



## Female Athlete Triad

### Introduction

Female athlete triad is characterized by low bone density, menstrual inconsistencies as well as low-energy levels in sportswomen and is often associated with disordered eating (Feingold and Hame 575). The condition can be diagnosed by examining clinical manifestations such as irregular menstrual cycle and general fatigue. The primary intervention for the female athlete triad involves pharmacologic treatment and an adjustment of energy availability and expenditure processes (Joy et al. 228). The disorder may affect sportswomen regardless of the intensity, duration, and type of physical activity they engage in. Active sports participants should be screened for early detection of the female athlete triad because, in most cases, the clinical outcomes of this condition are either only partially reversible or permanent (Feingold and Hame 581). The inter-relationship between osteoporosis, regulated calorie intake, and menstrual cycle changes may significantly compromise the performance of female athletes and cause adverse mental and physical health consequences including panic and anxiety disorders, in addition to the broken limbs (Feingold and Hame 575). For these reasons, examining the female athlete triad in terms of diagnosis, prevention, and treatment, as presented in this paper, will improve sports administrators' capacity to formulate appropriate medical policies to identify the condition and seek help for affected sportswomen.

### Explaining the Female Athlete Triad

The rampant incidence of clinically diagnosed female athlete triad has been attributed to the increasing number of women taking part in physically intense sports which were initially male-dominated. It is important to note that the condition can also affect non-athletic females. Barrack et al. state that female athlete triad can be characterized by more than one symptom, including osteoporosis, amenorrhea, and eating disorders (949). However, Barrack et al. emphasize that the symptoms encompassed in the triad are too general (950). Thus, the authors propose more accurate indicators for identifying the at-risk population such as osteopenia, a strictly regulated calorie intake, and exercise-associated menstrual disturbances. Moreover, these scholars suggest that manifestations of the condition should be examined on a continuous spectrum to differentiate between possible causes of the symptoms experienced by the athletic and the non-athletic patients.

According to Feingold and Hame (576), sportswomen may try to lose weight to maximize their performances; however, many of them often have little knowledge regarding the foods that are recommended for their energy needs. Feingold and Hame (581) emphasize that in severe instances, selective or inadequate food intake may lead to bulimia or anorexia nervosa which are life-threatening conditions characterized by fluctuating body weight, broken blood vessels (especially in the eye), chronic dehydration, oral trauma, depression, and electrolyte imbalances.

Patients may also suffer from amenorrhea or the cessation of menstruation due to decrease in the release of the follicle-stimulating hormone (FSH), the luteinizing hormone, and estrogen (Joy et al. 230). Strenuous physical exercises, mental stress, and reduced calorie intake are significant contributors to irregular cycles, and in severe forms they may cause amenorrhea. However, it must be noted that missed menstrual periods in female athletes can be also caused by other medical conditions or pregnancy. Women affected by the female athlete triad usually associate the reduced or absent menstruations with durations of intense training, therefore, patients should regulate the

time spent in challenging exercises to ease the severity of possible health consequences.

Lastly, osteoporosis in female athlete triad patients is usually caused by poor nutrition and lowered estrogen levels. The weakening of the bones can be a result of abnormal bone formation, injuries, stress fracture, and loss of density (Joy et al. 220). Naturally, an individual's bone mass is developed in his or her childhood and youthful years. Nevertheless, athletes who deprive themselves of calcium which play an important role in the bone formation may suffer the consequences throughout their adult years, including having increased likelihood of several forms of arthritis.

## **Diagnosis**

The diagnosis of the disease is often conducted by specialists such as the obstetrician-gynecologist (OB-GYN), by screening sportswomen during preventive care visits (Joy et al. 224). The tests are often performed before and after taking part in a sporting activity. Physicians who manage patients suspected to be having female athlete triad collect weight gain or loss data from the athlete's teammates, coaches, friends, and parents. OB-GYNs can directly gather information from patients using structured questionnaires. The closed surveys are designed to examine the person's physical exercise regime, perceptions of a healthy weight, diet, eating preferences, his or her notions of a "perfect" body, and menstrual history. Moreover, health care professionals handling such cases may also carry out a physical assessment of an athlete's weight and height by measuring the body mass index (BMI) and compare findings to the set thresholds (Joy et al. 224). Athletes with abnormally low BMI for their age are marked as high-risk for the female athlete triad. Other essential signs which may confirm the existence of the condition include leg edema, mitral valve prolapse, lanugo hair growth, low body temperature, and acrocyanosis (Joy et al. 231).

Laboratory procedures often include testing the levels of hormones such as the thyroid stimulating, prolactin, and follicle stimulating hormones may be performed to rule out non-exercise factors which may contribute to amenorrhea (Feingold and Hame 578). The existence of a common eating disorder can be confirmed by conducting blood phosphorus, magnesium, and calcium blood count, in addition to an electrocardiogram, urinalysis, and glucose testing (The American College of Obstetricians and Gynecologists). Patients who have positive results in a majority of these tests should be referred to such specialists as dietitians, psychoanalysts, and physical therapists for obtaining help with their calorie-intake concerns, possible mental health issues (including anxiety), and setting exercise standards to maintain optimal health and increase performance.

## **Prevention**

Preventing the occurrence of the female athlete triad or alleviating symptoms of the syndrome requires a team effort. Sportswomen who are at high risk of acquiring the condition should consult athletic administrators, managers, coaches, and teammates for their opinions regarding reasonable weight loss objectives and duration/intensity of training (Feingold and Hame 577). Prevention also depends on an athlete's ability to note abnormalities in their diet preferences, menstrual irregularities, general body malaise, and increased bone fracture or dislocation (Joy et al. 222). Any changes noted should be reported to OB-GYNs to commence treatment while the condition has not yet spread to life-threatening degrees. Specific measures should include creating and adhering to professionally formulated physical exercise schedules and nutritional plan to be used by athletes as guidelines.

## **Treatment**

The treatment of the female athlete triad is often focused on restoring the lost physiological functioning as a clinical indicator of reinstating or improving bone mineral density and energy

balance. Barrack et al. mention the application of psychotherapy interventions, including cognitive behavioral and family-based rehabilitation therapies as the most effective non-pharmacological remedies to female athlete triad (951). These therapies usually work best for patients who are not aware of critical factors that may cause the exhibited symptoms, including their energy needs, or those with difficulties noting differences in their menstrual cycles. Treatment can also take the form of nutritional adjustments that are guided by a sports nutritionist (Feingold and Hame 582). Dietary recommendations should encompass opinions regarding the appropriate supplementations, alongside the suggested quality and quantity of food that a female athlete must consume to support physiological functions, improve bone health, and enhance athletic performance.

Patients are required to maintain a daily intake of 600 units of Vitamin D and 1-1.3 grams of calcium (Feingold and Hame 576). Applying pharmacologic treatment for female athlete triad has remained a controversial topic, with experts recommending the use of anti-depressant medications for individuals with confirmed mental disorders such as anxiety, depression, and panic attacks (Joy et al. 231). Similarly, to sportswomen who have inconsistent menstrual cycles and osteoporosis can be prescribed a combination of ethinyl estradiol and oral contraceptive pills, which have demonstrated remarkable effectiveness in reestablishing menstrual cycle regularity, as confirmed by randomized control trials (Feingold and Hame 583). The types of prescribed medication should consider a patient's BMI; for instance, low-weight clients positively respond to transdermal estradiol.

## **Conclusion**

In summary, the advantages of engaging in routine physical exercises can be undermined. For female athletes, engaging in routine physical activities can help lower blood cholesterol levels, regulate blood pressure, build lean muscle, and increase bone density. Nevertheless, athletes who combine strenuous exercise and inadequate calorie intakes are likely to suffer from female athlete triad, which is a combination of osteoporosis, insufficient calorie intake, and menstrual cycle deviations. The condition can also affect non-athletes. However, females who engage in aesthetic sports such as skating and gymnastics, endurance sports, and professional level physical exercise are at an increased risk of suffering from severe impacts of female athlete triad. Treatment should be guided by professional sports dietitians and psychoanalysts who will determine the severity of the condition by conducting physical and laboratory tests to assess hormonal functioning. The core element of female athlete triad treatment is ensuring the balance of energy by regulating calorie intake (Joy et al. 220). Remarkable enhancements in the bone density and menstrual consistency can be achieved by prescribing treatment medication, including Ethinyl estradiol and oral contraceptive pills. Most importantly, condition management should engage parents, coaches, and dieticians to increase the efficiency of personal management and treatment outcomes for sportswomen.