

# Athletes at Risk: Preventive Education for Active Women

## Nancy Rocci

*Terry, at sixteen years old, was a competitive long distance runner. She enjoyed her activity both on a recreational and competitive level. One day, during her training, her knee began to give her pain and consequently swelling occurred. The pain persisted and Terry realized that unless she stopped running her condition would not improve. Despite physiotherapy, medication and modification of running there was no improvement. She was advised to stop running for six weeks and recommended to enroll in a water exercise program. Terry began to eliminate foods from her diet because she feared that she would gain weight and lose her competitive advantage. In four weeks, she was only eating vegetables and drinking water. When she weighed herself the following month she noticed that she had lost 15 pounds. In addition, she missed two menstrual periods and showed signs of increased muscle and bony pain.*

### *What was happening to Terry?*

Women's involvement in sports and physical activity has significantly increased over the last several decades. There are many health benefits gained from participating in a sport or being physically active, yet everyday many women endanger their health without knowing the symptoms or causes. In fact, while many active women consider themselves to be at their optimal sport or fitness level, in reality they may be placing themselves at risk of a serious illness, severe injury or even death. The culmination of these and other health risks can be identified with the *Female Athlete Triad*, three inter-related medical conditions of **Disordered Eating**, **Amenorrhea**, and **Osteoporosis**.

## The Female Athlete Triad

The *Female Athlete Triad*, which is being identified more frequently in our North American society, is common among young female athletes and active women. One reason for this increase can be attributed to the lack of awareness about the seriousness of the Triad and the lack of appropriate prevention strategies. Although the *Female Athlete Triad* is a serious issue in women's sport, little attention is paid to preventing and rehabilitating the Triad. Many competitive female athletes and active women such as elite performance dancers rely on their physical activity for their career, life goals and salary. For many of these women, much of their self-esteem is based in their ability to compete/perform these skills. Therefore a program which focuses on the prevention and rehabilitation of the *Female Athlete Triad* would be beneficial in supporting these

women's goals and maintaining their sporting activities. For as the familiar saying goes: "An ounce of prevention is worth a pound of cure".

## Components and consequences of the Female Athlete Triad

In order to prevent this condition and its negative outcomes, understanding the related components and consequences of the *Female Athlete Triad* is necessary.

**Disordered Eating**, the initial component of the *Female Athlete Triad*, can be described as a condition whereby an athlete may be restricting food intake or avoiding certain foods (usually high in fat, sugar or calories) in efforts to enhance their performance and appearance. Poor nutrition choices, inadequate intake, and food avoidance can lead to nutritional imbalances. If these practices become regular and chronic in nature an eating disorder can develop, including bingeing, purging and the abuse of laxatives and diuretics. With inadequate fuel from food, the body will turn to fat reserves and protein stores (muscle) for its energy requirements, depleting these reserves and placing a great deal of stress on the body. The physiological stress of having little available energy can upset the balance of the reproductive hormones in the body.

With decreased circulating hormones, **Amenorrhea** occurs. Amenorrhea is the medical term used to describe lack of menstruation-or having two or less menstrual periods per year, which usually occurs as a result of low energy intake. Once the athlete is oligomenorrheic, (fewer than 6 periods in a year), she becomes estrogen deficient, which increases the potential for developing **Osteoporosis**, the last component of the triad.

Osteoporosis is a medical term used to describe a certain type of bone condition during which healthy bones become weak and brittle due to low bone mass. As a result, there is an increase in bone fragility and susceptibility to fractures, particularly of the spine, wrist, hip, pelvis and upper arm.

Osteoporosis is often called the *silent thief* because there are often no symptoms until a fracture occurs. Low levels of estrogen can prevent the athlete from ever developing peak bone mass because estrogen is required to lay down bone cells and maintain them. The athlete is at increased risk for stress fractures, bone pain, recurrent musculoskeletal overuse injuries and full-blown fractures with minimal trauma or impact.

During adolescence the body builds over 75% of its bone density. Missing out on this opportunity can have detrimental lifelong effects. If a woman reaches adulthood without building significant bone density, it is unlikely that she will be able to develop adequate density later in life.

Results of the Triad, directly or indirectly, include impaired sport performance, increased sport injury, increased risk of cardiovascular disease, and infertility due to low estrogen levels and poor nutrition habits.

## Risk factors for developing the Triad

Female athletes and active women seem to be at risk for developing disordered eating and consequently the Triad, because they tend to be perfectionists and are often very body conscious with respect to weight and appearance. They also often subject themselves to high intensity exercises controlled by a need or desire to compete or do well.

Disordered eating may also occur as a result of several other factors; concerns of becoming “overweight” and lack of nutritional knowledge, energy requirements and fluid needs. Traveling and eating in fast food restaurants, lack of time to prepare or money to buy nutritious foods, and high intensity exercise are also factors contributing to disordered eating. Athletes live in a competitive environment with many myths surrounding body weight and performance.

One myth that is common among female athletes is that to be good at a sport, the minimum body weight and body fat must be attained.

This is an incorrect belief, as muscle is denser than fat, and at the same volume occupies less space in our bodies. Subsequently, the less muscle you have, the weaker you are in competition, thereby decreasing your overall performance. Also, body weight is only a small contributor to performance, since psychological make-up, health and fitness are the best predictor of success.

## Prevention of the Triad

Since the *Female Athlete Triad* is being identified more frequently in our society, the most effective approach is *prevention* through *education* and management at a *multidisciplinary* level. It is clear that a need exists to implement a prevention program that has an inter-disciplinary approach and considers the diverse health issues faced by this population. A program that considers prevention as an important component of physical activity and sport among female athletes and active women is essential. This program should incorporate an inter-disciplinary approach and also be designed with an educational focus. A preventive education program should focus on female athletes and active women involved in recreational or competitive sport who may be at risk for developing the *Female Athlete Triad*. In particular, females who will benefit from such a program are those involved in recreational or competitive sports that emphasize a *lean appearance* (ballet, dance, gymnastics, figure skating), *endurance sports* (swimming, marathons, triathlons), sports that have *weight categories* (professional wrestling, rowing) and finally, women who *exercise intensely*.

## Objectives

Objectives of a prevention program include the following:

- a) To reduce the incidence of Female Athlete Triad, which is often the culmination of unrecognized risk factors that have developed into a disorder with physical, psychological and emotional consequences, by educating female athletes, active women, and those who work with them.
- b) To reduce the severity of any of the individual problems that are often more common in the female athlete by educating about each of the three-interrelated components of the Triad.
- c) To encourage and promote a healthy lifestyle.
- d) To provide education and support using a respectful, relational and interactive format.
- e) To target the educational information at multiple levels, including athletes, parents, coaches, teachers and health care professionals.
- f) To incorporate information about off season training, rehabilitation, and the avoidance of over-training.

The **Athletes@Risk**<sup>®</sup> is one such preventative program, and can be obtained through a licensing agreement with *Sunnybrook & Women's College Health Sciences Centre in Toronto, Ontario*.

The program design consists of the following 5 interactive workshop units:

- 1. Understanding the Health Consequences**
- 2. Food as Fuel**
- 3. My Body, My Sport,**
- 4. Getting Strong, Getting Fit**
- 5. Life Skills and Wellness.**

Each unit includes workshop content, interactive tools and a teaching guide with resource list, participant handouts and workbook.

The information provided in such programs aim to educate active young women and female athletes on the importance of the early establishment of good eating habits and training practices, as well as encourage them to develop a positive self-esteem and body image. This knowledge in turn will help to reduce the incidence and severity of any or all of the components of the *Female Athlete Triad*.

**For more information on the [Athletes@Risk](#) program call 1-800-363-9353.**

© NEDIC 2002 [www.nedic.ca](http://www.nedic.ca)