

Aquatic Rehab Goals for Shoulder Injury.

Beth Scalone, PT, DPT, OCS

A common question, “Why the shoulder, when I can easily work that body part on land?” The answer is Aquatic manual techniques and exercise are a great adjunct to land-based therapies for a variety of diagnoses. Water exercise has been proven safe and effective for rotator cuff tears, frozen shoulder and post-op total shoulder replacement. Understanding how to keep the shoulder healthy and strong while performing water exercise can prevent injury or shoulder pain complaints. Many of our clients are in the pool for core and spine strengthening. To achieve maximal spine stability the exercises include upper extremity movements. Nothing is worse when a client comes in for a back injury but then develops a shoulder problem because of incorrect form when performing their water exercise. Correct technique and understanding the mechanics of the shoulder are paramount to a safe and effective program.

The shoulder is listed as a “ball and socket” joint. But upon looking at the anatomy, one quickly realizes the joint configuration is not a deep pocket but more on the lines of a golf ball sitting on the tee. What does this mean functionally? It means our shoulder has a large freedom of movement to be able to reach in all directions. It also means our shoulder gets its stability and strength through coordinated muscle movement. When these movement patterns are altered due to imbalance or injury, biomechanics are altered leading to pain and loss of function.

Three main goals are required for all shoulder pathology recovery:

1. Normal mobility and joint play.
2. Correcting movement dysfunction and gaining scapular motor control.
3. Gaining rotator cuff strength and endurance.

Joint mobility can be restricted due to muscle tightness, joint capsule tightness or arthritis/ joint space narrowing. This often responds best to light, pain free warm up exercise to increase blood flow to area, followed by manual techniques such as AquaStretch™, joint mobilization and passive stretching to the tight tissues. Stretching and gaining mobility cannot be done in isolation. In order to return to function, it is essential to restore normal movement patterns.

Clinical pearl: when stretching ask the client, “Where do you feel the stretch?” make sure they are elongating the muscle and stretching the area you intended, not the shoulder joint itself.

Don’t forget the mobility of the thoracic spine. A stiff midback will lead to increased stress to the neck and shoulders so add thoracic mobility exercises in your aquatic routine.

Clinical pearl: Easy thoracic rotation exercise to implement is “book opening”. Stand with your left side next to pool wall, left arm is out straight at about 90 degrees of flexion and against the wall. Your right foot is in front of the other (squat down so the shoulders are at water height). Keeping left arm at the wall turn your upper body and trunk to the right, pull right shoulder blade back and reach right arm to the wall behind you. Inhale as you rotate. Perform 3-4 times and repeat on the other side.

The shoulder blade moves. Problems arise when it moves too much or too little. Regaining scapular motor control requires a balance between 17 muscles. Stretching what is tight, relaxing overused,

compensatory muscles such as the upper trapezius must occur first. Activities to facilitate and strengthen those weaker and “lazier” muscles must then be presented into the rehabilitation program, otherwise the person will go back to their old habits. To start the retraining of the lower and middle trapezius muscles and serratus anterior muscle initiate movements below or at 90 degrees of elevation and gradually progressed to over-head. Resistance must be high enough to elicit strengthening but low enough to prevent compensation from the dominant muscles. Cuing and being stickler for form is part of the therapist’s job.

Clinical pearl: Start with isometric or small range activation of these muscles while looking to relax the upper trap and scapula-humeral muscles for the shoulder. Once the person has ‘connected’ to the correct muscle, increase challenges with greater range and concentric activity.

The rotator cuff will help you throw a fast ball, but its primary function in daily activities is to stabilize the humeral head in the glenoid. The rotator cuff helps keep the ball down in the socket when reaching overhead. The cuff counter acts the force of the deltoids that drive the humerus upward. Without this control the subacromial space narrows pinching the soft tissue structures found there, including the supraspinatus, bursae and biceps tendon. Again, isolated control, lighter resistance and quality of movement are the focus early in rehabilitation.

Clinical Pearl: When performing shoulder rotation exercises be sure the person is rotating from the gleno-humeral joint and not the whole shoulder complex (this includes clavicle and shoulder blade along with the humeral head). Make sure the shoulder stays away from the ear, a popular cue is, “Draw your shoulder blade down towards you opposite back pocket.”

How does the water help achieve these three goals?

First the buoyancy of the water allows for greater flexibility and stretching, especially with skilled techniques such as AquaStretch™. Second the buoyancy allows for the client to focus on correct muscle patterns vs. fighting gravity with lifting and reaching at least to 90 degrees. The weaker muscles do not have to fight against a strong pull from the dominant muscle group, improving movement patterns. Lastly the drag forces allow for equal resistance about the joint for balanced strength.

Give your clients more than they expected by fine tuning your aquatic rehabilitation and exercise program to enhance shoulder and upper quadrant function!