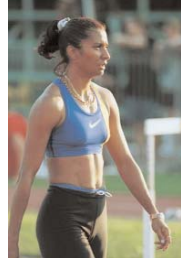


The Female Athlete Triad



What is the Female Athlete Triad?

The Female Athlete Triad (Triad) refers to three health problems that are linked to each other: Low energy availability or energy deficiency ("under-fueling"), menstrual problems, and weak bones. Menstrual problems include irregular or missed periods. Bone problems can include stress fractures and reduced bone density for your age. These health problems, especially when they occur at the same time, require prompt medical attention. Having just one part of the Triad is enough, however, for any girl or woman who wants to stay active to seek help. Luckily, the key to avoiding menstrual problems and building strong bones is simple -- eat enough calories to fuel your body during exercise and at rest.

Under-fueling (low energy availability)

Energy availability is defined as the amount of energy from food (calories eaten) that is available for your body *after* exercise (calories expended). Active girls and women who routinely expend more calories than they take in will end up in an energy (caloric) deficit. If this energy deficit is too large, your body will have too few calories or too little energy left over to maintain other normal functions, like having a menstrual period every month or developing healthy bones.

Sometimes, female athletes slip into this under-fueled state. They simply don't realize how much energy they expend during workouts and they don't eat enough to maintain a healthy weight. In other cases, athletes and physically active girls and women try to lose too much weight or lose it too quickly in order to look or perform better. They under-eat by skipping meals, avoiding all foods that contain fat or they eliminate lots of foods without making healthy substitutions. Some athletes use too much exercise relative to their caloric intake in order to lose weight quickly which can create an excessive energy deficit.

In the short-term, low energy availability or energy deficiency makes it hard to perform at your best. When you are dehydrated and low on fuel, this means you have less power, muscle strength and stamina. You will not get the benefit of improved performance from your workouts, and in fact, your performance may even get worse. You'll tire more quickly, get sick more easily and you'll recover less quickly. Girls and women who try one diet after another or who lose too much weight (or lose it too quickly) can also be slowed down by other serious problems, like iron-deficiency anemia, menstrual problems and stress fractures.

Irregular or missed periods

Low energy availability or energy deficiency disrupts the reproductive system in otherwise healthy active girls and women. The result is irregular or less frequent menstrual cycles (oligomenorrhea). Even more worrisome is when three (or more) menstrual cycles in a row are missed (amenorrhea). Eating too few calories can also delay the onset of menstruation, so that a young woman does not begin having periods by age 15. When periods are less frequent or missed, the body makes less estrogen. Estrogen is a hormone that is absolutely necessary for building strong bones. Any menstrual irregularities must be diagnosed by a physician in order for proper care to be provided.

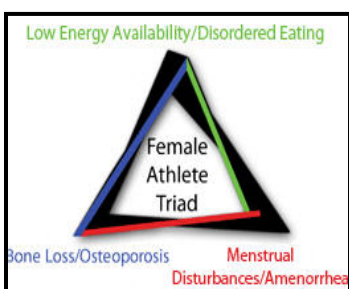
Stress fractures and other bone problems

Because of changes in hormones that are associated with decreased energy availability or energy deficiency, your body is not able to replace old bone cells with new healthy cells. During this time, you are at risk for poor bone health. The situation is even more alarming for physically active girls with irregular periods during their peak bone-building years (puberty to age 20). Despite the positive bone-building effects of exercise, these girls actually fail to build all the bone that is expected. It remains unclear whether this "lower-than-expected" or overall decrease in bone mass is permanent or if full "catch-up" is possible once menstruation begins.

Losing bone mass or bone density faster than you should sets the stage for stress fractures and the early onset of osteoporosis (weak bones that break easily). Bone loss is made worse by energy deficiency and under-fueling and getting too little of important nutrients like calcium and vitamin D.

Sport is a great way for girls and women to build strong, healthy bodies, self-esteem and a life-long love of physical activity. However, some female athletes participate in sport in a way that is Less than optimal for their health and well-being. The Female Athlete Triad is a serious health concern that has been identified among athletes, particularly girls and women in competitive sport.

THE FEMALE ATHLETE TRIAD COALITION



What are the risk factors for developing the Triad?

Any thoughts, beliefs or behaviors that lead to low energy availability or energy deficiency might be considered a risk factor for developing the Triad. For example: dieting at an early age; chaotic eating habits (such as skipping meals), being unhappy with your body type, perfectionism; or believing that losing weight (or body fat) at any cost will improve performance. Taking part in sports that favor a lean body size or shape (like gymnastics, figure skating or long distance running) or sports that have weight classes (like rowing) or revealing uniforms (like swimsuits or volleyball uniforms) can also lead some girls and women to unhealthy eating habits.

What are the signs of the Triad?

You do not need to exhibit all three components of the Triad at the same time to be at risk for health problems! In the early stages, workouts and performances may not be adversely affected and standard blood test results are typically normal.

Frequent or deliberate attempts to lose weight or decrease body fat quickly or to look “more toned” or “like an athlete should” often result in chaotic eating patterns and under-fueling. Possible indicators of the Triad that need to be evaluated by a sports-minded health professional include: irregular or absent periods (or difficulty becoming pregnant); stress “reactions” or fractures; a preoccupation with weight or body size and shape that interferes with normal eating habits; noticeable weight loss; and excessive or compulsive exercise habits.

What are the consequences of the Triad?

The Triad can affect every aspect of life. Eating too few calories and nutrients can quickly lead to dehydration and electrolyte imbalances and leave you feeling more tired, anxious and irritable than usual. You may find it harder to concentrate and feel less motivated to do things you normally like to do. Athletes report that they feel as if they are training harder but their performances don’t improve, or may even get worse.

Over time, the Triad increases your risk of suffering a stress fracture or an “overuse” injury and then makes it harder to train successfully for your sport.

Is it normal for female athletes to stop menstruating when participating in sports?

Although it may occur in some sports, it is never normal, desirable or acceptable. When periods stop the body is communicating that something is wrong! Any menstrual irregularity should be evaluated by a physician in order for proper treatment to begin.

Why should young females and their families worry about the Triad?

Healthy eating and exercise habits develop early and last a lifetime. Because it’s hard for adults to give up what they learned as children, it is important to develop smart eating habits at an early age. It is also important to choose optimal exercise and fitness activities and patterns. The teen years are the prime time to build dense bones. A lack of good bone health as a teen means a greater likelihood of bone problems later in life. Lastly, irregular or missed periods can make it more difficult to become pregnant or maintain a healthy pregnancy and have children.

How is the female athlete Triad treated?

The best care for a woman or girl with the Triad consists of putting together a team of experts who provide medical care and nutritional counseling, as well as a psychologist or mental health counselor to help if there are body image issues or other life concerns. The cornerstone of treating an athlete with the Triad is learning how to maintain a healthy weight by eating enough calories to cover the amount of energy expended through exercise.

Having regular periods is important. If your periods are irregular or you have not had a period for over three months (or have not started your period by age 15), see your doctor immediately. Normal monthly periods should be the goal for all female athletes—in all sports and at all levels of competition.

To avoid life-long problems, seek medical attention quickly when even *one* aspect of the Triad is present. For example, if you have a stress fracture or “shin splints” that won’t heal, or you’re enjoying your sport less and less because you are anxious about food or your weight.

Even more important--how can we prevent the Triad?

Preventing the Triad begins with a healthy attitude toward food and exercise. Since athletes come in all shapes and sizes, girls and women must be allowed to and encouraged to choose sports appropriate for their natural body type.

All physically active girls and women can do the following to prevent the Triad:

1. Keep track of your periods from month to month by writing down the number of days between cycles. Discuss these records with your physician at your next visit.
2. Know generally how many calories you eat each day. Most commercial food products have caloric values available, and there are several online sources to help you estimate how many calories you need per day to maintain your current body weight.
3. Eat every three to four hours. —Three meals a day and at least two snacks. Have a daily eating plan for *when* to eat to best fuel and recover from exercise. For example, competitive athletes often need to carry snacks around during the day and eat before, as well as right after practices.
4. Treat snacks as mini-meals. Choose foods that are nutritious, taste good and fit your lifestyle. For example, healthy “fast foods” like a bowl of instant oatmeal with raisins, a peanut butter sandwich or crackers with peanut butter, a low-fat milk shake or fruit smoothie, or a microwaved baked potato topped with cheese, fit the bill.
5. Track how much you exercise in a day, accounting for time, type and intensity of exercise. Adjust your food intake to account for the increased expense of energy. For example if you weigh 150 pounds and you add a 2 hour vigorous volleyball practice to your daily activities, you will burn approximately 1100 calories *in addition to* your normal requirements. There are many online sources to calculate how many calories are needed by an athlete who performs a wide variety of sports.

For more information:

Talk to a family member, physician, nurse, dietician, athletic trainer, physical therapist, school counselor or coach.

Everyone has the same goal in mind:
*for the female athlete to be as healthy
and successful as possible!*