

Kentucky ATC Newsletter

UKHealthCare

Orthopaedic Surgery
& Sports Medicine

Swimmers Shoulder: Return to Swimming Protocol

Tracy Spigelman Med, ATC

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Basic overview of swimming injury:

Swimmers shoulder is a term commonly used to describe overuse injuries suffered by competitive swimmers. The most prevalent shoulder injuries seen in any age group and college age swimmers is tendonitis secondary to impingement syndrome. Treatment of overuse syndromes focuses on a gradual return to play, in addition to correction of faulty mechanics or identification and elimination of the habit causing the problem[1]. Treatment also consists of cooperation of the sports medicine team. This includes the athlete, coach, parents, therapist and doctor. The purpose of this protocol is to allow the swimmer to slowly increase strength and neuromuscular endurance in order to prevent future injuries and continue swimming.

Freestyle Biomechanics:

Proper technique of the freestyle stroke is important to injury prevention. The freestyle arm stroke is generally divided into four phases: catch, early pull-through, late pull-through, and recovery. Catch phase sets up for the pull through. As the hand enters the water, the elbow should remain flexed while the torso rolls toward the pull side. This "high elbow" position engages the latissimus dorsi muscles and sets the swimmer up to pull the arm under the body. It also prevents the swimmer from "dropping" the elbow, which results in the humerus riding up into the subacromial space causing impingement of the supraspinatus muscle and tendonitis. During the mid-pull through and late pull through phases, the arm moves in an "S" shaped pattern accelerating until the thumb brushes the thigh or suitline. The late-pull through phase is known as the point of power as the arm presses the water backward prior to exiting the water for the recovery phase. Throughout the recovery phase it is important that the elbow is flexed and "high" to set up for the catch phase. Note that the majority of the freestyle drills in Appendix A focus on maintaining a "high" elbow during recovery[2]. Although not highlighted in this protocol, an even 6 beat kick (3 kicks per individual arm revolution) and alternate breathing pattern is helpful for developing a freestyle stroke with correct biomechanics.[3]

Guidelines:

The following rehabilitation program serves as a guideline for return to the pool. For best results, as in any functional return to play program, the swimmer, therapist, coach and parent (if athlete is a minor) need to cooperate and work as a team. It is necessary for the swimmer and coach to understand that the athlete should progress slowly. Increases in pain or increased discomfort need to be recognized by the swimmer as a warning sign to decrease training and have the coach re-evaluate stroke mechanics. For prevention of further injury, stroke drills should be emphasized during a swimming return to play program. Finally, each swimmer will respond differently to a program, so a practice's yardage and frequency will need to be adjusted accordingly[4].

Swimmers Shoulder: Return to Swimming Protocol cont.

Guidelines Cont.:

We rehabilitate our patients similar to a primary ACL reconstruction except with a slower timeline. Rehabilitation is customized to each individual patient, depending on other findings at surgery, particularly if any other concurrent procedures were performed. Return to cutting activities is limited for six months and sports are not allowed for 6-12 months and when functional studies show 90 percent functional capacity of the normal leg. It often takes up to 1 year for the athlete to perform at their previous level of activity.

Before starting this program, the swimmer should be able to perform an easy 1000 yard swim of any stroke or combination of strokes. The purpose of this short swim is to help the athlete can gain confidence. The swimmer should be encouraged to “feel the water” on their hand and forearm and to swim as naturally as possible. An approach to determining a starting point of yardage is to ask the coach the average daily yardage the swimmer performed prior to injury. Based on this information, along with the swimmers’ pain and confidence level, the therapist can make an educated decision about how much yardage the swimmer should swim per practice. This program is divided into 2 – 3 week phases. Below is a brief description of the objective and focus of each phase.

Phase One:

In phase one, a number of freestyle drills are suggested to regain neuromuscular control and to break down the swimmers’ freestyle in order to correct the stroke. The main goal of this phase is to prevent the swimmer from regressing to old habits that resulted in the original shoulder problem. Drills should be performed with specified rest times and not on intervals. This will ensure the swimmer is focusing on stroke technique and not speed. No paddles should be used during the phase. Fins are strongly encouraged to relieve the pressure off the shoulders and keep the lower body afloat. The swimmer should be encouraged to take as much rest as is needed and inform the coach if he/she is having any pain. Further emphasis of this phase is to focus on core body strength to help the swimmer support the body in the water and perform a rotational component of the stroke. Core strengthening activities can be performed on dry-land and in the pool[4].

Phase Two:

The goal of phase two is to increase endurance and strength. Stroke technique and core strength should still be a major focus. If the athlete begins to experience pain during or following activity, yardage should be decreased by 500 to 1000 yards per practice until the athlete can build up to the longer yardage without pain.

In general, return to the pool should be progressive. The swimmer should start swimming every other day, while continuing dry-land rehabilitation. Extra recovery days should be built into the athletes schedule as needed.

REFERENCES

1. McMaster WC, Roberts A, Stoddard T. A Correlation Between Shoulder Laxity and Interfering Pain in Competitive Swimmers. 1998. p. 83-6.
2. Moore M. A feel for freestyle. USMS Swimmer. 2006:16-21.
3. Pink M, Perry J, Browne A, Scovazzo ML, Kerrigan J. The normal shoulder during freestyle swimming. An electromyographic and cinematographic analysis of twelve muscles. 1991. p. 569-76.
4. Weil WW. Strength training to prevent swimmer's shoulder. Swimming world & junior swimmer. 1999:19-21.



Meet our Sports Medicine Team

Our Physicians:

Darren Johnson, MD
 Scott Mair, MD
 Christian Lattermann MD
 Robert Hosey, MD
 Kyle Parish, MD

Our Athletic Trainers:

David Brajuha, ATC
 Kara Frey, ATC
 Greg Jackson, ATC
 David Jacobs, ATC
 Candi Lee, ATC
 Carrie McCloskey, ATC
 Sheri McNew, ATC
 Rob Ullery, ATC
 Tim Pike, ATC
 Jenni Williams, ATC

(859) 323-5533
www.ukhealthcare.uky.edu/sportsmedicine



A Message from the KATS President

Greg Rose ATC, President

As I am sure many of you know, the past six months have seen many positive changes in the regulation of Certified Athletic Trainers and the practice of Athletic Training in the state of Kentucky. The Kentucky Athletic Trainers Society and many of its individual members invested time and money to successfully change the outdated practice act to one that accurately reflects where our profession is today. The progress that was made in the past legislative session will make it much easier for our organization to go back to Frankfort in the future to continue to strengthen our position as an allied health care provider.

The new practice act recognizes certification by the Board of Certification as the standard for state licensure – there will no longer be a route to be licensed an ATC in the state without BOC certification. Other highlights of the practice act include a list of services that ATCs are prohibited from performing including dispensing over the counter medication to minors. Penalties for practicing athletic training in the state without proper licensure, or doing things prohibited by the practice act are also outlined.

I would encourage each of you to go to the web-site of the Kentucky Board of Medical Licensure – kbml.ky.gov – click on the Allied Health link on the left side of the home page, select Athletic Training and review the different sections of our current practice act.

I would like to personally invite anyone who is interested in becoming involved with KATS to contact me at katspres@alltel.net – apathy is a convenient excuse, but not something that helps move our profession ahead for the benefit of all of us. We are all busy individuals, but we cannot ignore the future because we are too busy to get involved today. Visit the KATS web-site, consider donations to the KATS PAC, which will allow us to continue to advance our legislative agenda, and get involved in some way.

Happy Holidays to each of you and your families
Greg Rose
President, Kentucky Athletic Trainers Society



Meet Carter Cassidy M.D.

Dr. Cassidy is an Assistant Professor of Orthopaedics at the University of Kentucky. He received his medical degree from the Northeastern Ohio Universities College of Medicine. He completed his residency at the Department of Orthopaedics and Sports Medicine, at the University of Kentucky, and completed a fellowship in orthopaedic spine surgery at the University of Kentucky.

SAVE THE DATE!!!!
9th Annual UK Sports Medicine Symposium
 May 18-19, 2007
 Embassy Suites,
 1801 Newtown Pike,
 Lexington, KY 40511.

More information will be available in next issue

UK Sports Medicine Walk-In

- With our sports injury walk-in clinic, no appointment is necessary.
- Walk-in at 7:30 - 8am.
- We're located within Kentucky Clinic, with adjacent parking available.
- Staffed by sports medicine fellowship-trained physicians.
- Physical therapy and rehabilitation services are available.
- We're proud to be the team physicians for all UK Athletics.
- Call (859) 257-4577 for more information.

