

## Diving Specific Shoulder Strengthening Exercises

Divers young and old and of all skill levels will at one point in their career have pain in their shoulders. Shoulder problems have plagued many divers and have resulted in missed practices, lost opportunities, surgery and even retirement. Platform divers are more at risk due to the increased forces the shoulder must withstand. A platform diver hits the water at speeds up to 35 miles per hour subjecting the shoulder to tremendous stresses. But it is not just platform divers who can have shoulder issues. Springboard divers as well are very prone to shoulder issues. Shoulder and arm positions during the hurdle, arm swing and during twisting dives all can over-strain tight, weak or poorly conditioned shoulder structures.

The shoulder is a very complex joint with over 17 muscles having an effect on its function. The shoulder joint, called a ball and socket joint, is actually very unstable and leads to numerous problems. Muscles of the rotator cuff provide the joint with both mobility and stability. (See Shoulder Anatomy Picture)

Divers can have problems resulting in muscular strains, rotator cuff tendinitis or tears, a torn labrum or traumatic dislocations. The primary restraints in the shoulder protecting it from problems are the four relatively small muscles of the rotator cuff and others that give the joint stability.

Most divers have been shown shoulder strengthening exercises at some point by a coach or trainer. But there is a lot of confusion on when and even how to perform these essential exercises. Very often they are done incorrectly which can lead to even more problems.

The rotator cuff must be strong enough to allow for not only fluid movement of the arms but with sufficient strength to protect the joint and its vital structures during the moments when the diver needs it the most, during water entry and swim out.

The most common and convenient way to strengthen the shoulder is by using elastic bands or tubing. These bands are very light weight and can easily be traveled with in a diver's backpack to and from the pool or dry land training area. The bands are secured to a doorknob or other object or stood upon for the exercise. Exercise bands come in various strengths or resistances so the athlete can choose which is right for their needs. Most often the red or green bands will provide plenty of resistance to challenge the muscles.

The most common rotator cuff strengthening exercise is Internal and External Rotation. Internal Rotation is performed by grabbing the tubing and rotating the hand inward toward the abdomen, keeping the elbow close to the side. ( See Shoulder IR 1 and 2) External Rotation is performed by rotating the hand out away from the abdomen. (See Shoulder ER 1 and 2) This strengthens the cuff while the arm is at the side. To strengthen it in a more diving specific

position, perform the same routine with the elbow out 90 degrees to the side. Rotate hand up and down. (See Shoulder 90-1 and 90-2).

Diagonal raises strengthen several muscles at the same time and move the shoulder into a very functional pattern. Stand on the end of the exercise band. Start with your hand across the other hip with your thumb toward your body, slowly rotate your arm up and out across your body ending up with your thumb pointing back high above your shoulder. (See Shoulder Diagonal Pictures 1 and 2).

Overhead press exercises help strengthen the shoulder in a very functional, diving specific position. To do this, stand on the tubing and start by pressing the arm above the head. At the end of the movement, push your hand up as high as you can moving only your shoulder blade keeping your arm straight and above your shoulder. Return to the starting position and repeat. (See Shoulder Press Picture)

All of above exercises should be performed using 2 sets of 20 repetitions. Do each exercise slowly with careful attention to detail and good form. You should not have any shoulder pain while doing any exercise.

Scapular retraction exercises are used to correctly train the scapula to position itself to better allow other exercises to perform correctly. This exercise does not require any tubing or resistance. Start by shrugging your shoulders up toward your ears. Then pinch your shoulder blades back squeezing them together. Then lower your shoulder blades as you lift your chest up. Hold this end position for 10 seconds then relax. Do this 8-10 times.

The final exercise is called the Wall Stance. This is performed by standing next to a wall with the arms at a 90 degree angle to the wall. Have as much of your body from your shoulder blades to your finger tips in contact with the wall. (See Wall Stance Picture). Hold this position for 1 minute and perform 3 sets.

These exercises are perfect for both regular exercise or pre-practice. They can be used to help loosen up the shoulders prior to practice or competition. As the exercises become easier, increase the number of repetitions and sets performed. Sets of 20-25 repetitions increase strength but more importantly endurance.

Building strength in the shoulder musculature will not only prevent shoulder problems associated with diving but also lessen your chances of wrist and elbow problems as well. Divers who follow a regimented shoulder strengthening program will be better prepared for the

demands that the sport of diving places on the shoulder. They will be at less risk for injuries that could affect their performance or advancement in the sport.

BIO:

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