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SELF-MANAGEMENT: PATIENT SECTION

Y exercises for correcting the most common faulty movement pattern of the shoulder/neck region[☆]

D.C. Craig Liebenson^{*}

L.A. Sports & Spine, 10474 Santa Monica Blvd., #304, Los Angeles 90025, USA

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Shoulder and neck problems frequently persist even after rest, physical therapy, medication, injections and even surgery. One of the great misunderstandings about musculoskeletal pain (MSP) is that it is due to some injury or structural pathology seen on an MRI or X-Ray. In spite of more and more structural imaging pain problems are becoming more persistent and chronic!

Over the past few years a new more functional approach has come into focus. Modern assessment of MSP has shifted from diagnosis of structural pathology to functional pathology. Dysfunction is now realized to be the “missing link” in the management of persistent MSP (Wainner et al., 2007). In particular, the assessment and correction of faulty movement patterns which are the real source of biomechanical overload in the kinetic chain (Dome and Kibler, 2006).

It is typical to have shoulder or neck pain without any relevant structural pathology on an MRI or X-Ray. Many people have also been shown to have arthritis, or other structural problems such as a rotator cuff tear without having any symptoms whatsoever (Fredericson et al., 2009). What then is it that predisposes one person to have pain or loss of physical capacity in one’s sport or activity?

A recent Stanford University study found that over 20% of their NCAA collegiate volleyball players WITHOUT shoulder problems had either tears or arthritic

degeneration in their shoulders (Fredericson et al., 2009). The authors concluded that IF someone with pain has such structural abnormalities it should not be automatically assumed that they need surgery or need to live with the pain. Instead the real source of pain usually lies elsewhere.

The answer lies in what is called functional pathology of the motor system or dysfunctional movement. The most important type of dysfunction is a faulty movement pattern. In the upper back, shoulder girdle or neck area the key faulty movement pattern is an abnormal **scapulo-humeral rhythm** (see Figure 1). This causes the shoulder girdle to shrug up towards the ear(s) and results in increased neck/shoulder muscle tension, rounded shoulders, and forward head posture (see Figure 2). These are the hallmarks of dysfunction which predispose to either pain or loss of athletic performance.

Once identified this faulty scapulo-humeral movement pattern or shrugged shoulder(s) should be the first goal of treatment for musculoskeletal pain or training to build physical capacity for athletic development. This hand-out will show a simple training method called the Y exercise which can be used to both identify and correct such a dysfunctional movement pattern.

The Y exercise involves testing and training with the arms in an overhead position making a letter Y shape. Some clinicians or trainers will also use the T or W position.

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^{*} Tel.: +1 31047 02909; fax: +1 31047 03286

E-mail address: craigliebensondc@gmail.com.

URL: <http://craigliebenson.com/>.

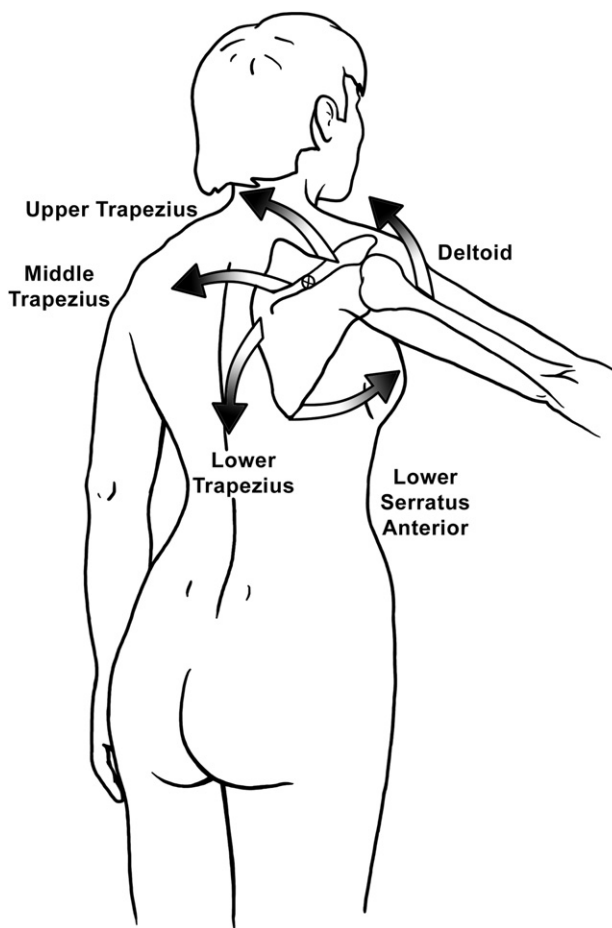


Figure 1 Normal Scapulo-Humeral Rhythm (excessive activity in the upper trapezius & deltoid combined with under-activity of middle trapezius, lower trapezius, & serratus anterior results in a dysfunctional shrugged shoulder movement pattern).

The Y exercise utilizes an important method called shoulder packing or scapular setting. The key to the exercise is to “pack” the shoulder down and back. Imagine standing with one arm extended in front of you with your palm facing down. Now, push down as if pushing down on the top of a stick that is at chest height (see [Figure 3](#)). Feel how your shoulder & shoulder blade muscles - in particular your latissimus dorsi - tighten as you push down on the stick. This feeling is the key to stabilizing or setting the scapulae (shoulder blade).

The Y Exercise – Shoulder Packing (“scapular setting”)

To start:

- Stand facing a wall (about 1–2 inches away)

- Place palms on the wall
- Raise arms up in a Y position (see [Figure 4a](#))

- a) REACH up & shrug” – Pack up (see [Figure 4b](#))
 - Shrug shoulders upwards ears until neck shortens
- b) “ROLL back & down” - Pack down (set scapulae) (see [Figure 4c](#))
 - Roll (turn) hands out
 - Bring shoulders back & down until neck lengthens
- c) RAISE Arms Off Wall – (see [Figure 4e](#))
 - Tighten “core”
 - Lift arms off the wall
 - Feel mid-back – just below the shoulder blades working
 - Note: Avoid lifting arms off wall by arching lower back into sway back
 - Perform 10–12 slow repetitions

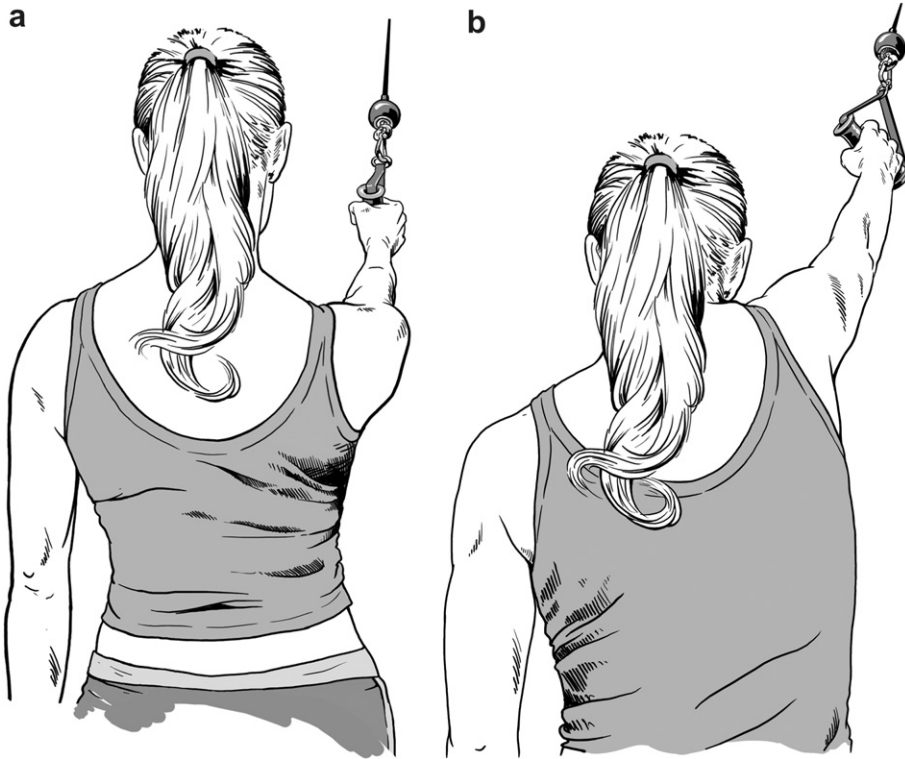


Figure 2 Overhead Pull Down (a) normal (b) abnormal (shrugged).

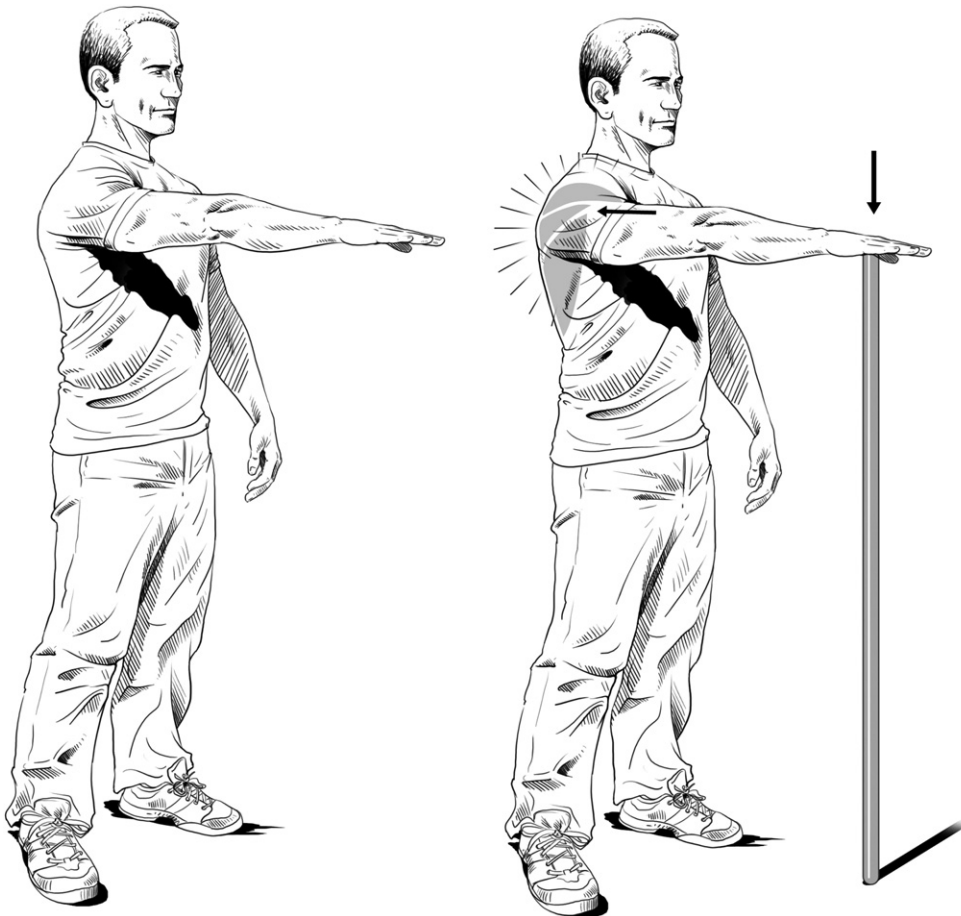


Figure 3 Packing the Shoulder Down & Back.

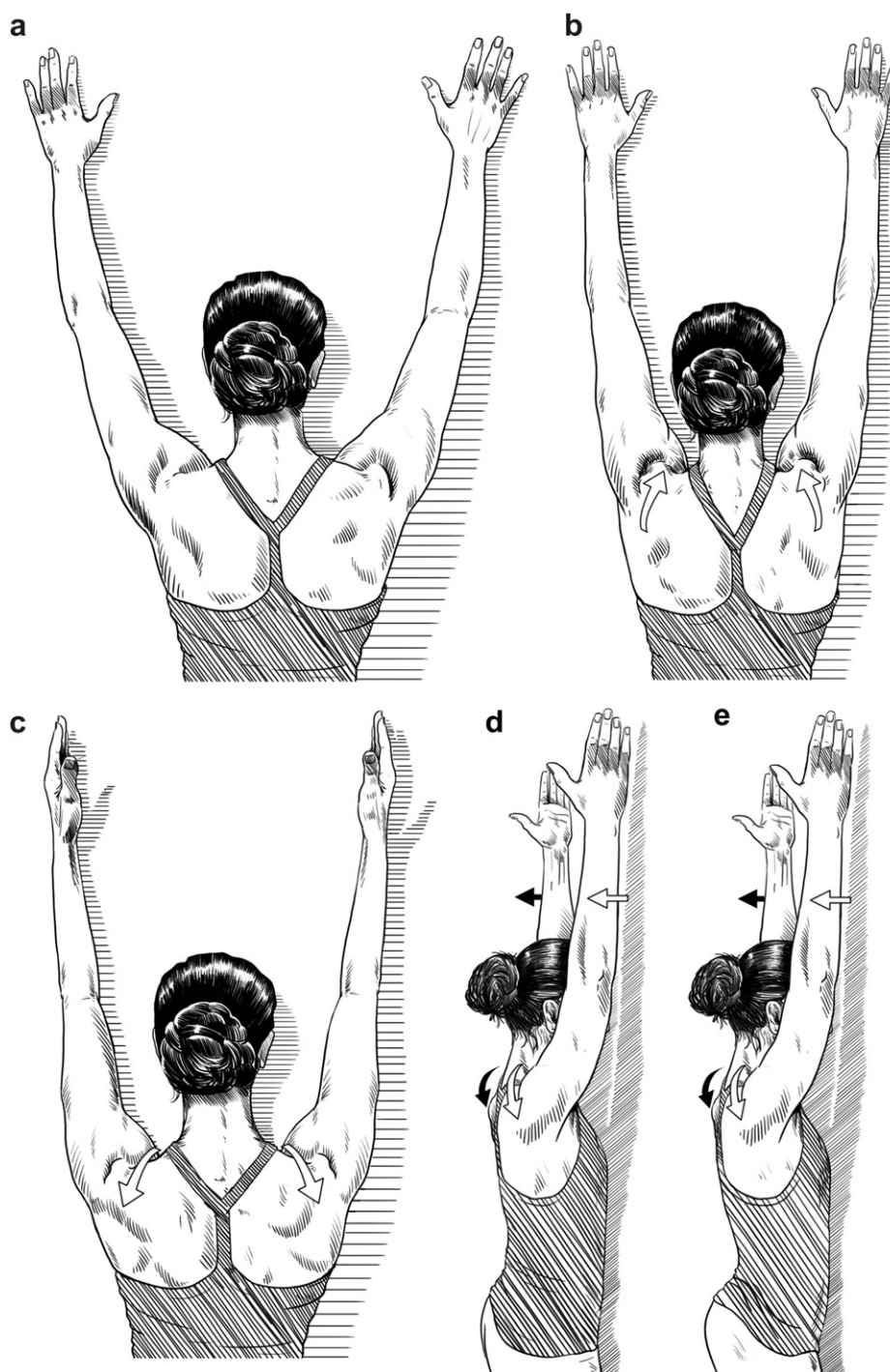


Figure 4 The Y Exercise – Shoulder Packing (a) start position; (b) Pack up (reach up); (c) Pack down (roll back & down); (d) Lift off (raise off wall); (e) Incorrect lift off with sway back.

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