Reviews of Conferences

The Female Athlete Triad:
Disordered Eating, Amenorrhea, Osteoporosis

CALL TO ACTION

In June of 1992, The American College of Sports Medicine convened a panel of experts and concerned individuals to address an area of growing concern in sports medicine: a triad of disorders observed in adolescent and young adult female athletes. This two-day workshop explored the medical and practical issues surrounding the Triad disorders in the setting of a comprehensive conference format which addressed prevention, screening, risk profiles, diagnostic parameters, training dynamics, treatment, educational gaps, and research needs.

What Is the Female Athlete Triad?

The young female athlete driven to excel in her chosen sport may be at risk of developing a triad of medical disorders which may significantly increase her morbidity and even mortality. The constant focus on either achieving or maintaining a prescribed weight goal may put the female athlete at risk for developing an eating disorder. This in turn may put the athlete at increased risk of developing two associated disorders: amenorrhea and osteoporosis. In itself, each disorder has significant physiological, psychological, and medical consequences. Each of these is described as follows:

Disordered Eating: At the extreme, disordered eating includes anorexia nervosa and bulimia nervosa. Although, not all athletes with disordered eating meet the strict DSM III criteria for these two conditions, they are at increased risk of developing serious endocrine, skeletal, and psychiatric disorders due to disordered eating patterns. The mortality rate from serious eating disorders ranges from 10-18%. The prevalence of disordered eating in female athletes, based on a series of small studies, has been reported in the 15-62% range.

Amenorrhea: Amenorrhea means the "absence of menstrual bleeding:" Primary amenorrhea refers to women who have never had a menstrual period (menarche > 16 years of age). Secondary amenorrhea is the absence of menstrual periods in a woman who has had established menstrual cycles. There is no universal agreement
of the number of months of no menstrual cycle, but it is usually between 3-6 consecutive months. Oligomenorrhea is a menstrual cycle length between 35-90 days and also has medical consequences.

**Osteoporosis:** Osteoporosis refers to premature bone loss and/or inadequate bone formation resulting in low bone mass, microarchitectural deterioration, and increased skeletal fragility resulting in an increased risk of fracture. The prevalence of this condition among female athletes is unknown. What is clear, however, is that the bone loss in an amenorrheic athlete is rapid and may not be completely reversible.

**Who Contributes?**

The pressure to perform in modern athletics has never been greater. Athletes appear to be willing and eager to attempt any measure to achieve an advantage. This aggressive, 'at any cost;' approach has been supported and encouraged by a number of different "players" on the athlete's team. Thus, those responsible for the development of the Triad include parents, coaches, athletic trainers, team physicians, and school or athletic association administrators, as well as athletes.

**Who Is at Risk?**

Potentially all adolescent and young adult female athletes are at risk, particularly at the elite level. The characteristics or circumstances that apparently increase an athlete's risk of developing one or more of the Triad conditions were discussed. Certainly, a pressure to excel was common among affected athletes as well as constant attention given to achieving or maintaining an "ideal" body weight and/or "optimal" body fat. This Triad appears to be common among athletes competing in appearance or endurance sports. During this conference, questions were raised about potentially harmful training techniques as well as the role of inadequate nutrition. Additionally, a question regarding the potential of a time-sensitive period, a window of vulnerability, was also discussed. The role of social isolation was raised, as well as the potential for a specific psychological profile which might put the athlete at risk. Also the possibility of a sport-athlete mismatch was considered.

**The Call to Action:**

The conference included a series of a small work group sessions. Each work group attempted to describe and develop an action plan to address one aspect of the problem. Specific strategies were outlined for the following six areas: