

1999-2000

www.wrestlingusa.com January 15, 2000 VOL. XXXV, NO. 6 \$4.00

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WEIGHT TRAINING

Protecting The Shoulder

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surveillance System, the shoulder has a long history of being one of the top two most frequently injured bodyparts in wrestling (the other being the knee). Increasing the strength of your shoulders can reduce your risk of incurring an injury while wrestling. In addition, several precautions can be taken to ensure that the strength training program itself doesn't predispose you to a shoulder injury.

THE SHOULDER COMPLEX

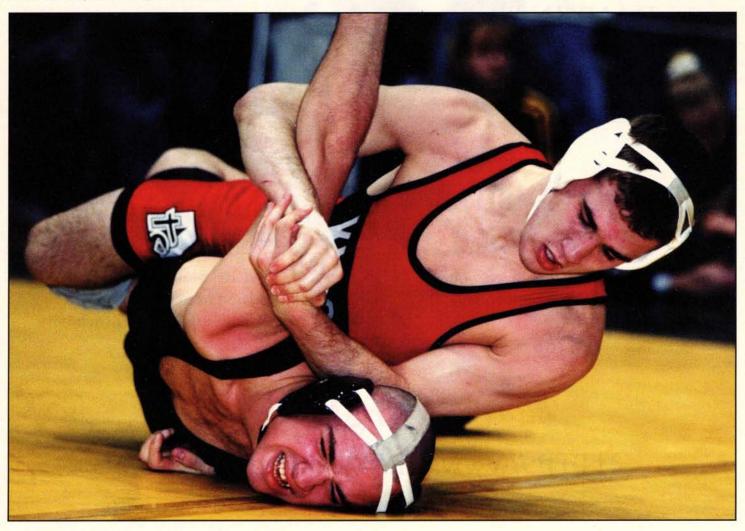
The so-called "shoulder complex" consists of the shoulder joint — technically known as the "glenohumeral joint" — and the shoulder girdle. The former structure is a typical ball-and-socket joint, formed by the union of the round head of your upper arm (the "ball") and the shallow cavity of your shoulder blade (the "socket"). The extensive mobility offered by this skeletal

arrangement allows a wide variety of movements over a considerable range of motion. But what the shoulder complex provides in mobility, it sacrifices in stability. These two factors — namely mobility and instability — make the shoulder complex quite prone to a host of injuries.

THE SHOULDER MUSCLES

Although the ligaments of your shoulder joint don't furnish much in the way of sta-

Jon Garvin with a technical fall in 5:25 over Rich Lettington of Eddyvill-Blakesburg, lowa, in quarterfinal action. Garvin won the 140 lb. 2A lowa State title at 135 last year. Photo by John Johnson.



bility, the muscles crossing and covering the joint provide added strength. The primary muscles of your shoulders are the deltoids, the so-called "rotator cuff" and the trapezius.

Deltoids

Your deltoids or "delts" are actually composed of three separate parts or "heads." The anterior deltoid is found on the front of your shoulder and is used to raise your upper arm forward; the middle deltoid is found on the side of your shoulder and is involved when you lift your upper arm sideways (away from your body); the posterior deltoid resides on the back of your shoulder and is used to draw your upper arm backward.

Rotator Cuff

Several deep muscles of the shoulder are often referred to as the "rotator cuff." This functional unit includes the "internal rotators" (the subscapularis and the teres major) and the "external rotators" (the infraspinatus and the teres minor). In addition to performing rotation, these muscles stabilize the shoulder joint against subluxation and prevent shoulder impingement syndrome (which is a general term that is used to describe a number of problems including bursitis and bicipital tendini-

Trapezius

Your trapezius is a kite-shaped (or trapezoid-shaped) muscle that covers the uppermost region of your back and the posterior section of your neck. The primary functions of your "traps" are to elevate your shoulders (as in shrugging), to adduct your scapulae (pinch your shoulder blades together) and to extend your head backward. The trapezius is often considered part of the neck musculature.

SHOULDER EXERCISES

This is a list of the most popular exercises that can be performed to directly strengthen the muscles of your shoulders using conventional equipment:

1. Front raise.

This is the best exercise for isolating your anterior deltoid. You can perform this movement with dumbbells or manual resistance.

2. Lateral raise.

You can isolate your middle deltoid with this movement. It can be done with dumbbells, a machine (selectorized or plateloaded) or manual resistance.

3. Posterior raise.

This movement is best for exercising your posterior deltoid. You can do this exercise with dumbbells or manual resistance.

4. Seated press.

This multiple-joint movement involves your anterior deltoid and your triceps. It can be performed with a barbell, dumbbells, trap bar, machines (selectorized and plate-loaded) or manual resistance.

5. Internal rotation.

This exercise is best for isolating your internal rotators. You can do this movement with dumbbells or manual resistance.

6. External rotation.

This movement is best for isolating your external rotators. It can be done with dumbbells or manual resistance.

7. Shoulder shrug.

You can effectively isolate your trapezius (upper fibers) with this exercise. It can be performed with a barbell, dumbbells, trap bar or machines (selectorized and plateloaded).

8. Scapulae adduction.

This exercise also involves your trapezius (middle fibers). You can do this movement with a barbell, dumbbells and machines (selectorized and plate-loaded).

9. Upright row.

This multiple-joint movement involves your trapezius, biceps and lower arms. It can be performed with a barbell, dumbbells, machines (selectorized and plateloaded) or manual resistance.

GUIDELINES AND PRECAUTIONS

Sometimes the strength training program is the genesis of shoulder problems and may actually predispose you to an injury. The following precautionary measures can lower that risk:

1. Refrain from doing exercises in which

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the bar travels behind your head thereby creating shoulder pain. Some individuals may find it difficult -- or even impossible -- to perform pain-free exercises in which they push or pull the bar behind their heads such as doing the behind-the-neck seated press or lat pulldown. In fact, this position may exacerbate shoulder impingement syndrome. Simply doing those same two exercises with the bar positioned in front of your face (rather than behind your head) will reduce the orthopedic stress in your shoulder area. This is not to say that exercising with the bar behind your head cannot be done. Rather, exercising with the bar behind your head should not be performed if it cannot be done in a pain-free manner.

- 2. Do only a few movements in each workout to directly address your shoulder region. Although there are a wide variety of exercises that you can do to strengthen your shoulders, it isn't necessary to do all of them every time that you work out. Doing more than a few exercises for your shoulders in any given workout on a regular basis can eventually lead to overtraining or, worse, an overuse injury.
- 3. Avoid overworking your anterior deltoid. Most individuals perform far too

many exercises that involve the front part of their shoulders. Of the nine shoulder exercises that have been previously mentioned, the front raise and seated press directly address the anterior deltoid. However, a number of other movements involve the anterior deltoid indirectly. For example, the bench press is primarily an exercise for the pectoral muscles of the chest but it also provides indirect work for the anterior deltoid (as well as the triceps). Other movements that indirectly involve the anterior deltoid include the incline press, decline press, dip and bent arm fly (or "pec dec"). If your training involves much indirect work for your anterior deltoid, you should keep the direct work to a minimum.

4. Provide equal attention to muscles that oppose each other. Your muscles are arranged in your body in such a way that they perform opposing functions. As an example, your anterior deltoid raises your upper arm forward and your posterior deltoid draws your upper arm backward. When one muscle acts in opposition to another, it is referred to as an "antagonist." It is important to provide antagonistic partnerships with an equal — or nearly equal — amount of work so that there isn't a muscle imbalance between the two areas.

Therefore, you should perform approximately the same volume -- that is, frequency of training, number of exercises and sets -- for the posterior muscles of your shoulders as the anterior muscles.

In linking these last three points, let's suppose that your training targets your shoulder region three times per week. Furthermore, you prefer to do three exercises during each workout for your shoulders. That said, your three weekly shoulder routines could look like this:

Monday

Front raise, lateral raise, posterior raise.

Wednesday

Internal rotation, external rotation, seated press.

Friday

Shoulder shrug, upright row, scapulae adduction

In this way, you will (1) target all of the major muscles of your shoulders in a balanced manner; (2) avoid overtraining your anterior deltoid (assuming that other exercises in your program offer a minimal amount of indirect work for that muscle); (3) provide a great deal of variety in your workouts; and, most importantly, (4) protect your shoulders against injury.

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