Subscapularis: Overlooked and Undertreated

By David Kent, LMT, NCTMB

Keeping It Simple Series

The subscapularis is often neglected and/or undertreated as a cause of posterior shoulder pain with restricted range of motion (ROM). According to Travell and Simons, "differential diagnosis of subscapularis TrPs includes C7 radiculopathy, thoracic outlet syndrome, adhesive capsulitis and 'impingement' syndrome."[1] In this article, I will review how to determine when the subscapularis muscle is responsible for causing shoulder pain and restricted ROM, as well as review its anatomy, function, trigger-point patterns and treatment options.

Intake and health history forms will help you identify some common factors that may contribute to the formation and perpetuation of trigger points, as well as the shortening of the subscapularis muscle. According to Travell and Simons, some of these factors include the following:

- Repetitive movements that involve medial rotation, such as swimming the overhead stroke, playing tennis or pitching a baseball;
- Repeatedly lifting boxes or other objects overhead with both arms extended;
- Reaching backward to break a fall;
- Soft-tissue stress when the shoulder joint is dislocated;
- A fracture to the proximal humerus or trauma to the shoulder joint capsule;
- The immobilization of the shoulder in an adducted and medially rotated position over a long period of time, such as when the arm is in a sling; and
- Prior surgeries and procedures.[2]

Taking a photo of your client in front of a postural analysis grid chart is an effective method of evaluating, documenting, educating and ultimately showing a client his or her postural progress over a series of treatments. For example, a constant slumped, forward-head, adducted-scapulae posture will perpetuate trigger points and the shortening of muscles, like the subscapularis, by continually keeping the humerus in a position of medial rotation.3 [Photo 1]

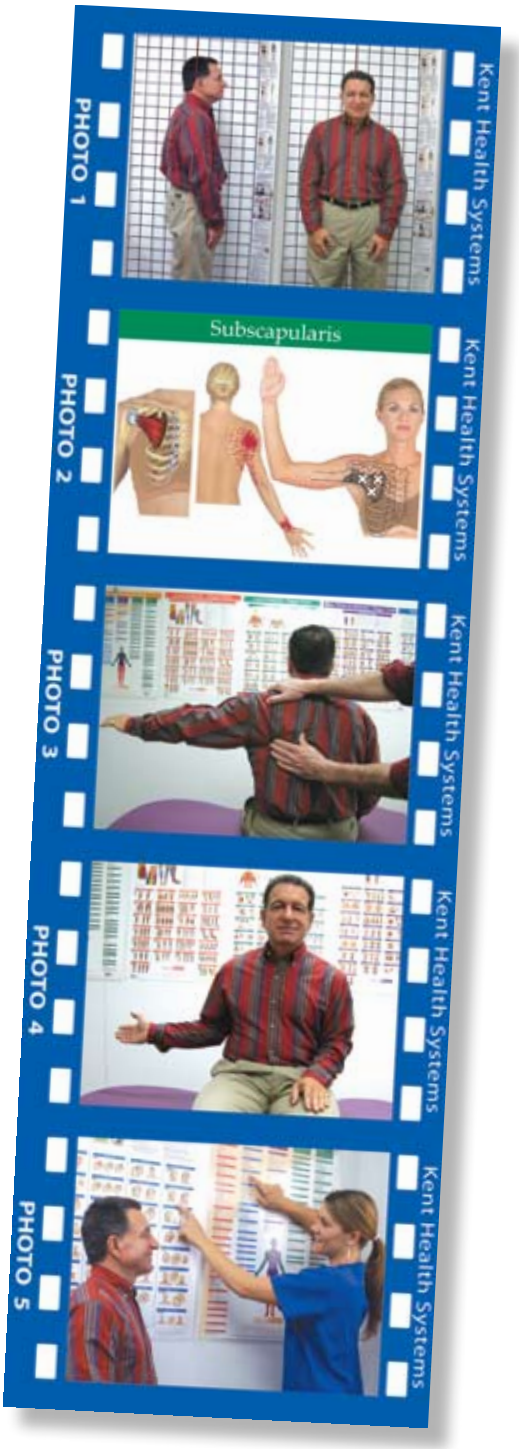
SYMPTOMS

Trigger Points: When trigger points are present in the subscapularis muscle, they produce referred pain "in the posterior deltoid area…down the posterior aspect of the arm, and then skip to a band around the wrist."4 [Photo 2] Remember that referred pain is a symptom; we want to address the cause. So intake forms, postural analysis evaluations, range-of-motion and orthopedic assessments, and being familiar with trigger point patterns are all helpful to designing and implementing a customized therapy plan. But treating a trigger point is only part of the solution. We need to avoid a recurrence in the future. It is therefore necessary to demonstrate to your client which muscles need more lengthening and which ones need more strengthening so that all of the joints are properly aligned and moving through their full range of motion.

Anatomy: The subscapularis is one of four muscles that make up the rotator cuff, along with the supraspinatus, infraspinatous and the teres minor muscles. In my dissection seminars, I always highlight the subscapularis, which is the most anterior of the rotator cuff muscles. [Photo 2] It is a thick triangular muscle that attaches medially on the anterior or costal surface of the scapula on the subscapular fossa; it forms part of posterior wall of the axialla. Laterally it attaches on the lesser tubercle of the humerus and the lower half of the shoulder joint capsule.

Actions: The subscapularis is primarily responsible for medially rotating and adducting the arm. It also helps to hold the humeral head in the glenoid cavity. To check for shortening in the subscapularis it is necessary to evaluate both abduction and external rotation.

Abduction: According to Travell and Simons, when evaluating a shoulder with restricted abduction, it is first necessary to determine if the restriction is being caused by the inability of the scapula to move on the rib cage, the humerus to properly articulate in the shoulder (glenohumeral)



joint, or a combination of the two. The difference can be easily determined by placing one hand on the client's scapula to prevent its movement while asking the client to abduct his/her humerus. [Photo 3] When the subscapularis is involved, it restricts glenohumeral movements like abduction and lateral rotation, but it does not restrict scapular movements on the rib cage. If scapular movements are restricted, it is necessary to evaluate muscles that run from the torso to the scapulae like the pectoralis minor, serratus anterior, trapezius and the rhomboids.5

Lateral Rotation: When checking lateral rotation at the shoulder, adduct the arm by placing the elbow at the side. Bend the elbow 90 degrees to show the amount of rotation at the shoulder joint. [Photo 4] The arm should be able to laterally rotate 90 degrees. In addition to the subscapularis, other synergistic muscles like the teres major, latismus dossi and pectoralis major also adduct and medially rotate the arm. These muscles must also be evaluated and treated. Keep in mind that the antagonistic muscles are weak and over lengthened, so they need strengthening. Muscle movement charts can aid in quickly identifying the muscles involved and show the normal range of motion for the muscles and joints being evaluated. [Photo 5]

Treating the subscapularis: While there are many different approaches to treating the belly of the subscapularis muscle, I find one particularly effective; however, with this method some clients may only be able to tolerate static pressure versus movements, such as with-fiber or cross-fiber techniques.

1. Place the client in a supine position.
2. Stand facing the client at level of client's shoulder.
3. In the palm of your non-treating hand, cradle the scapula while using your fingertips to secure the vertebral border of the scapula; abduct the scapula. [Photo 6]
4. Position the fingers of the treating hand against the belly of the subscapularis muscle. [Photo 7]

   NOTE: Some clients may be ticklish, but this is easily overcome by using the client's hand during the treatment. Have the client place his/her hand on the ticklish region while you treat the area between his/her fingers. [Photo 8]
5. Drape the client's arm across his/her chest (adduction) to shorten the muscle. [Photo 9]
6. Press the fingers of your treating hand down toward the table and into the subscapular fossa.

Before the session ends, advise your client that he/she will receive the most benefit from your therapy session by actively engaging in self-care stretching techniques, such as the doorway stretch, which will further help improve muscle length, and create and maintain balance in the shoulder. [Photo 10]

You have now identified several factors associated with subscapularis pain and discomfort with the help of assessment aids and tools like intake forms, charts and postural analysis photos. Continue to study and broaden your skills with hands-on seminars and DVD programs. And to share your tips and experiences in the treatment room, please drop me a line at info@kenthealth.com.

For more information related to this month's topic, check out "Charting Your Progress: Visuals for Success" (February 2008) and "Getting Comfortable with Postural Analysis" (July 2008) online at www.massagetoday.com.

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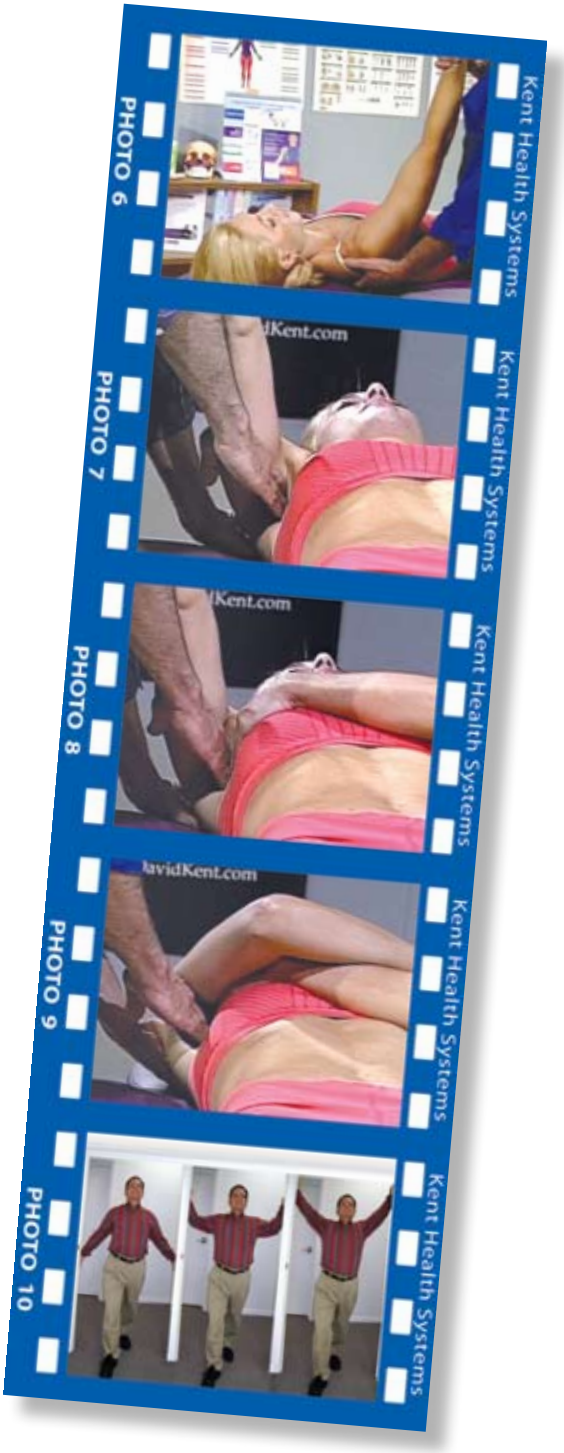

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[1-5] Simons DG, Travell JG, et al. Myofascial Pain and Dysfunction: The Trigger Point Manual, volume 1, 2nd ed. Williams and Wilkins: 1999.

A revised version was also published in…
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