

Training the Shoulder for Racquet Sports

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Many sport movements involve accelerating an implement, such as a ball, bat or racquet, or transferring force from the ground to the hands. The human body serves as a kinetic chain during these actions, linking and summing forces together in a synchronized effort. Segments of the body are coordinated to elicit a favorable outcome and the segments can be thought of as links to the chain.

The overhand serve is an explosive, violent and forceful movement initiated by the strong muscles of the hips, thighs and legs. On the other end of the kinetic chain, the rotator cuff is the muscle group that decelerates the arm and racquet during the overhand serve. The rotator cuff, consisting of four small muscles on the posterior side of the shoulder, serves to stabilize the shoulder joint. If these muscles become tired, overtrained, weak or fatigued, the shoulder is jeopardized and can become injured. A comprehensive shoulder strengthening and flexibility routine can reduce the chance of injury and maximize the effectiveness of the player.

The Warm Up

A general warm up prior to a strength training session is recommended. The general warm up would consist of cycling, jogging or light calisthenics and last for five (5) to ten (10) minutes. The purpose of the general warm up is to raise the temperature of the body and muscles, decrease viscosity of the joints, and increase the range of motion. There is also an increase in heart rate, blood flow and respiration.

A specific warm up would follow the general warm up. This would include performing exercises with light weights. Flexibility can be included at this time with the exercises. Some specific stretches for the shoulder will be introduced latter.

The Strength Training

All of the following strength training exercises can be done three times per week. Here is a specific lifting routine to be done on Mondays, Wednesdays and Fridays.

Straight Arm Pull Through: 1-3 sets of 15-30 reps
Straight Arm Bench Press: 1-3 sets of 15-30 reps
Thumb Down Side Raise: 1-3 sets of 15-30 reps
Thumb Up Front Raise: 1-3 sets of 15-30 reps
Thumb Up Side Raise: 1-3 sets of 15-30 reps
External Rotations: 1-3 sets of 15-30 reps

These exercises are to be done with little or no rest between sets. Equal numbers of each exercise should be completed in the recommended order.

Shoulder Exercises

Straight Arm Pull Through

Equipment: A lat pull down machine will be used for completion of this movement. Stand directly in front of the pull down and grasp the bar at shoulder width.

Start: Begin with the arms at, or slightly below shoulder height. Reach forward as far as possible, “rounding” the upper back. Pull through squeezing the scapula (shoulder blades) together. (Figure 1)

Finish: Conclude this exercise by elevating the chest, squeezing the shoulder blades together and briefly pausing at the end of the movement. (Figure 2) Return the weights to the starting position with a slow, controlled movement.

Straight Arm Bench Press

Equipment: Use a flat supine bench press for this movement. Lie flat on the bench with feet on the floor and a shoulder width grip, wrapping the thumb around the bar.

Start: The elbows are held straight through the entire movement. Lower the bar toward the torso as far as possible without bending the elbows. (Figure 3)

Finish: Push the bar as far away from the torso as possible. There should be some rounding of the upper back. (Figure 4) Return the weights to the starting position with a slow, controlled movement.

Thumb Down Side Raises

Equipment: Use light dumbbells—less than five (5) pounds—for this rotator cuff movement. Stand with feet shoulder width apart.

Start: With good posture, hold the upper back muscles tight to prevent any movement from the scapula (shoulder blades). The thumbs are turned down as far as possible with the hands at the sides. During the movement move the arms about 30 degrees rotated in. This is called a “scapular plane.” (Figure 5)

Finish: The movement is completed when the arms are slightly lower than horizontal. (Figure 6) Return the weights to the starting position with a slow, controlled movement.

Thumb Up Side Raises

Equipment: Use light dumbbells—less than five (5) pounds—for this rotator cuff movement. Stand with feet shoulder width apart.

Start: Externally rotate the arms pointing the thumbs up. Keep the upper back tight to prevent any movement from the scapula. (Figure 7) During the movement, move the arms about 30 degrees rotated in.

Finish: Complete the movement with the hands at, or slightly below shoulder level. (Figure 8) Return the weights to the starting position with a slow, controlled movement.

Thumb Up Front Raises

Equipment: Use light dumbbells—less than five (5) pounds—for this rotator cuff movement. Stand with feet shoulder width apart.

Start: In the standing position, begin with the hands at the sides and the palms facing in. Once again, keep the upper back muscle contracted to prevent any unnecessary movement. (Figure 8)

Finish: Raise the weights just to shoulder level or slightly below. Return the weights to the starting position with a slow, controlled movement. (Figure 9)

External Rotations

Start: Lying on one side, place a rolled-up towel under the upper arm. This will assist with proper mechanics of the shoulder joint. Keep the elbow at 90 degrees during the movement. Externally rotate or turn the arm, moving the dumbbell away from the body. (Figure 10)

Finish: The top position is reached when a full contraction and range of motion is completed. (Figure 11) Lower the weight back to the starting position with a slow, controlled movement.

The Flexibility

There are many different specific stretches for the shoulder joint, and several different techniques. Two static stretches that are safe and effective are described below.

Posterior deltoid and rotator cuff

In a standing position, reach horizontally with the right arm across the body in the opposite direction. With the left hand assist the right arm by pulling the right arm further across grasping at the right elbow. (Figure 12) Hold the stretch for 15-30 seconds and repeat it on the left side.

Anterior Deltoid stretch

In the standing position, keeping the upper arm at the side reach behind the back making a 90-degree angle at the elbow. Grab the wrist of the opposite hand and assist the stretch with gentle force from the opposite hand. (Figure 13) Hold the stretch for 15-30 seconds and repeat it on the opposite side.

These specific exercises are designed to assist the athlete in maintaining shoulder health and integrity. They should be part of any athlete's training routine regardless of level.

About the Author

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Figure 1: Straight Arm Pull Through - Start



Figure 2: Straight Arm Pull Through - Finish



Figure 3: Straight Arm Bench Press - Start



Figure 4: Straight Arm Bench Press - Finish



Figure 5: Thumb Down Side Raise - Start



Figure 6: Thumb Down Side Raise - Finish



Figure 7: Thumb Up Side Raise - Start



Figure 8: Thumb Up Side Raise - Finish



Figure 9: Thumb Up Front Raise - Start



Figure 10: Thumb Up Front Raise - Finish



Figure 11: External Rotations - Start



Figure 12: External Rotations - Finish



Figure 13: Posterior deltoid and rotator cuff stretch



Figure 14: Anterior deltoid stretch



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