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# InMotion

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## Returning to Sports After ACL Injury—Not Just Physical

By Lee Diehl, MD

**A**CL injury and subsequent surgical reconstruction is one of the most studied sports injuries in the modern literature. Strength, stability, and return to sports participation at the pre-injury level are all measures of the success of ACL reconstruction.

There has been lots of research on objective measures of function after ACL reconstruction, however in the past decade there has also been an increasing interest in defining and understanding the psychological or emotional aspects of return to sport or recreational activity after ACL injury.

The problem is not everyone returns to sport after major injury or surgery like ACL reconstruction. In fact estimates are that somewhere between one third and two thirds do not return to their pre-injury level of activity despite being physically okay to return. Studies have suggested that only a little over 1 in 2 athletes are able to return to competitive sports and 1 in 3 does not return to their pre-injury level of sport. These findings illustrate a disconnect between the physical and psychological readiness for return.

### Psychological Readiness

Psychological readiness is associated with returning to pre-injury activity. Those who return have been found to have more positive psychological responses, report better knee function, perceive a higher knee related quality of life, and are more satisfied with their current function.

Multiple factors have been identified in those who do not return, including fear of re-injury, pain related fear of movement, poor satisfaction or confidence in the person's knee function, lifestyle changes resulting in shifts in personal priorities, and other innate personality traits.

### How do we correct the problem?

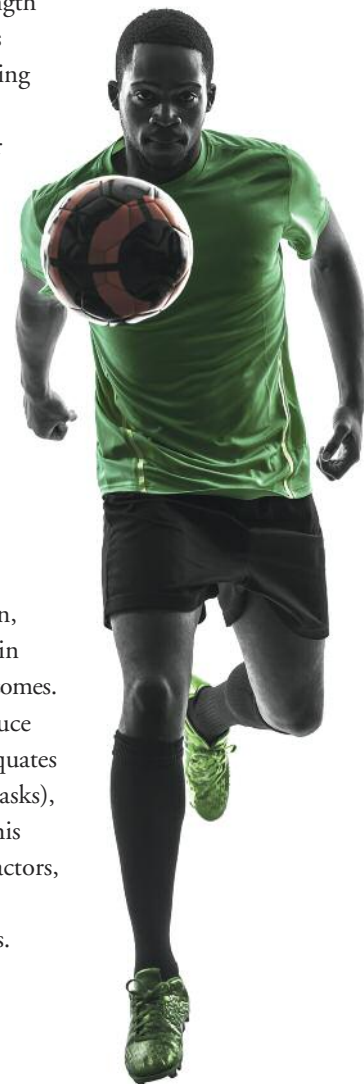
For many athletes there is a continuum of care—from the physician through the physical therapist (PT) and athletic trainer (ATC) and ultimately to the strength and conditioning coach and position coach. This optimally blends a combination of physical training and progressive sport preparedness, as well as promoting psychological preparation. One major challenge is to duplicate this for patients who are not in the same structured environment.

Certified athletic trainers specifically have educational competencies as part of their curriculum, which involve specific education and focus on psychological aspects of injury and return to sport. However, both the PT and ATC can through better identification of the problem, frame their efforts to foster positive physical and psychological progression through better identification of the problem.

Developing psychological coping skills such as positive self-talk, using mental imagery, relaxation, and appropriate goal setting are all instrumental in influencing positive behavioral and emotional outcomes. These tools can improve adherence to rehab, reduce stress and anxiety, improve self-efficacy (which equates to an individual's confidence in performance of tasks), and promote an overall positive outlook. With this in mind, it's important to continue identifying factors, which can facilitate sports participation and/or maintain a patient's lifelong recreational activities.

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# Overuse Serves Up Tennis Shoulder Injuries

By Michael Khazzam, MD

Tennis is a very popular sport around the world with many levels of skill from amateur/recreational to professional. Although tennis provides an excellent outlet for aerobic exercise, the activities associated with its participation come with some injury risks. Given tennis is an overhead sport, the shoulder is at risk for both overuse injuries as well as acute traumatic injuries. The most common shoulder injuries that occur involve the rotator cuff, the biceps tendon, and the labrum.

## Rotator Cuff

The rotator cuff, on the top part of your shoulder, is often the site of overuse injuries from tennis. When the dominant shoulder is overworked, it can develop both internal and external impingement. Impingement is when the rotator cuff is irritated to a point where it is bothersome and painful, especially with serving. Without proper treatment and rest, this overuse can lead to an increased risk for a rotator cuff tear. External impingement occurs when there is imbalance of the muscle groups supporting the shoulder.

Typically patients complain of shoulder pain and difficulty with overhead activities. These conditions are usually diagnosed by physical examination and treated most commonly with physical therapy, anti-inflammatory medications, and corticosteroid injections. In severe cases, surgical intervention may be required to repair the rotator cuff if it is torn and possibly release the shoulder structures to regain proper balanced range of motion.

## Biceps

Pain in the front of the shoulder is especially associated with groundstrokes during tennis and may be an indication that there is inflammation and/or injury to the biceps tendon. Painful biceps tendon symptoms can occur because of repetitive twisting activities from the racquet swing that can be further increased with underlying stresses and muscle imbalances. These symptoms typically occur with shoulder pain that is worsened by raising, reaching, and lifting in the front portion of the body as well as serving and forehand strokes. The treatment for a painful biceps

tendon is similar to the rotator cuff, starting with physical therapy, non-steroidal anti-inflammatory medications, and occasionally corticosteroid injections. When conservative treatment fails to provide symptom relief, surgical treatment may be necessary to allow full, pain free, return to sports participation.

## Superior Labrum

The repetitive overhead activities inherent in tennis participation can also cause injury to the superior labrum or the area where the ligaments attach into the socket of the shoulder. Superior labrum anterior to posterior (SLAP) tears are a part of the spectrum of injuries that can occur along with a rotator cuff injury. SLAP tears cause deep shoulder pain that is frequently difficult to define by the patient but may commonly cause front and back shoulder pain. Symptoms are worsened with overhead serving along with a “dead arm” feeling during these activities. There can also be an accompanying painful click or catch in the shoulder during loading activities. Treatment is similar to what has been described for both the rotator cuff and biceps tendon injuries.

Participation in tennis puts the shoulder at risk for a wide range of injuries that can limit participation due to pain. It is critical that athletes pay particular attention to proper form and technique to protect the structures of the shoulder from undue stresses. Additionally, it is equally important that tennis players maintain full range of motion and avoid tightness that can predispose the shoulder for injury. Seek medical attention early to allow for initiation of physical therapy and correction of shoulder mechanics.



# Protect Yourself During Summer Athletics

By Michael J. Smith, MD



Athletes and adventurers who compete and train outdoors have a common enemy—ultraviolet radiation from the sun. It has been estimated that 1 in 5 Americans will get skin cancer in their lifetime. Skin care should be a top priority for outdoor athletes and adventurers. Whether you are a triathlete, running in Hawaii, or hiking on the Appalachian Trail, you run the risk of developing skin cancers from sun exposure.

Skin cancers are commonly either basal cell or squamous cell carcinoma. The more serious and deadly skin cancer is melanoma. Being in the sun increases your risk for developing all three types of cancers.

Sunscreens cannot reverse skin damage but can help prevent it. Sunscreen however, should not be the first line of defense.

Wearing protective clothing to cover the skin as well as a wide brim hat reduces the exposure significantly. The newer athletic outdoor clothing has not only good sun protection but also breathability to allow sweat and moisture wicking.

Planning your activities around the time of day doing activities and workouts helps. The highest rate of ultraviolet radiation is in the mid-day when the sun is at its highest. Planning activities in the early morning or late afternoon cuts down on the ultraviolet radiation exposure. Even finding natural shade such as trees prevents sun exposure. If you are on the beach, umbrellas or canopies help with the protection.

Sunscreens are readily available, but finding the right one for you is important. Sunscreens need to protect both UVB and UVA rays, including the UV-A1 rays, which are the most harmful type. UVA rays penetrate more deeply into the deepest layer of the skin. These rays not only cause skin cancer, but also age

your skin prematurely. UVB rays do not penetrate as much, but do cause the skin to burn. Both UVA and UVB contribute to the premature aging, freckles, and age spots. Obviously, too much exposure increases the skin cancer risks.

The sunscreen you use should have an SPF (sun protection fracture) of at least 30. When looking for the sunscreen product, be sure that it has a broad-spectrum coverage for both UVA and UVB. The SPF is a measure of how long it prevents the



**If your activity lasts several hours, expect to use up to half of an 8 ounce bottle of sunscreen and reapply every 2 hours.**

skin from burning. The SPF in sunscreens only relates to the UVB rays. There is no current rating system for UVA protection.

Sunscreens are often listed as waterproof, but this is a misnomer. They should be described as water resistant. No matter how water resistant or sweat resistant the sunscreen, you will need to reapply it every two hours. While participating in any athletic activity or outdoor adventure, you do not want the sunscreen to get in your eyes and cause an irritation. The water resistance should last at least 40 minutes, but the products that last 80 minutes are much more effective.

Sunscreen products that use mineral based products such as zinc oxide or titanium dioxide effectively protect against both UVB and UVA rays. Other products that contain avobenzone, oxibenzon, retinyl talmitate are also used. Be sure you apply the sunscreen 30 minutes before going outside.

You need to apply at least one ounce of the sunscreen to get full protection, and reapply it at least every two hours especially if you are sweating during an outdoor game or adventure. If the activity lasts several hours, expect to use up to half of an 8 ounce bottle of sunscreen. Most people do not use enough, and tend to skimp on the sunscreen usage. Be careful with spray-on products. They may give you a false sense of security and may not give you the coverage you get from direct

application. The spray on products may also be problematic during windy days.

Lip protection is also needed. Use a sunscreen lip balm product that has at least an SPF of 30.

Eye protection from the sun's rays also is important for eye health. Whether you are running, hiking, or skiing, sunglasses are not an optional piece of equipment. You need to have good vision to participate in your activity and also cut down on the harmful ultraviolet rays, not to mention the dirt and wind debris. There are reports that UV radiation produces cataracts as well. Sunglasses cut down on this exposure.

Remember the sun is out all year round. Even on cloudy days, 70% of the UV rays still get through. If you are doing outdoor sports and activities, sunscreen and sun protection are needed year-round. Be prepared and enjoy yourself. Just do not forget to protect yourself from harmful sun rays.





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### About AOSSM and *In Motion*

As a world leader in sports medicine education, the American Orthopaedic Society for Sports Medicine (AOSSM), we have designed the publication to highlight relevant information for multiple age groups from exercise and rehabilitation to nutrition and psychology.

This important educational tool is published quarterly and distributed electronically.

AOSSM members can add their practice name and logo to *In Motion*. Personalizing *In Motion* is an easy way to get pertinent, patient-friendly sports medicine information to your patients with just a click of a mouse. For more information, please e-mail Lisa Weisenberger at [lisa@aossm.org](mailto:lisa@aossm.org) or contact the Society at 847/292-4900.

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## Take a Breath and Let Kids Enjoy the Sport

By Michael J. Leddy III, MD

Heated arguments and violent acts unfortunately are becoming commonplace on the sidelines of sporting events. What's more disturbing is that these incidents are not just occurring at professional contests, but now more commonly at youth and high school games. Somewhere along the way, "it's how you play the game" has been replaced by "win at all costs." It is because of this loss of perspective that the purity of youth sport is threatened.

So how do we fix this issue and make it better. First, as parents, we need to remember why we are present at these events. It's to cheer on our children and support them as they have fun and develop relationships.

Parents are much more involved in their children's activities than in previous eras. Many times, unrealistic goals and dreams are set. They invest significant time and money into their children with the hope that this will result in championships, college scholarships, or professional careers. When things don't go as planned or other children are more successful, ego can come into play and lead to irrational behavior, as they vent frustration. Stopping this from getting to a boiling point is the key to avoiding these incidents. Here are few key tips to managing expectations and anger on the sidelines:

- **Understand what the goals and desires of your children are**—Make sports

participation fun and enjoyable regardless of the outcome.

- **Encourage fair play and sportsmanship**
- **Take a deep breath**—Use the old reliable "count to 10" method.
- **Avoid shouting matches and confrontation with other parents**—Bad behavior in front of your children can be embarrassing to them, and cause undue stress. It also sets a bad example where young individuals may think that this behavior is acceptable and the norm.
- **Respect the coaches and officials**—Many are volunteers and without them, games and events would not occur. If there are concerns, they should be addressed in private. Most times, children do not appreciate "bad calls" and are more interested in having fun.

Finally, many leagues and events have developed and implemented a parents' code of conduct. This code outlines the appropriate behavior expected at events. These allow organizations to discipline and remove individuals who continually exhibit inappropriate behavior and remove potential altercations.

Youth sports are a great way to develop character and sportsmanship. It is our job as parents and spectators to set the appropriate example to nurture these qualities so that enjoyment of athletic completion is not lost and continues for a lifetime.

