



Competitive Swimming Injuries

This edition we will cover the Shoulder and Elbow injuries

Swimming is a highly competitive sport that requires the use of just about every muscle in your body. It's effective at toning your physique and even burning fat. However, injuries to the shoulders and elbows can be quite common due to the strain placed on your muscles and joints. While warming up and stretching can prevent some injuries, it's still important to be mindful of what could happen.

Swimmer's Shoulder



Swimmer's shoulder is one kind of competitive swimming injury. It causes the muscles and tendons around the shoulder to swell up, become inflamed and cause pain. The act of making large strokes through the water strains the shoulder muscles and can result in tears and soreness.

Although swimming is generally considered a sport with a low risk of injury, a distressingly large number of competitors suffer from shoulder problems at some point in their career. For example, over one-half (51%) of a group of 137 elite swimmers (participants in a national competition) reported injuries. "The most affected segment was the shoulder (53%) and tendinitis was the most frequent diagnosis (72%)." Specialists in butterfly and freestyle were diagnosed with shoulder tendinitis with a frequency almost triple backstrokers and breaststrokers.

There are three primary risk factors for shoulder injury: excessive training distance, muscular imbalances, and improper technique. Many experienced swimmers (i.e. older teens) have all three risk factors, but can only control one. The coach usually controls training distance. Muscular imbalances are often not identified or given inadequate attention. Technique, however, is the one factor under the continuous control of the swimmer. It is, therefore, vital that swimmers learn to position the arm to avoid shoulder stress.

An ineffective (and stressful) arm entry was found in most college swimmers (over 50%) for both butterfly and freestyle. At the completion of the arm entry, the hand was closer than the shoulder to the surface in a position classically related to joint surface aggravation or “impingement syndrome.” Modifying the arm entry with a downward angle positions the hand deeper than the shoulder to begin the pull. The resulting arm position is stronger (more mechanically advantageous), and most importantly, less stressful on the shoulder.

In addition to arm position, there are also arm coordination issues related to shoulder stress. For example, if the arm is held motionless in front of the body as the opposite arm recovers (as in catch-up stroke); the ensuing torso rotation will stress the shoulder. Eliminating catch-up coordination (by immediately beginning the pull after completion of the arm entry) is another way to prevent or rehabilitate shoulder injuries.

Rotator Cuff



Competitive swimming may also cause damage to the rotator cuff in your shoulder. This area includes numerous muscles that make it possible for your shoulder to rotate all the way around. Performing repetitive swimming strokes, including the breast stroke that requires you to quickly fling your arms around can cause joint issues and pain. Tearing can also occur, which would require rest and possible surgery to repair.

Preventing Shoulder Injury



Appropriate prevention of swimmer's shoulder is critical in all intense training programs. Routine icing and, in some cases, prophylactic NSAIDs may be needed during heavy training. Continual reinforcement of proper stroke mechanics and adequate flexibility is essential. Yardage and intensity must be increased gradually at the start of each season, and warm-up and cool-down periods should be lengthy. After long kicking-only sets, a swimmer needs additional warm-up before using arm strokes at normal speed.

Weight training should emphasize the same goals as rehabilitation, including consistent rotator cuff strengthening exercises. Hand paddle use should be minimized. These simple modifications can greatly decrease a swimmer's chances of shoulder overuse but are frequently overlooked when intense training is the priority.

Tennis Elbow

Despite its namesake, another possible swimming injury is tennis elbow. Known medically as lateral epicondylitis, this condition arises due to overuse of the elbow joint and surrounding muscles to pull the arms up out of the water for the breaststroke and butterfly, according to Sports Injury Bulletin. Inflammation and tears can occur around the elbow due to overuse and may cause weakness in your forearm.



Elbow Injuries

Although coaches often encourage swimmers to use a high elbow position during the pull phase, this position may predispose the swimmer to high medial elbow stresses that may overload the medial tendon and place the elbow at risk for injury. A swimmer may compensate for the sore elbow by dropping it throughout the pull phase. This position is much less efficient and can increase stress on the shoulder and common extensor muscles and tendons. The increased stress increases the risk of tennis elbow (inflammation of the extensor carpi radialis brevis and extensor communis aponeurosis at the lateral epicondyle) and shoulder injuries. Other overuse injuries of the elbow, such as triceps strain and synovitis, may occur with full

elbow extension during the backstroke. Thus, analysis and alteration of stroke technique are especially important in long-term management of elbow injuries.

Over Training Syndrome

Swimmers are at risk for over training because they participate in long, intense, twice-daily practices through most of the season, and many swim with more than one team, competing year-round. Over training has been observed in 10% to 21% of swimmers during the course of a competitive season.



Staleness and over training syndrome can develop when exercise outpaces recovery or when athletes fail to adapt to the stress of sustained, high-intensity training. Swimmers' tolerance varies; a workout that increases performance in some swimmers may cause others to become stale or over trained. As few as 10 days of increased training without adequate rest may decrease performance.

The primary feature of over training syndrome is an unexpected drop in performance during practice or competition that cannot be attributed to illness or injury. This decline in performance may be preceded by a period when greater effort is needed to maintain the same performance. Over trained athletes will often have a multitude of physical and psychological complaints? Mood disturbances are common, along with fatigue and feelings of heaviness or soreness in the limbs. Often athletes will have sleep and appetite disturbances. One way to monitor athletes for over training is to have them check their resting heart rate upon awakening; a rising resting pulse may indicate early over training.

If over training is suspected, the patient should be examined to rule out illness or other diseases. Athletes should be questioned about sleep patterns, fatigue, stress, and muscle soreness. If no medical cause for the swimmer's condition is found and the swimmer is showing symptoms of over training, a training break is necessary. The length of the break may range from a few days to several weeks, depending on the severity of the over training syndrome. Athletes can usually return to activity as soon as they feel ready. Over training syndrome can be prevented if coaches allow adequate rest and recovery, especially during the heaviest training periods and following injury.

Additional Tips to Prevent Swimming Injuries

- Warm up and stretch before a swim session
- Cool down and stretch after a swim session
- Follow a general program to develop your functional strength



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