

BACK IN THE GAME

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REHABILITATION INFORMATION FOR THOSE WHO ENJOY THE SPORTING LIFE

ACL Injuries

By Kristy Kerkela, Student Physical Therapist

The basketball player goes up for a rebound and lands wrong on her foot. The skier twists his knee as he slides to a stop. Both basketball and skiing are two of the most common sports for players to injure the anterior cruciate ligament.

The anterior cruciate ligament, commonly referred to as the ACL, is one of the main ligaments inside the capsule of the knee joint. The ACL is the primary restraint preventing the sliding of the tibia (the larger bone below the knee) forward on the femur (the thigh bone). The ACL also controls twisting stresses, blows to the outside and inside of the knee, and backward movement of the knee.

Surgical intervention is the recommended treatment for athletes with an ACL tear. If the injury is not treated with surgery, even the recreational athlete will have trouble regaining the control needed to participate in sporting activities.

The most common type of surgery is an autograft. This involves relocating tissue from another part of the body. With this type of procedure, the surgeon will either use the patellar tendon (knee cap/quadriceps tendon) or the semitendinosus tendon (hamstrings tendon). *Another less common type of surgery is an allograft, in which the surgeon uses human donor tissue.*

Standard protocol for a patellar tendon autograft begins with the patient

using partial weight bearing with two crutches and progressing to full weight bearing by four weeks following surgery.

Week one typically consists of pain management and control of swelling. Therapy begins with working on passive straightening of the knee, isometric quadriceps strengthening, and active range-of-motion exercises.

In weeks two through four, closed-chain exercises are added and strengthening the hamstrings and hip musculature is important. Range of motion of the knee should be 0-110 degrees with full passive straightening of the knee joint.

In weeks five through eight, focus is more on proprioceptive activities (the body knowing and aware of where the knee joint is in space), along with creased strength and endurance.

With semitendinous grafts, more care should be taken when strengthening the hamstring musculature. Passive stretching of the hamstrings is essential to prevent tightening and scarring of the tendon graft area.



With both types of grafts, at four months athletes can typically begin a more sports-specific functional therapy program.

Most athletes with ACL injuries may return to sports at a *minimum* of six to twelve months. Even then, athletes should only return to sports if they have full range of motion in the knee, no joint swelling, good knee stability, and have been told to begin by their physician. It's important to have all these critical aspects before returning to athletics in order to prevent re-injury to the knee joint.

It's especially important to check with your physician before returning to any exercise routine. Because each individual with an ACL injury presents differently, so discuss these steps with your doctor before making any decisions regarding your rehabilitation.

For more information about ACL injuries, call the Sports Rehab department at 1-800-200-TEAM.

Combating the female athlete triad: Education is key

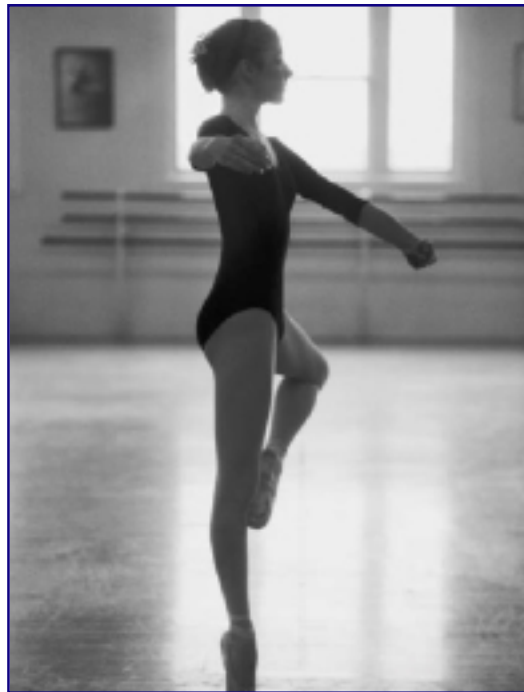
By Allison Bailey, Student Physical Therapist

Since the passage of Title IX in 1972, stating that federal funding must provide equal opportunities for women and men to participate in athletic programs, girls' participation in sports has increased considerably. Specifically, the number of women in college varsity sports has increased from 33,000 to 163,000, while high school female athletic participants have climbed from 300,000 to almost 3 million. For many of these individuals, their participation in athletics has been a positive experience. For some, however, the pressure to achieve athletic success places the athlete at a higher risk for developing a condition collectively known as the female athlete triad.

The female athlete triad is an interrelationship of three medical conditions that are associated with female athletic participation: disordered eating, amenorrhea (absence of a menstrual cycle), and osteoporosis (decrease in bone mass resulting in fragility). Although the exact frequency of the triad is unknown at this time, previous studies have shown disordered eating to be present in 15 to 62 percent of female collegiate athletes, while amenorrhea occurs in 34 to 66 percent of female athletes.

In a typical triad case, an athlete compromises her nutritional intake. The body, robbed of the calories required to properly function, turns off the reproductive system to conserve energy. If eating and exercise habits are not altered, the body becomes deficient in calcium, our body's bone strengthener, and the athlete becomes prone to bone fractures. In the short term, this type of injury can sideline the

athlete for indefinite periods of time. In the long-term, lack of calcium can lead to debilitating osteoporosis later in life.



It's important to note here that disordered eating doesn't necessarily mean anorexia nervosa or bulimia. If a female athlete is consistently burning more calories than she's consuming, she's at risk for developing one or more of the health problems associated with the triad.

It has been suggested that lean-sport athletes, such as gymnasts, dancers and runners, are more likely to engage in disordered eating patterns than are athletes who participate in sports which are not as focused on lean body mass such as basketball or softball. However, the evidence for this suggestion is non conclusive. In fact, the American College of Sports Medicine believes that all physically active females are at risk for developing one or more components of the female athlete triad. A complicating factor is that the triad isn't easy to spot by the outsider. An

athlete who looks too thin may have her nutritional intake in-check and be in perfect health. Conversely, an athlete with a large amount of muscle mass may appear healthy; however, improper nutrition has resulted in such a low percentage of body fat that her body's reproductive cycle has stopped functioning.

Athletes need to be made aware of the risks that can result from improper nutrition. If an athlete has missed her menstrual cycle for more than three consecutive months, she should see her doctor and discuss ways to balance diet and exercise for optimal performance.

Often, athletes and coaches believe that excess weight may be detrimental to performance. It's this line of thinking that creates nutritional misconceptions that often lead to restrictive diets and the triad. In order to acquire and maintain strength, power and agility, adequate nutrition is vital to a participant's performance. A high carbohydrate diet that is low in saturated fats has been suggested to maintain adequate muscle glycogen needed for energy.

Athletes have reported that their main source of nutritional knowledge comes from parents, coaches and the media. Although we can't control the media, we can educate athletes, parents and coaches about the nutrition required to keep women in peak condition. By sharing this information with your female athletes today, you're helping to ensure that they'll be healthy enough to play tomorrow.

For more information on the female athlete triad, call Marquette General Sports Rehab at 1-800-200-Team.