

Rehabilitation of the Shoulder in Tennis Players

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REHABILITATION OF THE SHOULDER IN TENNIS PLAYERS

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The tennis athlete who repeatedly hits overhead strokes places extreme demands on the shoulder. Exercise for the prevention of injuries and also shoulder rehabilitation following injury create challenges for the physical therapist, trainer, player, and physician alike.

The shoulder girdle is particularly prone to injury because it has to maximally accelerate and decelerate the arm while maintaining precise control over the racquet at ball strike. It is difficult to maintain the balance between motion and stability in a tennis player who performs this repetitive motion that generates high-magnitude forces about the shoulder during various tennis strokes.^{3,8} The complex interaction of muscle fatigue, eccentric overload, and primary instability with secondary impingement can cause disability in tennis players. Muscular fatigue leading to inflammation and tendon failure with decreasing efficiency of the dynamic stabilizers of the shoulder can result in a rotator cuff tear in a senior tennis player.

Exploration and understanding of these aspects help develop a shoulder rehabilitation and conditioning program that will diminish disability and enhance performance in a tennis player. This article focuses on the nonoperative therapy and a preventative conditioning program for the shoulder in tennis players.

UNIQUE PROBLEMS IN THE TENNIS ATHLETE

The shoulder is of paramount importance for the competitive tennis athlete. The demands placed on the shoulder during overhead activities such as the serve, the overhead smash, and high forehand or backhand volley, place large stresses on a joint that obtains stability from capsular and musculotendinous

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Table 1. MODIFICATIONS OF STRENGTH TRAINING

Exercise	Problem	Alternate Exercise
Wide grip bench press (Fig. 18)	Anterior shoulder stress	Narrow grip press (Fig. 19)
Chest flies supine	Anterior shoulder stress	Standing flys, hands in view
Military press (Fig. 20)	Impingement and anterior shoulder stress	Incline press, narrow grip
Triceps pullovers	Impingement	Triceps press-downs
Lateral pull-downs, behind neck	Impingement	Lateral pull-downs, to chest
Pull-ups, behind neck	Impingement	Front pull-ups

machine or free weights to three times a week to allow for full muscle recovery. An experienced strength training coach should be used for optimal results and safety, as well as avoiding re-injury to the shoulder. The strengthening program that is selected may be used in conjunction with a daily variable resistance rubberized cord program.

The ultimate goal of the resistance training program is to create power, endurance, and strength. The program begins with a low line and a low load. Once muscle endurance develops, the strength portion of the rehabilitation program can be instituted. Development of strength occurs by increasing the load and reduction of the number of repetitions. Power can be now achieved by shortening the durations between repetitions.

Return to Tennis

Timing is crucial in deciding when the tennis player who presented with shoulder pain and went through a rehabilitation program should return to the



Figure 18. Wide grip bench presses increase anterior shoulder stresses.