DE.**

**Identification is complicated by sport body stereotypes, similarity of DE traits and traits of “good athletes,” belief that leanness enhances performance, and presumption of health with good performance.**

**Coaches need to be aware of physical/medical and psychological/behavioral signs and symptoms of DE.**

**The presence of any Triad symptom indicates a need to assess for the others.**

**DE usually starts the Triad.**

**Amenorrhea is common in athletes but is not normal; it should be treated. Menstruation must be restored through an increase in eating and/or a decrease in training.**

**Bone loss can result from amenorrhea and can be worsened by DE.**





## Chapter 3: Management of Disordered Eating (DE) and the Triad

### Making a Referral

When a coach has directly (i.e., via observation) or indirectly (i.e., received from sport personnel or by team members) obtained information regarding possible DE by a student-athlete, the athlete in question must be approached. This is perhaps the most important step in the management process.

**Who should talk with the athlete?** Although the coach is probably ultimately responsible for having someone talk with the athlete, that does not mean that the conversation has to be initiated by the coach. It should be done by an individual with some authority, but more importantly by someone who has a good relationship with the athlete or has an easy manner of relating. This could be the coach, assistant coach, athletic trainer, athletic department nurse, team physician or team dietitian.

**How the student-athlete is approached** is usually more important than **who** approaches her. It is of the utmost importance that she feels a minimum of discomfort when approached. What she needs to feel is caring and concern, not criticism. Not only does this minimize her discomfort, but it also increases the likelihood of a positive outcome.

The designated person should approach the athlete **privately**, again to minimize discomfort and embarrassment. The athlete should be told that individuals associated with her sport are concerned about her and her **health**. Specific questions or statements about eating or weight may be interpreted as too threatening, and they can be too easily fended off.

The student-athlete should be told that an evaluation with a health-care specialist will be arranged. In the event that she should disagree or protest, she should be told that she is considered to be **injured** and needs to be evaluated before continuing with training or competition.

In the unlikely event that she refuses to be evaluated, she should again be informed that she is considered to be **injured** until an evaluation determines otherwise. Training and competition should be prohibited until she agrees to an evaluation.

Although this tactic may seem harsh and punishing, it is probably the same procedure that is followed for other injured athletes.

**The athlete should be told that being withheld from training and competition is not a punishment, but rather is standard policy for managing an injury. More importantly, it lets the athlete know how important her health is.**

**Making referrals.** It is always preferable to have a specialist in DE/eating disorders as the referral source. (A list of referral sources will be provided in Chapter 6 of this manual.) Ideally, this health-care professional should also have experience with, and an appreciation for, sport and the importance of sport in the athlete's life.

For a variety of reasons, referrals are often made to the counseling center on many campuses. Often there is a designated person at the counseling center who sees many of the students with such disorders.

Whenever possible, it's best to know the referral person. Therefore, the person who met with the athlete may need to take the time to contact the center and arrange to meet the

counselor. The athlete should then be given the health-care professional's name and a brief explanation of the person's experience and expertise. Positive referrals to specific health-care professionals usually work better.

## **Sport Participation and Symptomatic Athletes**

Once the student-athlete has been evaluated regarding DE, decisions about her returning to training and competition need to be made.

### **Conditions under which the symptomatic athlete should NOT be allowed to train or compete:**

1. The athlete has a medical condition that precludes sport participation.
2. The athlete meets diagnostic criteria for anorexia nervosa (weight less than 85 percent of recommended standards, fear of gaining weight, body image disturbance, and amenorrhea).
3. Training or sport participation plays an integral role (is used in an unhealthy way) in the disordered eating.

### **Conditions under which the symptomatic athlete MIGHT be allowed to train and compete:**

1. The athlete has DE, and perhaps bulimia nervosa, but does not meet the criteria reported in the previous list.
2. The athlete has been evaluated both medically and psychologically by health-care providers and found not to be at additional risk by training or competing.
3. The athlete is in treatment and is progressing.
4. The athlete agrees to, and complies with, a list of health-maintenance criteria. These include, but are not limited to, compliance with all treatment appointments and recommendations. Of particular importance are recommendations regarding eating and weight. It is imperative that the athlete's energy expenditure be accompanied by an adjustment in caloric intake to maintain therapeutic goals regarding weight gain/maintenance.

Decisions regarding sport participation while the student-athlete is symptomatic should be made on a tentative basis.

### **Actions**

- **Approach athlete privately**
- **Identify health concern**
- **Refer to health-care professional**

They can be rescinded at any time due to the athlete's inability or unwillingness to comply with treatment recommendations and health-maintenance criteria. Sport participation can be reinstated when the athlete is judged to be ready by her treatment team. Although these conditions may seem somewhat strict or harsh, they are in place primarily to protect the athlete. Additionally, withholding sport participation can also be an effective way to motivate the athlete in treatment.

Some individuals with eating disorders are at such risk medically and psychologically that they require more intensive treatment, such as inpatient or residential treatment.

## Effects of an Athlete's Disordered Eating (DE) on Teammates

**DE of an athlete upsetting teammates.** Sometimes just being around an athlete who is engaging in DE can be upsetting to team members. This is especially the case when the athlete is clearly anorexic (underweight and eating very little) or when she is vomiting frequently. Some teammates may become agitated or even angry under these conditions. This agitation or anger can distract teammates to the point of affecting their athletic performance.

**What to do:** Probably the best way to handle this type of situation would be for the coach or designate (assistant coach, athletic trainer, etc.) to **talk with the agitated teammate.** Try to reassure her that everything possible will be done to remedy the situation. If the athlete appears to be having a particularly difficult time or does not appear to be able to handle the situation, refer her to a counselor/therapist. As with the athlete with DE, this referral needs to be made privately and with considerable care.

### **Teammate who becomes too involved in trying to help.**

This situation is the opposite of the previous one in which the teammate is angered by the athlete with DE. Many athletes may be appropriately concerned about their teammate with DE, and are able to support and help the individual in ways that are not harmful to themselves. However, some athletes may get too involved and begin to take too much responsibility for a teammate with DE.

**What to do:** When identified, these individuals should be **reassured by the coach** or designate that their concern is appreciated, and that they can be assured that their teammate will receive the professional help that she needs. Teammates who, for whatever reasons, are unable to set appropriate limits in this regard (cannot seem to relinquish their sense of responsibility) should be referred to a counselor/therapist. As always, this referral should be made privately and carefully.

**Behavioral contagion.** With teammates spending so much time together at practice, meetings, competitions, classes and road trips, they have ample opportunity to be affected by the symptomatic athlete. Sometimes this will lead to other athletes questioning their own eating habits or weight. Or, they may see their symptomatic teammate perform well despite her DE. Some athletes may even assume that she is performing well because of DE symptoms, such as restrictive dieting, weight loss or excessive exercise. They may be tempted to engage in such behaviors.

In a variation of behavioral contagion, a competition between teammates may occur related to thinness. This can be the competitive thinness that is characteristic of many non-athletes in this age group that simply involves competing with other young women to lose weight. However, it may also involve sport participation, since an athlete may be comparing her body size, shape or weight to that of a teammate who may be performing better. Regardless of the motivation, the athlete may resort to unhealthy means to lose weight.

**What to do:** Probably the best way to handle the aforementioned situations is to have an appropriate **health-care professional** (preferably one who has experience and expertise treating athletes with eating disorders) **meet with the team.** The meeting would not be to focus on any particular individual; in fact, the professional would indicate that the meeting was not to focus on any individual's behavior, but rather to answer general questions regarding eating and weight issues, and to provide information of a psycho-educational nature. The team would be given information as to the risks associated with the unhealthy behaviors being practiced by some team members. Team members would be encouraged to contact the professional with any questions they may have at a later time. Additionally, team members also could contact the individual regarding possible treatment.

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## Summary

**One of the most important steps in managing the student-athlete with DE is the initial contact.**

**The person who makes the initial contact should be a person in authority who has a good relationship with the athlete or has a good way of relating.**

**The athlete should be approached privately and non-critically.**

**Referrals should be made to a specific health-care specialist knowledgeable about the treatment of persons with eating disorders.**

**Student-athletes who are not allowed to train and compete while symptomatic should include: those with a serious medical condition; those with a diagnosis of anorexia nervosa; and those for whom sport participation plays an integral role in their disorder.**



## Chapter 4: Treatment Issues

DE, amenorrhea and osteoporosis are like most other problems; early identification and treatment not only ease and shorten the treatment process, but they also protect the athlete from more serious health consequences resulting from a problem becoming chronic (prolonged, more serious and more complicated).

### **Disordered Eating**

DE can be treated effectively by health-care providers who have expertise and experience with such problems (especially in athletes). If identified early, most cases of DE can be treated on an outpatient basis. Outpatient treatment can be infrequent (once per week) or it could be intensive (multiple times per week).

For some cases, however, the individual may be at considerable risk medically and/or psychologically, or the athlete's symptoms may be so out of control, that inpatient or residential (longer term, live-in) treatment may be required. Treatment could last for weeks, months or years, depending on the nature and severity of the symptoms.

The most effective treatment is multidimensional; that is, it deals with most, if not all, aspects of the problem — cognitive, behavioral, emotional and nutritional. Effective treatment will



also address other psychological problems, such as depression or anxiety.

Recovery without treatment is unlikely.

**Symptomatic athletes must be in treatment.** Recovery without treatment is unlikely. Without treatment, the student-athlete is apt to become isolated from the team, not only resulting in less support, but also making her DE more difficult to monitor. She will likely deteriorate physically and psychologically at some point, and as a consequence, her performance will decrease. Her poorer performance is apt to increase pressure on her, as she often defines and identifies herself by her athletic performance. She also worries that her coaches, teammates, family and friends will be disappointed. The increased pressure leads to a greater need for her symptoms, as DE is a way to deal with pressures in her life.

**Common concerns of coaches about treatment.** A common concern of coaches about an athlete going into treatment is that the athlete's time in treatment will take her away from her sport, and that she will be changed in ways that will negatively affect her athletic performance. In actuality, **when the athlete is well, she should be able to use her time more efficiently and perform better.** Her DE not only affects her negatively through malnutrition, muscle weakness and dehydration, it also negatively affects her psychologically by increasing depression and anxiety, and decreasing concentration.

**Confidentiality.** Probably the biggest concern coaches have about treatment is that the health-care professionals providing treatment are not at liberty to talk with them about the student-athlete's condition. Coaches sometimes feel as though they are being kept out of the process.

Treatment providers, especially those who are working with the mental-health aspects of the athlete's treatment, are legally and ethically bound to keep her treatment information confidential.

**Confidentiality is the cornerstone or foundation of successful treatment.** To a coach who is concerned about his or her athlete, it may feel more like a stumbling block.

Confidentiality is designed to allow the patient to feel open about discussing private, and sometimes disturbing, information. Treatment providers can release this information to others (e.g., family, friends and coaches) only with the patient's written consent and only to those who have a need to know.

When these professionals do not provide the coach (or anyone else) with information about the athlete, it is either because they do not have permission to do so, or it has been determined not to be in the patient's (athlete's) best interest.

In many cases, athletes are willing to grant this permission for at least some exchange of information with their coach. However, **coaches should never pressure the athlete** to do so. Coaches should simply express their concern and support for the athlete and her treatment. If she feels support and concern from her coach, she may inform him/her about her treatment. Finally, even if health-care professionals cannot talk to others, they can choose to listen to any information or concerns a coach may wish to share with them about an athlete.

**Why treatment cannot become subordinate to sport participation.** For the student-athlete, it should be made clear that academics must not be sacrificed for athletics, and that guidelines are in place that communicate the proper relationship between academics and athletics. Guidelines and communications for the athlete with DE should be just as clear. Treatment must always remain primary to sport participation. If treatment is sacrificed (i.e., missed appointments, altered dietary and physical activity guidelines, treatment recommendations ignored, etc.) for the purpose of sport participation, it is a communication to the athlete that her sport participation is more important than her health.

## Amenorrhea

Amenorrhea, and other forms of menstrual dysfunction, can affect the athlete not only while she is competing, but also later in life. Amenorrhea can result from a variety of pathologic conditions unrelated to sport or exercise, which need to be ruled out before menstrual dysfunction is determined to be related to sport participation.

Most cases of menstrual dysfunction in athletes are now believed to be related to "insufficient energy availability." When this condition occurs, the hypothalamus shuts down the reproductive system and reduces the level of estrogen. The goal of treatment for menstrual irregularity is the return of adequate hormonal levels.

Menstruation can often return with an increase in caloric intake, a decrease in training, or both. Sometimes this change results in weight gain, which may also be helpful to the athlete in regulating her menstrual period. If the athlete has an eating disorder or engages in DE, she may be less compliant with making the recommended changes that are necessary to produce therapeutic change. If she is unable or unwilling to follow nutritional recommendations, she should be referred for a formal evaluation, ideally by an eating disorder specialist.

The **NCAA Sports Medicine Handbook** has guidelines for the appropriate handling of menstrual-cycle dysfunction. A history of each student-athlete's menstrual functioning should be documented at the beginning of the academic year. This not only provides a baseline for current and future functioning, but also provides information regarding previous problems and their possible role in future difficulties. Additionally, this type of assessment communicates to the athlete that her reproductive health is important, and for that reason, will be monitored and treated when necessary.

## **Osteoporosis**

Anytime one component of the Triad is present, the others should be assessed. Unfortunately, bone problems may be the first symptom reported or identified. If frequent fractures, especially stress fractures, are present, the student-athlete should not only be assessed for bone loss, but also for menstrual dysfunction and DE. The bone mineral density test (e.g., DXA scan) assesses for bone loss (osteopenia or osteoporosis).

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## Summary

**Athletes with DE must be in treatment to recover; the physical and psychological states of the athlete, athletic performance, and related symptoms will worsen without treatment.**

**Common concerns of coaches about treatment of DE:**

- **Athlete will change in ways that decrease athletic performance;**
- **She will be taken away from her sport; and**
- **The coach will not receive information about her progress in treatment due to confidentiality (ethical issues regarding the release of private information).**

**Treatment cannot become subordinate to sport participation because it communicates to the athlete that her performance is more important than her health.**

**Treatment of amenorrhea and osteoporosis is important because it involves the athlete's current and future reproductive and bone health.**

**Treatment of amenorrhea involves restoring normal levels of estrogen, which ideally will be accomplished by restoring normal menstruation through an increase in caloric intake, a decrease in training, or both.**

**The presence of any component of the Female Athlete Triad indicates the need to assess/treat the other two.**

**The presence of amenorrhea and/or stress fractures can indicate the need for assessment of bone loss.**



## Chapter 5: Education and Prevention

There are numerous risk factors that increase the probability of disordered eating (DE) in a female athlete that have little or nothing to do with sport or sport participation. These include sociocultural factors (i.e., pressures to diet and be thin), familial factors (i.e., unhealthy attitudes about eating, weight and appearance), psychological factors (i.e., personality, anxiety or mood disorders) and genetic factors (i.e., predisposition to depression and eating disorders), that athletes bring with them to their sport. Although sport and sport participation do not cause DE, there are aspects of the sport environment that actually increase the risk of DE and the Female Athlete Triad for many athletes.

### Risks for DE and the Triad in the Sport Environment

Because dieting (attempted weight loss) is the primary precursor (forerunner) for DE, any situation or issue that might encourage weight/body fat loss must be considered to be a risk factor. In Chapter 2, difficulties with identifying DE were discussed. One of the primary risks for the athlete is difficulty in identification. In that regard, issues that were reviewed included the [belief that a decrease in body weight or body fat enhances](#)

performance; sport body stereotypes; the similarity of good athlete traits and eating disorder symptoms; and the presumption of health based on good performance. Those subjects will not be recounted here, but other issues that increase the risk to athletes, in addition to identification difficulty, include:

**Revealing uniforms or sport attire.** If a student-athlete feels uncomfortable about her body (as many young women in this age group often do), she may feel “exposed” in a uniform that reveals too much of it. This discomfort can lead the athlete to attempt weight/body fat loss, increasing her risk for DE.

**Competitive thinness.** Many college-age women engage in “competitive thinness.” They are tempted to try to lose weight when encountering others who they believe to be thinner. This body competitiveness is accomplished through body comparisons. These comparisons are made easier by revealing uniforms. Also, athletes by nature are competitive, and this competitiveness can involve body comparisons not only related to thinness, but also to sport participation.

If an athlete notices that a competitor who has beaten her looks thinner/leaner, she may use the possibility of performance enhancement to diet. “Behavioral contagion” (the spreading of DE symptoms among teammates) is often related to competitive thinness. If an athlete believes that her teammate that is involved in DE looks better or performs better, she may assume that the same DE symptoms would be “helpful” to her.

**Pressures associated with sport.** DE is often used by the individual to deal with pressures in her life. The added pressure the athlete may feel from participating in collegiate athletics may increase her need for the DE symptoms.

## Prevention: Strategies for Coaches to Reduce Risks in the Athletic Environment

### 1. De-emphasize weight.

With dieting being the primary precursor to DE, any emphasis on weight or thinness/leanness will likely increase the risk of DE. Conversely, a de-emphasis will decrease the risk. The most important thing coaches can do is not to emphasize



weight. This may be difficult due to how the coach previously thought about weight/body fat and performance, especially if the sport is considered a “thin” sport.

Remember, coaches have considerable power and influence with their student-athletes. An example of this power and the athlete’s need to please (fear of displeasing) is illustrated by an athlete in treatment for DE who said, “I hope Coach doesn’t think I’m fat.”

Student-athletes have also suggested that their difficulties occur when coaches compare their bodies and performance to that of their teammates, and that this is particularly troublesome when the other athlete has an eating disorder. This kind of dialogue can trigger DE and competitive thinness in some athletes.

One coach suggested that these athletes are being “too sensitive.” However, young women tend to be very sensitive about their weight and their bodies. For this reason, coaches have to be careful regarding weight and body issues. By not triggering anxiety, body concerns and DE in the athlete, coaches allow the athlete to be healthier, worry less and most likely, perform better. (Some coaches ask, “But what if she is overweight?” This is a good question. Refer to Chapter 1 for the answer.)

**Enhancing performance without a focus on weight.** Most people in the sport world would agree that sport performance is determined by many factors. Obviously, the physical attributes (i.e., speed, quickness, endurance, strength, agility, coordination, etc.) of the athlete establish the ceiling for athletic performance. They determine the athlete’s physical potential. An athlete will not be able to exceed her potential.

But as one well-known coach once said, “A guy with potential is a guy who hasn’t done anything yet.” The real question is how to get the athlete to realize or maximize her potential. Coaches often tell their athletes to “focus,” “think,” “concentrate,” “play with emotion,” and “give 110 percent.” When coaches say these things, they are referring to the mental and emotional parts of the athlete. **Although the physical attributes of the athlete establish the ceiling on performance, the mental and emotional skills of the athlete determine how close she comes to reaching that**

## Actions

- De-emphasize weight
- Recognize individual differences that enhance performance
- Educate student-athletes and staff

**potential.** Not only do many athletes not know how to use these skills, many unknowingly use them in negative ways (i.e., choke under pressure, lose focus, make poor decisions, etc.).

With the **proper instruction, training and practice**, athletes can learn to use their thoughts and emotions to enhance their training and competition. Some of these skills might involve the use of imagery, positive self-talk, goal-setting, mental preparation and relaxation training. These skills can be used to increase or improve motivation, concentration, confidence, preparation for competition, and building team cohesion. Not only can student-athletes use these skills for enhancement in the world of sport, they can also use them as tools for success in the larger world. Most importantly, these skills do not place the athlete at risk, as a focus on weight is apt to do. In fact, these skills tend to enhance physical and psychological health.

Just as coaches are not expected to treat their athletes who are diagnosed with DE, amenorrhea or osteoporosis, they also should not be expected to teach the aforementioned mental skills to their athletes. In the final chapter (Resources) of this manual, recommended reading and referral sources for sports psychologists are provided.

Finally, as previously noted, **a focus on weight** (and certainly DE) **can create considerable mental and emotional turmoil for the athlete.** This turmoil is often so great that it more than offsets any potential performance enhancement that might be achieved through a reduction in body weight or fat.

## **2. Recognize individual differences in athletes.**

All individuals are different and must be managed differently. The use of profiles of elite athletes regarding recommended weight or body composition is apt to be unhelpful and possibly risky. These profiles are “descriptive;” they are not “predictive.” Additionally, it is not known how the athletes making up the profile ate. They may have engaged in DE or had eating disorders.

Several factors determine weight and body size/shape (i.e., genetics, eating/weight history, social learning, etc.), and these are different with every athlete. By focusing on the athlete’s individual differences, the likelihood of enhanced performance for each athlete can be increased.

### 3. Education.

Coaches, other sport personnel and student-athletes, need to be aware of the factors that put athletes at risk for DE and the Female Athlete Triad. **Awareness is the first step in changing any behavior.** This can be accomplished through education. Support by coaches for this education is imperative.

Another way to prevent DE and the Triad is through education. Information should be made available to coaches, athletes, athletic trainers and other sport personnel who are involved in taking care of the athlete. Coaches should acquire information on DE and eating disorders, nutrition, the Female Athlete Triad, and ways to enhance performance without focusing on weight and body composition. Sources from which such information is available are listed in Chapter 6.

A coach also can be instrumental in providing student-athletes and staff with the information they need to decrease the risk of DE and the Triad. As discussed previously, coaches have tremendous power and influence with their athletes. Without coaches' encouragement and support, athletes are less apt to obtain the information they need. Consequently, coaches need to know what to recommend to athletes. A coach's own education will assist in helping athletes find what they need.

Some of the information athletes find on the Internet may actually be harmful, and may contribute to DE and poor health. It is imperative that reputable and reliable sources for quality information be provided. Again, those sources are listed in the next chapter.

### 4. Involvement by Sport Governing Bodies.

Without support by sport governing bodies, the changes that are necessary for reducing risks of DE to athletes are unlikely to occur. The NCAA is committed to reducing the risk to athletes, as evidenced by this manual.

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## Summary

**There are risks for DE and the Female Athlete Triad in the sport environment, in addition to those from outside sport.**

**Coaches can play an integral role in preventing DE and the Triad.**

**Most importantly, coaches can reduce the risk of DE and the Triad by de-emphasizing weight.**

**Coaches can reduce the risk by obtaining education on DE and eating disorders, nutrition, the Triad, and ways to enhance performance without involving a weight focus (i.e., mental skills training).**

**Coaches can help reduce the risk by seeing that their athletes and staff are provided with the education they need.**



## Chapter 6: Resources

In the previous chapters of this manual, several issues related to disordered eating (DE) and the Female Athlete Triad were discussed. In this chapter, Web sites and recommended reading and materials where coaches can find additional information on most of those issues are provided. Referral information regarding appropriate health-care professionals is also provided.

It was recommended that weight or body fat reduction not be emphasized as means to improved performance. Such reduction attempts usually require dieting, which puts the athlete at risk for DE. In this chapter, sources with information regarding performance enhancement without an emphasis on weight or body fat also are listed.

## Web Sites

### **Academy for Eating Disorders (AED):**

[www.aedweb.org](http://www.aedweb.org)

This Web site provides the most current and well-researched information on eating disorders. It also provides referral information on health-care providers who specialize in the treatment of eating disorders. There is a link to the AED's Special Interest Group on Athletes for more information.

### **American College of Sports Medicine (ACSM):**

[www.acsm.org](http://www.acsm.org)

Use this Web site to link to ACSM's Position Papers on The Female Athlete Triad, Nutrition and Athletic Performance, and Exercise and Fluid Replacement.

### **American Dietetic Association (ADA):**

[www.eatright.org](http://www.eatright.org)

This site contains the most reliable and well-documented information on food and nutrition. Use links on this site to find a nutrition professional and to the ADA Position Paper on Nutrition and Athletic Performance.

### **Association for the Advancement of Applied Sport Psychology (AAASP):**

[www.aaasponline.org](http://www.aaasponline.org)

A general goal of AAASP members is to teach athletes the mental skills (i.e., concentration, imagery, relaxation, etc.) necessary to enhance athletic performance. Use this site to find a Certified Consultant to assist with the performance enhancement needs of athletes.

### **Bloomington Center for Counseling and Human Development:**

[www.bloomington-eating-disorders.com](http://www.bloomington-eating-disorders.com)

This is the Web site for the authors of this manual, Ron A. Thompson, Ph.D., FAED, and Roberta Sherman, Ph.D., FAED. Use this Web site for questions, comments, consults and referral recommendations.

### **Female Athlete Triad:**

[www.femaleathletetriad.org](http://www.femaleathletetriad.org)

This is the official Web site of the Female Athlete Triad Coalition. This site provides information regarding identification, management, treatment and prevention of the Triad.

**Gürze Books:**

[www.bulimia.com](http://www.bulimia.com)

Gürze Books specializes in books and materials related to anorexia nervosa, bulimia nervosa and binge eating disorder, plus related topics such as body image and obesity. It also provides links to eating disorder organizations and treatment facilities.

**International Olympic Committee Position Stand on the Female Athlete Triad:**

[multimedia.olympic.org/pdf/en\\_report\\_917.pdf](http://multimedia.olympic.org/pdf/en_report_917.pdf)

This Web site contains the 2005 Position Stand on the Female Athlete Triad as put forward by the IOC Medical Commission's Working Group on "Women in Sport." The position stand contains the research related to DE, amenorrhea and osteoporosis, and recommendations regarding treatment and prevention of the Triad.

**IOC Medical Commission—Source of Triad Position:**

[www.olympic.org/uk/organisation/commissions/medical/index\\_uk.asp](http://www.olympic.org/uk/organisation/commissions/medical/index_uk.asp)

**National Association of Anorexia Nervosa and Associated Disorders (ANAD):**

[www.anad.org](http://www.anad.org)

ANAD provides hotline counseling, a national network of free support groups, referrals to health-care professionals and education and prevention programs on eating disorders for patients and their families.

**National Collegiate Athletic Association (NCAA) Web site on Nutrition and Performance:**

[www.ncaa.org/nutritionandperformance](http://www.ncaa.org/nutritionandperformance)

This Web site promotes a healthy and safe environment for student-athletes regarding optimal nutrition, positive body image and peak performance through education and awareness. It provides specific information to student-athletes, athletics administrators, athletic trainers, parents and coaches. The information provided to coaches includes basic nutrition when on the road, nutrition facts, and pre- and postgame meals. Additionally, coaches are given issues to consider in creating a positive, competitive environment regarding nutrition, body image and performance.



**National Eating Disorders Association (NEDA):**

[www.nationaleatingdisorders.org](http://www.nationaleatingdisorders.org)

NEDA provides a toll-free helpline to provide support services, guidance and referrals to health-care professionals, to individuals with DE and their families.

**National Osteoporosis Foundation:**

[www.nof.org](http://www.nof.org)

This site provides excellent information on the risk factors and treatment of osteoporosis.

**USA Swimming:**

[www.usaswimming.org](http://www.usaswimming.org)

Although this site is specifically for swimmers, their coaches and other sport personnel, the information is general enough for use by all athletes. Even though the information is general, it is also very thorough and presented in a very usable manner. From the main page, click on Coaches, then Nutrition.

**Sports, Cardiovascular and Wellness Nutritionists (SCAN):**

[www.scandpg.org](http://www.scandpg.org)

SCAN is a dietetic practice group of the ADA. It promotes the role of nutrition in physical performance, cardiovascular health, wellness and prevention of DE. SCAN advocates a “food first” approach for achieving peak performance. A subunit of SCAN, Sports Dietetics-USA, promotes nutrition practices that enhance health, fitness and sport performance.

## Recommended Books

Andersen, M.B. (Ed.), (2000).

***Doing Sport Psychology.***

Champaign, Ill.: Human Kinetics.

(Chapters 4, 5, 6, and 7 deal with relaxation training, self-talk, imagery and goal setting. Chapter 9 deals with issues related to counseling athletes with eating disorders.)

Beals, K.A. (2004).

***Disordered Eating Among Athletes.***

Champaign, Ill.: Human Kinetics.

(This book provides a literature review on DE. It provides especially good information on sports nutrition and the effects of DE on athletic performance.)

Chamberlain, R. (2003).

***Ready to play: Mental Training for Student-Athletes.***

Provo, Utah: University Press, Brigham Young University.

(In this very readable book, the author discusses three major topics — building blocks for success, mental readiness, and mental training tools that athletes and coaches can use to obtain better control with their mental readiness.)

Clark, N. (2003).

***Nancy Clark's Sports Nutrition Guidebook, Third Edition.***

Champaign, Ill.: Human Kinetics.

(This book offers sound and practical nutritional advice from one of the most well-respected sport nutritionists in the United States. It also includes information on eating disorders.)

Otis, C.L., and Goldingay, R. (2000).

***The athletic woman's survival guide.***

Champaign, Ill.: Human Kinetics.

(This is an excellent resource book on the health of the female athlete. The information regarding identifying and managing the Female Athlete Triad is presented in a very readable and usable manner. All female athletes and their coaches should read this book.)

Thompson, R.A., and Sherman, R.T. (1993).

***Helping athletes with eating disorders.***

Champaign, Ill.: Human Kinetics.

(This book, written by the authors of this manual, was one of the first to provide information on identifying, managing, treating and preventing eating disorders in athletes. Although this book is somewhat dated, its information and recommendations are still relevant and practical.)

## Other Recommended Reading and Materials

American College of Sports Medicine (ACSM) (1997).

Position stand: The female athlete triad.

***Medicine and Science in Sports and Exercise, 29***, i-ix.

(This is the primary paper on the Female Athlete Triad. Although it is an excellent account, it is probably of more interest to health-care and sport-medicine providers. ACSM is currently updating the position stand.)

National Collegiate Athletic Association (2005-06).

***Sports Medicine Handbook.***

[www.ncaa.org/health-safety](http://www.ncaa.org/health-safety)

The National Collegiate Athletic Association: Indianapolis, Ind. (Recommended reading includes sections on “Nutrition and Athletic Performance,” “Assessment of Body Composition” and “Menstrual-Cycle Dysfunction.”)

Petrie, T.A., and Sherman, R.T. (1999).

Recognizing and assisting athletes with eating disorders.

In R. Ray and D.M. Wiese-Bjornstal (Eds.),

***Counseling in sports medicine*** (pp. 205-226).

Champaign, Ill.: Human Kinetics.

(This chapter provides an excellent review of warning signs and risk factors. It also provides specific information for coaches.)

Sherman, R.T., DeHass, D., Thompson, R.A., and Wilfert, M. (2005).

NCAA coaches survey: The role of the coach in identifying and managing athletes with disordered eating. ***Eating Disorders: The Journal of Treatment and Prevention, 13, (5).***

(This survey included almost 2,900 coaches of female athletes at Divisions I, II and III institutions. The study discusses how athletes with DE are identified and managed, and recommendations on how to improve identification and management.)

Thompson, R.A., and Sherman, R.T. (1999).

Athletes, athletic performance, and eating disorders: Healthier alternatives.

***Journal of Social Issues, 55, 317-337.***

(This article was written by the authors of this manual, and it discusses risk factors in the general and sport environments for DE, and recommendations for reducing these risks.)

Thompson, R.A., and Sherman, R.T. (1999).

“Good athlete” traits and characteristics of anorexia nervosa:  
Are they similar?

***Eating Disorders: The Journal of Treatment  
and Prevention, 7, 181-190.***

(This article was written by the authors of this manual, and it discusses in detail the issues introduced in this manual regarding difficulties in identification, because of the similarity of desired athlete traits and symptoms of an eating disorder.)

