



Nursing &  
Health Sciences  
Athletic Training Education

# Running With Scissors

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## Birthdays

- 6/21-Kelly Butler
- 6/25-Trenton Moore

## Hand and Upper Extremity Injuries in the Weightlifter

Athletic injuries in the hand and wrist are often misdiagnosed and undertreated for a variety of reasons. Chronic and overuse injuries often go untreated due to the athlete's reluctance to seek medical attention. This is because in many sports, the athlete can compensate with some of these injuries while this may be more difficult in weight bearing joints such as the knee and ankle. Another reason may simply be less awareness regarding some of the subtle pathology affecting the upper limb, particularly in hand and wrist. For example, the entire gamut of medical staff managing athletes likely has a thorough understanding of ACL injuries, whereas carpal instability of the wrist is largely unknown. This is where the physician and ancillary health specialist can improve their management of these challenging and often obscure injuries. In many instances, the hand surgeon should be involved at an early stage of treatment and to ensure an accurate diagnosis.



The common injuries in the hand and wrist are often sports specific and often aptly named. For example, jersey finger is an avulsion of the flexor profundus tendon that occurs when the athlete grabs the opponent's jersey as they pull away. In rare cases, this can be seen in doing

excessively heavy wrist curls where a great stress is placed on the insertion of the tendon on the distal phalanx at the tip of the finger. This leads to a sudden and resisted hyperextension force that avulses the tendon at its insertion site. A strong surgical repair is necessary followed by appropriate therapy to maximize the passive range of motion and later the active flexion. Subsequent strengthening is of obvious particular importance in the competitive athlete and weightlifter. Blunt injuries can occur to the extensor mechanism as well and the wide range of complex joints in the hand and wrist.

Much more common, however, is the chronic and overuse injury in the weightlifter. Repetitive heavy strain on a muscle/tendon unit can lead to microtears in this tissue and lead to the common entity known as tendonitis. This is a very general term and it is important to understand the specifics and severity of the particular lesion. For example, flexor tendonitis in the fingers is known as "trigger finger" because the inflamed digital tendon often gets caught, or triggers, within the tendon sheath in the palm. Anti-inflammatories and frequently a corticosteroid injection will resolve this problem. In resistant cases, a minor outpatient procedure is necessary to relieve the painful catching of the flexor tendon. (continued on p. 3)

## From the Director's Desk.....

I am thrilled to report that **Nicolette Stallworth** was awarded a summer internship in the WNBA with the Los Angeles Sparks.

CONGRATULATIONS!!!



**Claudia Garcia**, who just graduated in May 2011, was hired by Our Lady of Lourdes Academy in South Miami, FL as the Head Athletic Trainer. Before now, this all-girl, private, Catholic school never had

an athletic trainer on staff. It is great to see that this school recognizes the need to have an athletic trainer on site to provide quality health care for their athletes. As a result, Claudia has the unique opportunity to build a new athletic training program.



## ATS Spotlight: Julie Burton

**Julie Burton** is currently completing her first year in the FIU Athletic Training Education Program. She is originally from Tarpon Springs, FL and she earned her Bachelor of Science in Exercise Physiology from the University of Miami.

Julie decided to become an Athletic Trainer due to her love for the human body. She finds it amazing to witness how the body recovers from injury as a result of the proper care and treatment provided by an athletic trainer. Julie finds it rewarding to

play a significant role in a patient's recovery. She says of athletic training, *"From start to finish you are there and you do not get that opportunity anywhere else! Athletic Training encompasses a little of every field and I like the diversity of it."*

To date, Julie's favorite class has been *Orthopedic Assessment II—Upper Extremity with Lab*. Her most exciting clinical education experience thus far has been her first assignment, which involved providing health care to the FIU Men's Soccer team.



This clinical assignment provided Julie with the foundational expectations of professionalism and expected athletic trainer conduct. She is grateful to her Approved Clinical Instructor for providing her with great instruction and valuable experiences.

Julie Burton's dream job is to be an Athletic Trainer for the New York Giants.

## Alumni Spotlight: Lili Molina

**Lili Molina** graduated from FIU in 1999 with a Baccalaureate degree in Health Education, with an emphasis in Athletic Training



Ms. Molina is currently employed as a physician extender at UHZ Sports Medicine Institute. Prior to her 2-year tenure at UHZ, she worked as an Athletic Trainer in a private school as well as in public schools in Broward and Miami-Dade counties.

During her time as an Athletic Trainer in the secondary school setting, Lili

recalls managing a terrible injury. The first week on the job as the Head Athletic Trainer a freshman football player suffered a bimalleolar frac-

ture with an ankle dislocation during two-a-days practice. Ms. Molina immediately stabilized the injury, activated EMS, and the athlete was taken to the emergency room.

The football player was committed to his rehabilitation and was able to return to football. Years later, when this athlete

was about to start college, he thanked Ms. Molina for not only the health care she provided but also for her support in keeping his spirits up throughout his year-long recuperation.

When asked about her greatest achievement, Ms. Molina says, *"Going back to school after being out for over 8 years and completing my Master's in Health Administration while working full-time."*

Ms. Molina's advice to current FIU athletic training students is, *"Keep learning, be open-minded, and practice your skills."*

## Cover story continued.....

Tendonitis is frequently seen in the wrist as well and the most common type is known as DeQuervain's tendonitis. The key here is diagnosis, since 80 % will resolve with a simple injection near the base of the thumb. It is important to have a careful physical exam by the appropriate specialist since this tendonitis must be differentiated from other pathologies such as a cartilage or ligament tear deep within the wrist. This exam is even more crucial than the frequently over-ordered MRI imaging studies which often gives confusing data. A hand surgeon will best determine when other diagnostic studies are indicated.

Pain on the ulnar, or small finger, side of the wrist can be due to a variety of reasons. One of the most common and underdiagnosed causes is a tear of a cartilage structure known as the triangular fibrocartilage complex (TFCC). This is an injury often seen in golfers and high level tennis players that can end a career. The TFCC is similar to the meniscus in the knee in that it causes pain with certain motions and can be successfully treated with surgical debridement and occasionally suture repair followed by cast immobilization. TFCC tears are often seen in twisting injuries and close grip heavy bench pressing is an occasional culprit of this disabling condition.

Small joint arthroscopy now gives us a more accurate method to diagnose many of these subtle injuries and of course provide treatment. Arthroscopy is the technique where a small fiberoptic instrument is inserted into a joint and literally allows the surgeon to do the work from inside the joint. It is minimally invasive and hence allows for a rapid recovery. Wrist arthroscopy indications have been well worked out, but newer techniques using metacarpophalangeal (knuckle) and thumb carpometacarpal arthroscopy are evolving. This includes better methods of fixation, radiofrequency probes to ablate and shrink tissue, and improved post-op methods of rehabilitation including splinting techniques and passive range of motion protocols. These newer techniques have particular application to athletes since they cause minimal scarring and more rapid incorporation into the weight training regimen.

Elbow injuries are usually overuse syndromes as well in the weightlifter. The most common is lateral epicondylitis, known by its common misnomer, "tennis elbow." This painful tendonitis of the extensor origin is seen in many people besides tennis players and I have personal experience suffering from this in the past. The key is to manage symptoms by decreasing the inflammation, stretch the extensor origin and then strengthen it. A new

technology now offered at OrthoNOW is non-invasive radiofrequency. This stimulates angiogenesis (healing by increasing blood supply) and allows definitive cure of the problem, not simply symptom management. Relief TM, can be used not only for epicondylitis, but other frustrating enthesopathies, such as jumpers knee or Achilles tendinosis. Occasional cases may require surgery and are amenable to an arthroscopic debridement, or an open radiofrequency ablation, as well. Tricep insertion tendonitis is common in the power lifter and is usually treated by activity modification and anti-inflammatory modalities. The more severe injuries such as a bicep tendon avulsion will require surgery and the bodybuilder will need to be patient in avoiding heavy weights for at least four months after surgical repair.

Deep persistent pain in the shoulder can affect young and old alike. The causes; however, can be very different and require a thorough diagnostic process to understand the underlying problem and lead to a solution. Young, active patients often feel that there is an overuse syndrome. This may be the case, but it is important to understand why. (continued on p. 4)



## ATEP Dates to Remember

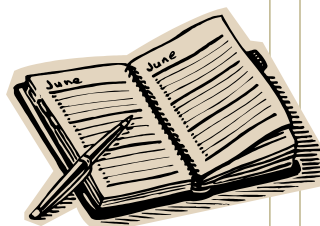
### June

**June 6:** Mandatory meeting for Class of 2012 (3–4 pm, GPA 113)

**June 19-22:** The 2011 NATA Annual Meeting and Clinical Symposia, New Orleans, LA.

**June 26:** Mandatory orientation meeting for incoming students, Class of 2013. (1-5pm, GPA 113)

**June 27:** Summer B, Classes begin.



### July

**July 1:** Deadline to apply for the Graduate Minority Opportunity Program.

**July 11:** Mandatory meeting for all students (12–12:30 pm, GPA 113)

## Cover story continued.....

Current exercise regimens usually emphasize strengthening the deltoid muscles, but the rotator cuff is largely ignored. This leads to an instability syndrome that can cause pain and even worse, a mechanical deficiency of the shoulder joint. If this is a chronic problem, with no history of a single traumatic event, the patient will usually respond to a strengthening therapy protocol that requires diligence on the part of the patient and therapist. This is where an athletic trainer, physical therapist, or occupational therapist will have a crucial role.

An acute injury, such as fall or impact on the raised arm, may lead to a discrete anatomic injury that may require repair. This can occasionally occur when very heavy weights are not controlled during exercises such as behind the neck presses. Because of this, it is critical to make a diagnosis and this is often dictated by the patient's history of the problem. When acute injury leads to persistent pain, we often order an MRI which is a diagnostic study that best looks at the soft tissue structures deep in the shoulder. A plain x-ray only looks at the bony structures and is usually normal in people with painful shoulder syndromes. The MRI can often indicate the severity of the soft tissue injury and can dictate whether continued conservative treatment (anti-inflammatories, cortisone injection, and therapy) or surgical intervention is warranted. A true anatomic disruption, such as a torn cartilage rim or tendon rupture, will usually not get better on its own hence a mechanical solution may be necessary. In most cases, this can also be resolved with arthroscopic surgery. This means that the shoulder joint is visualized through a small camera inserted through tiny holes in the skin outside the shoulder joint. This minimizes scarring, improves the surgeon's visualization of the problem, and speeds the recovery. In certain cases, an open incision may be required depending on the severity and location of the problem.

The most common cause of shoulder pain is known as impingement syndrome. Bursitis is often an element of this syndrome and this frequently used term is much more accurate in depicting the problem than the term "arthritis." Impingement refers to the mechanical process where the overlying bony arch of the shoulder (acromion of scapula and clavicle) is pressing on or rubbing on the underlying rotator cuff tendons and bursa. It is essentially a mechanical problem that is frequently seen in weightlifters and bodybuilders. This is even more common with increasing age as the blood supply to the rotator cuff is diminished and small microtears in the tendon leads to tendonitis and bursitis and even larger tears. Unfortunately, this condition is even more common in anabolic steroid use since these drugs cause thickening or "hypertrophy" of soft tissues such as ligaments. This causes a restriction of space within the shoulder arch. I vividly recall this mechanism in a former Mr. Universe bodybuilder that I operated on in New York City. This is yet another reason to avoid steroid use. Impingement syndrome may respond to conservative treatment including a cortisone injection to reduce the bursitis and shoulder therapy to improve the strength of the intact rotator cuff.

A complete rotator cuff tear implies that the torn tendon has pulled away from the bone and hence, cannot stabilize the head of the humerus against its cup joint (glenoid). This is more commonly seen in older, even active patients, who have a degenerative component to the pathology. However, acute tears can occur in the weightlifter who performs a sudden abduction or rotation movement that overpowers the tendon insertion site. The patient will either be unable to physically raise the arm or they can do this only with severe pain. This whole range of impingement problems is characterized by pain with elevation of the arm, pain worse at night, and inability to lie on the side of the affected shoulder.

Once the pain is severe enough and does not respond to therapy and other conservative means, then surgery is indicated. However, acute tears due to a lifting maneuver are usually very apparent and may require immediate repair. Most tears are now repaired via arthroscopic means, although larger tears may be fixed with open means as per the surgeon's choice or experience level. Currently, this surgery can be done in a painless manner since a post-operative pain pump is typically used for the first 72 hours, which delivers anesthetic to the relevant brachial plexus fibers via an indwelling catheter placed by the anesthesiologist. Most cuff or labral repairs require a 3-4 week period of immobilization in a sling and several months of post-operative therapy closely directed by the surgeon. Once initial therapy begins, the athletic trainer often takes over commencing with sport-specific therapeutic exercises with a gradual incorporation into activity, followed by competition play or a heavy weightlifting program.

The shoulder is a demanding joint and requires patience on the part of both patient and treating surgeon. The recovery is usually not rapid, but diligent adherence to the therapy protocol will in most cases yield a good result and a functional shoulder with minimal or no pain. As can be seen, weightlifting injuries to the hand, wrist, shoulder and elbow can encompass a wide range of pathologies. It is most crucial to have an accurate diagnosis BEFORE embarking on a treatment regimen since this will determine the outcome. Due to the wide array of possible maladies, it is important to involve the appropriate orthopedic subspecialist early in the treatment protocol. Appropriate rehabilitation and sports specific training will allow the weightlifter to return to this activity safely, and productively. This will minimize progression of the injury and maximize the speed of return to a weightlifting lifestyle.

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