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Scapular dyskinesis: practical applications

Babette M Pluim

Goran Ivanisevic had a career-limiting shoulder injury, Martin Verkerk took almost 2 years for his shoulder rehabilitation and Johan Santana is out for this season after re-injuring his shoulder. You are confronted with a tennis player presenting with pain when serving. Does your heart sink?

To address these problems, Dr Ben Kibler spearheaded the 2nd International Conference on the Scapula in Lexington, Kentucky in July 2012. You can read the consensus paper from this conference in the September issue of the *BJSM*¹; you can listen to podcasts with Dr Kibler on the *BJSM* website. What are the practical applications for clinicians working with overhead athletes?

The main focus of the conference was scapular dyskinesis—altered motion and positioning of the scapula.^{1–2} This condition is frequently found in athletes with shoulder injuries but can also be present in asymptomatic individuals. Its exact role in shoulder dysfunction is unknown. It is still unclear whether it is the cause or an effect of shoulder injuries (a compensatory mechanism for shoulder pathology).

IS IT WORTH EXAMINING THE PATIENT FOR SCAPULAR DYSKINESIS?

The shoulder consensus group agreed that scapular dyskinesis is an impairment of shoulder function and that it may be a risk factor for frank/clinical shoulder injury. Scapula dyskinesis should be evaluated and treated, as part of normal shoulder rehabilitation programme, because the untreated condition may exacerbate shoulder symptoms—or adversely affect treatment outcomes. In particular, shoulder impingement syndromes are associated with, and may influence (or be influenced by) scapular dyskinesis.

HOW DO YOU ASSESS SCAPULAR DYSKINESIS?

Step 1—Observation: There was consensus favouring the use of the dynamic scapular dyskinesis test.^{1–3} This consists of weighted shoulder flexion and abduction

movement while the scapular motion is closely observed. The patient holds a 2-pound (1 kg) weight in each hand and first forward flexes and then abducts both arms. The clinician observes whether there is any winging, or prominence of the medial or inferior scapular borders, or any lack of coordinated movements (such as early scapular elevation or shrugging, when lifting the arm, or fast downward rotation when lowering the arm). Any deviation from the norm is noted as a 'yes' (dyskinesis is present) or 'no'.

In the past, the lateral scapular slide test was commonly advocated (measuring the distance from the inferior angle of the scapula to the nearest spinal process while the arm is elevated), but this test is unreliable with inadequacy of measurement values and questionable validity of the results.^{1–4}

Step 2—Manual correction (a process to evaluate the effect of manual intervention to alter the motion see if this influences symptoms): The consensus conference recommended two tests—the scapular assistance test and the scapular repositioning test.

The scapular assistance test consists of manually assisting scapular upward rotation during shoulder elevation (by pushing the inferior medial border of the scapula laterally and upward while stabilising the upper medial border) and determining the effect of this manoeuvre on pain (figure 1). The test is positive when assisting the shoulder blade relieves or diminishes impingement symptoms. The scapular assistance test is therefore particularly helpful on painful arc/impingement issues, but cannot be used in asymptomatic athletes.^{1–5}

The scapular repositioning test (also called the scapular retraction test) consists of the manually positioning and stabilisation of the medial border of the scapula, with simultaneous posterior tilting (in a slightly retracted position on the thorax; figure 2). The test is positive if it produces a reduction of pain or if there is an

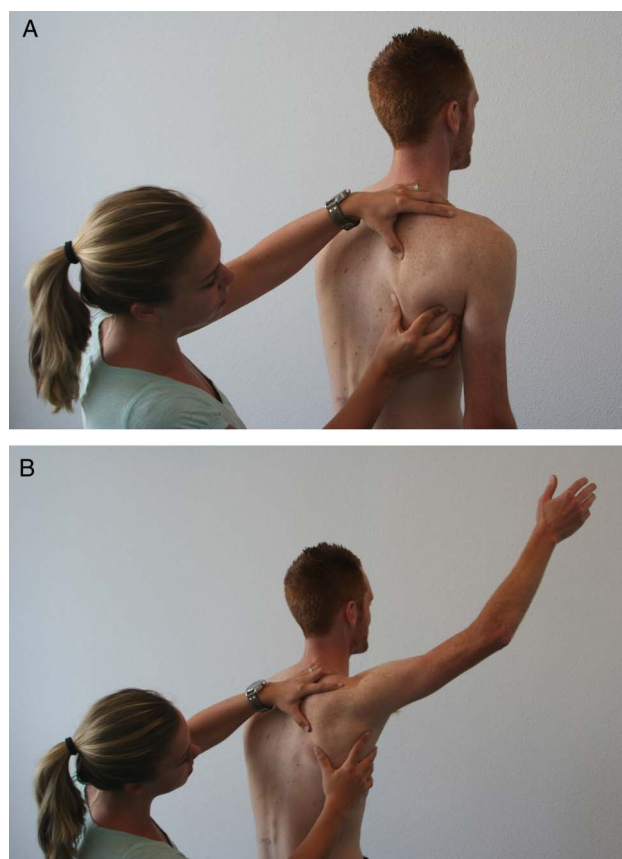


Figure 1 (A) The scapular assistance test. The examiner assists gentle pressure to assist scapular upward rotation and posterior tilt and (B) during elevation of the arm. The test is positive when the patient experiences less pain during elevation. Access the article online to view this figure in colour.

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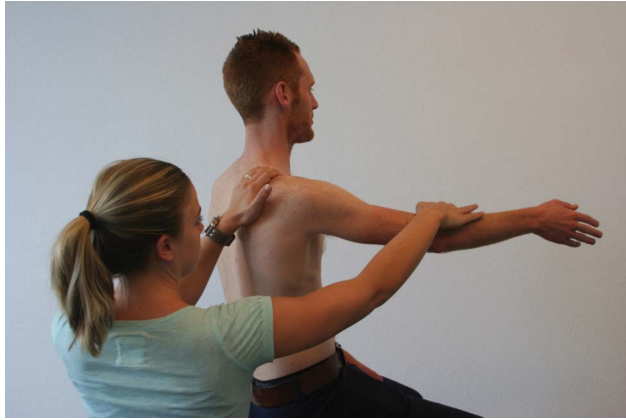


Figure 2 The scapular repositioning test consists of the manually repositioning the scapula into greater retraction and posterior tilt. The test is positive if there is a reduction in pain or an increase in strength during isometric arm elevation. Access the article online to view this figure in colour.

increase in shoulder elevation strength, when the scapula is stabilised during isometric arm elevation. The scapular repositioning test is particularly useful for rotator cuff strength and labral issues.^{1–6}

Step 3: Evaluation of the adjacent structures—including the acromioclavicular joint, rotator cuff, labrum and biceps tendon—to identify any other causative factors for movement dysfunction. This step is important because dyskinesia itself is not an injury and can be directly related to glenohumeral angulation, shoulder muscle activation or a variety of other shoulder pathologies (acromioclavicular joint strain, rotator cuff tendinopathy and tears, labral injury, shoulder impingement, etc).

After assessing the factors that may cause scapular dyskinesia, the clinician prescribes a series of rehabilitation exercises to improve scapular muscle strength, alter scapular position and reduce shoulder pain.

The consensus statement presents detailed examples of rehabilitation programmes that have been specifically developed to improve scapular muscle strength and movement. These low-load, low-activation exercises and stretching exercises are designed to improve the flexibility and strength of the scapula muscles, and the surrounding tissues and to correct the dysfunctional scapula motion seen in this condition.

Feeling any better now, and ready to help your next patient who presents with a nagging shoulder injury? You will be, after having read the 2013 consensus statement from the Scapular Summit. And you can always decide to attend the next Scapular Summit in 2015 in person!

Competing interests None.

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