Carrying the Weight of the World (No wonder your shoulders are killing you)

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Besides low back pain, shoulder pain is one of the more common problems I treat in physical therapy. It is also one of the most common complaints amongst my personal training clients. There are many well documented exercises to strengthen the shoulder, especially the deltoids and rotator cuff. Why then do so many people continue to have problems in this area? Let’s first examine the shoulder:

Anatomy

The shoulder girdle is essentially made up of 4 joints (there are actually 5, but the other one does not really apply to this article):

1. Glenohumeral (GH) joint: this is what everyone knows the shoulder to be – the joint between the arm (humerus) and the socket of the shoulder blade (scapula).

2. Sternoclavicular (SC) joint: the connection between the sternum (chestbone) and clavicle (collarbone) – in the chest

3. Acromioclavicular (AC) joint: the joint between the scapula and clavicle – on the tip of the shoulder

4. Scapulothoracic (ST) joint: where the scapula sits on the ribcage – in the upper back

Additionally, the spine and ribs play a huge role in proper shoulder function, and a lack of mobility in this region is often a cause of shoulder pain. Finally, there are over 20 muscles, and about a dozen ligaments that surround the shoulder girdle – all of which have to work together to maintain painfree shoulder function.

Biomechanics (this can get confusing, if so – skip to the next section)

Most people do pretty typical exercises for the shoulder, these include front raises, lateral raises, rear delt raises, various angles of pressing movements (military, bench, etc.), rows, and lat. pulldowns. People also may rotate the shoulder in and out with a rubber tubing or band. Let’s say about 10 different exercises. Most people do not move through an entire range of motion (ROM) for exercises like the front and lateral raise (generally only to about a 90 degree angle from your body), even though most injuries occur overhead (maybe that’s because we neglect that region). Now let’s look at what the shoulder (GH joint) is capable of (assuming that you move through a complete ROM) :

1. In a vertical position (standing or sitting), the arm moves upwards straight in front of us, out to the side, backwards, and everything in between; in 360o of motion. So thus far we have 360o

2. In the same vertical position, the arm can pull something down (like a rubber tubing or band) throughout the same 360o of motion. So 360 going up and 360 pulling down = 720o

3. Laying on your back lifting up = another 360o. Now we are at 1080o

4. Laying on your stomach lifting up = 360o. Total= 1440o

5. Adding rotation to each of those angles: external rotation = 1440, internal rotation = 1440. Total = 4320o

6. Now add stabilization (vs. movement) at each angle, and the total is 8640o (that’s a bit more than 10!)

Function

The shoulder is a unique joint in the body for what it is required to do physically. The shoulder must have a proper balance of strength, flexibility, speed, power, endurance, coordination, mobility vs. stability, and tension vs. relaxation – all throughout 4 joints, over 20 muscles, a dozen ligaments, and 8640 planes of motion! And you are thinking that 10 exercises are going to cut it? I have seen many very strong people, including fitness professionals, who can move a ton of weight, but lack the flexibility/joint mobility to even hold their arm vertically overhead. I have seen others whose strength is only in a limited range of motion. Try this exercise (only if you are able to do “normal” pushups): start in a pushup position, now lower yourself to just one inch above the ground, maintaining a good straight back and legs. Now try to walk forward in this position on your hands and tiptoes. If done correctly, you will resemble an alligator. This exercise utilizes muscles that are commonly exercised, but in a range that many people avoid. After all, let’s examine some of the common medical advise people are given regarding shoulder problems: don’t do the following - overhead activity, reaching backwards or sideways, bench press (especially bringing the bar to the chest), lat. pulldowns behind the head, or over-rotate – basically your arm should be stuck in a sling all the time. While some of this has some truth to it, most of these statements are just part of the “C.Y.A. mindset” of most medical professionals – the less people do, the less likely they will hurt themselves, and hence, the less likely they are to sue someone. Let me just say, there are very few bad exercises, but many exercises done badly. There is also a difference between exercises that should be performed when you are healthy vs. if you already have problems with your shoulders. Here are some examples of exercises that can be added to a pre-existing shoulder workout routine – these should only be done if the shoulders are healthy and painfree, and you should stop immediately if you experience pain.

**Windmills**

A kettlebell works well for this one, but any form of weight can be used, and initially this should be done without weight – only working on maintaining a vertical arm. Stand with feet about shoulder width apart, 1 arm directly overhead. Imagine a rope tied to your wrist and the other end attached to a spot on the ceiling directly above you keeping that arm vertical the entire time. Bend down, either reaching the opposite hand between the feet or sliding it along the inside of the leg on the same side (left hand along left leg for example). As you attempt to reach for the floor, you must keep the other arm completely vertical, which requires rotating the shoulder as your body goes down. Return to starting position and repeat. This not only works the shoulder, but the core muscles and lower body flexibility as well.

**Halo**

Again, a kettlebell works well here, but you can also use a dumbbell, medicine ball, etc. Circle the bell around the head as if forming a halo. Make sure to go in both directions.

**Tornado Ball**

This is beneficial for anyone involved in high velocity throwing or swinging sports (i.e. tennis, golf, volleyball, etc). Place a medicine ball in a pillowcase (start with a very light weight ball). While holding the end of the pillowcase, simulate a throwing motion down and back up at a high speed while trying to not let the ball hit you in the back. This requires you to slow the ball down at the end (utilizing the rotator cuff muscles), and to rotate your body (working on spine mobility). You can also perform the same idea, but in the opposite diagonal direction across your body. Make sure that this is performed in all directions at a high speed (start slowly and then

Tea Cups

Imagine holding a cup of tea in your palm. Start with your hand in front of your body, move the hand along side the waist and straight back. Swing the arm to the outside (keeping the palm up), then overhead, back to the outside, and to the starting position. Reverse direction if desired, or add a small/light medicine ball for resistance – just remember the ball should rest on the palm (do not hold it with the fingers)

Breathing

You are probably asking, why are you telling me how to breath and what does this have to do with my shoulder? Let me first say, that overusing the muscles around the shoulder girdle can cause an overuse type of situation which will cause the shoulder to work improperly. Now let’s see how you breath: place one hand over your belly button, the other hand on your chest. Now take a deep breath and feel how your hands move. Which hand moved more? For most people, it is the hand on the chest. This unfortunately is not what you want.