



Understanding **ACL** Injury

by **DAVID BARLOW**

The sport of platform tennis requires a level of fitness that needs to support repetitive start and stops, lunging, twisting, landing, and pivoting activities. These are the exact types of movement that can place undue strain on the knee structures, specifically the anterior cruciate ligament (ACL).

The ACL is a ligament that runs diagonally thru the knee. Its function is to help control inward stresses to the knee. This often occurs when performing dynamic actions that involve sudden changes of movement, especially when pivoting or landing from a jump. When injured, the

most common sensation is the feeling of a “pop” in the knee along with an associated sudden giving way and weakness.

RECONSTRUCTION

Over 70% of injuries to the ACL are related to non-contact events. Injury to the ligament can occur in isolation but often is associated with injury to other structures of the knee, including the medial collateral ligament (MCL) and medial and lateral meniscus. For athletes in competitive sports, reconstruction of this ligament is the preferred course of

care. Non-operative care is an option but may leave the knee with some instability when attempting to change direction.

Reconstruction is performed by using an individual's own tendon (an autograft), most commonly the hamstring or patella tendon, or a donor or cadaver tendon (an allograft) to re-graft the ligament. Most surgeries are performed arthroscopically, and the choice of graft determined with your physician. There are some variances in rehab protocols but in general ACL rehabilitation is a long process. For most individuals, it takes six to eight months to regain the proper elements of range of motion, strength, motor control, endurance, and power needed for return to sports.

REHABILITATION

Region II tournament player Marc Porter attested, "The hardest part about rehab was being patient and not coming back too soon. It was very frustrating since tournament paddle has been a big part of my life for the past 20 years. The most important aspect for me was to be diligent with my rehab PT and being patient with my return."

It is important to recognize that injuries are a part of the game. Athletes should be concerned with general fitness and attention to injury prevention. A 2017 nationwide survey of over 1,000 APTA players by Dr Leda Ghannad from Rush University Medical Center found that platform tennis players report 60% of injuries are due to overuse and 40% due to an incident on court. The most common conditions reported were shin/calf (21%), knee (16%), elbow (16%), ankle (13%), and shoulder (10%).

In the United States alone, there are over 300,000 ACL reconstructions every year. Female athletes have a much higher risk—four to six times that of men—for ACL tears. Some of these aspects are due to physiological differences that are out of our control. However, there are some modifiable common factors that may predispose both men and women to injury. These include hip muscle weakness, faulty muscle-firing patterns, and improper running, jumping, or landing mechanics. These are things players can improve on and should address in training.

TRAINING

Optimally, a training program should be performed at least two to three times per week during the season. The emphasis

RESOURCES

Santa Monica PEP program
<https://www.aclstudygroup.com/pdf/pep-program.pdf>
American Physical Therapy Association (the other APTA)
<https://www.youtube.com/watch?v=RfROpda4kvg>

of a prevention program consists of warm-up, stretching, strengthening, plyometrics, and sport-specific agilities to address potential deficits in the strength and coordination of the stabilizing muscles around the knee joint. It is important to use proper technique during all the exercises and to avoid vulnerable positions with the knee.

There are a variety of training exercises that can be performed. The key concepts are focusing on maintaining proper form when performing agility or plyometric activities. It is important to have the hip aligned over the knee, to avoid any excessive lateral movement of the hip or leaning over the trunk. Avoid an inward posture of the knee and focus on tracking over the second toes as a guide. When landing, allow your knees to flex to absorb impacts and land softly on the balls of your feet. Below is one exercise I recommend.

SQUAT JUMPS WITH A HOLD

Instruction: Stand on ground with feet approximately shoulder-width apart. Perform a quick squat and then explode into a jump. Return landing softly on the balls of your feet. Hold the landing for a 2 second count. Repeat 20 times.

The best advice for a long sports career is to avoid injury, so make injury prevention a priority. Be Fit and Be Well. <>



DAVID BARLOW, DPT, OCS, is the owner of BE Fit Physical Therapy, with locations in Hanover, New Hampshire, and White River Junction, Vermont. He has been focused on orthopedic sports rehab since 1998. He is affiliated with the Norwich Racquet Club (VT) and has run the Green Mountain Open tournament for the past 11 years.

