CLINICAL ASSESSMENT OF SHOULDER

1

TENDON TESTS

- ✓ **Speed's test**
- ✓ **Yergasons test**
- ✓ **Empty/full can test**
- ✓ **External rotation lag sign**
- ✓ **Lift off test**

2

SPEED TEST

Biceps test/Straight arm test

Purpose

To identify biceps tendon pathology in the bicipital groove and unstable superior labral anterior posterior (SLAP) lesions.

Technique

Patient position Sitting or standing with the affected shoulder in 60–90° of forward flexion. The elbow is fully extended and forearm supinated.

Clinician position Standing on the affected side, one hand stabilizes the patient's shoulder while the other is placed on the anterior surface of the lower forearm.

Action The patient is asked to maintain the start position as downward pressure on the lower forearm is applied by the clinician.

Positive test Pain localized to the bicipital groove may indicate a tendinopathy or a true tenosynovitis of the long head of biceps. Deeper-seated pain may implicate biceps/labral complex injury.

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YERGASON'S TEST

- **Purpose**
- To identify a lesion of the long head of biceps tendon or an unstable superior labral anterior posterior (SLAP) lesion.
- **Technique**
- ***Patient position :***Sitting or standing with the arm in the anatomical position
- ***Clinician position :*** Standing on the affected side, the examiner takes the forearm and flexes the elbow to 90° leaving the forearm in a pronated position. The elbow is stabilized with one hand, keeping the upper arm adjacent to the patient's side. The heel of the hand is placed over the dorsal surface of the lower radius with fingers wrapped around the lateral aspect of the forearm in preparation to provide resistance.
- ***Action :***The patient moves the forearm into supination against resistance.
- ***Positive test :*** Reproduction of the patient's pain suggests the presence of a lesion of the long head of biceps or a SLAP lesion. If during the test the biceps tendon is felt to reproduce a ***'clicking'*** sensation familiar to the patient, laxity or a tear of the transverse humeral ligament (that contains the tendon in the groove) should be suspected

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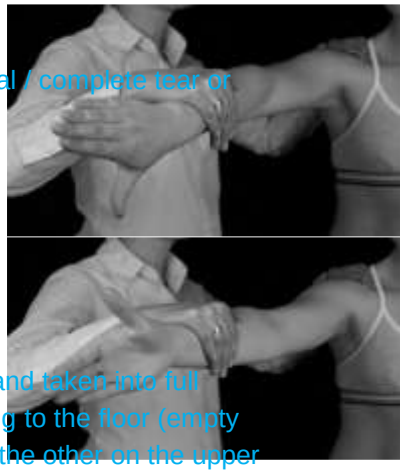
EMPTY/FULL CAN TESTS



- **Purpose** To detect the presence of supraspinatus tendinopathy, a partial / complete tear or neurogenic weakness of supraspinatus.
- **Technique**
- ***Patient position*** Standing or sitting on the edge of a treatment couch.
- ***Clinician position*** Standing on the affected side facing the patient.
- ***Action*** The shoulder is *passively* elevated to 90° in the scapular plane and taken into full internal rotation with the forearm in pronation so that the thumb is pointing to the floor (empty can test). The clinician stabilizes the **scapula** with one hand and places the other on the upper surface of the patient's forearm. Downward pressure is then applied to the arm while the patient maintains this position. The test is then repeated with the arm externally rotated so that the thumb points upwards (full can test).
- ***Positive test*** Reproduction of the patient's pain without weakness is suggestive of supraspinatus impingement or tendinopathy while painful weakness may indicate a partial or complete tear.

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- **The full can test was originally described in the context of strength assessment, not pain provocation (Kelly et al 1996). Itoi et al (1999) compared the tests' accuracy in diagnosing full thickness tears of supraspinatus and found them to be broadly equivalent. For strength assessment, however, the full can test is probably preferable, because its position is less likely to cause painful impingement and consequent inhibition
- **Clinical tip**
- Weakness in the absence of any pain may result from a C5 palsy, suprascapular neuropathy or Parsonage–Turner syndrome, a viral neuritis affecting the brachial plexus.

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External rotation lag sign
Infraspinatus spring back test

- **Purpose**
- To assess the integrity of the infraspinatus tendon and expose weakness associated with suprascapular neuropathy.
- **Technique**
- ***Patient position*** Sitting or standing with the affected arm in a dependent position with the elbow flexed to 90°.
- ***Clinician position*** The clinician stands adjacent to the affected side, using one hand to support the patient's elbow and the other to take hold of the patient's arm just above the wrist. The shoulder is *passively elevated 20° in the scapular plane*, then taken to about *5° short of full external rotation.*
- ***Action*** Still supporting the patient's elbow, the tester asks the patient to maintain the external rotation, and then releases the wrist.
- ***Positive test*** A positive test is recorded if the patient is unable to maintain the rotated position and there is a 'lag' or 'spring back' towards the start position.
- A lag of 5–10° may indicate a complete tear of infraspinatus or supraspinatus. A 10–15° lag is strongly suggestive of a tear of both tendons or may result from neuropathy.

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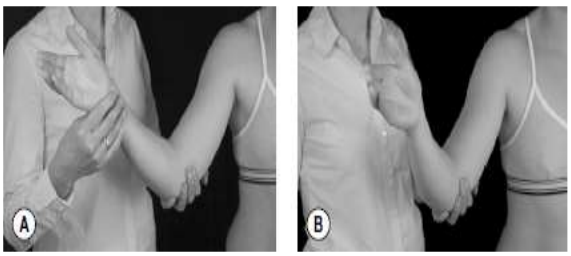

➢ *Hornblower's sign*

- is an indication of major posterior cuff disruption, i.e. a tear of infraspinatus and teres minor. The patient is unable to externally rotate the abducted arm so when asked to take both hands simultaneously to the mouth (as if holding a wind instrument) the position cannot be maintained on the affected side and the shoulder falls into an internally rotated position

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LIFT OFF TEST

- **Purpose** To test for a partial or complete tear of subscapularis.
- **Technique**
- ***Patient position*** Standing or sitting on the edge of a treatment couch with the shoulder internally rotated so that the dorsum of the hand rests against the mid-lumbar spine.
- ***Clinician position*** Standing behind the patient, the distal end of the patient's forearm is lifted away from the lumbar spine, so that the shoulder is fully internally rotated.
- ***Action*** With the arm passively 'lifted off', the patient is asked to maintain the position without extending the elbow as the support of the clinician's hand is removed.
- ***Positive test*** An inability to maintain the lifted-off position signifies a complete tear of the subscapularis tendon.

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BELLY-PRESS TEST OR *NAPOLEON TEST (TO TEST WEAKNESS OF SUB SCAPULARIS)*

- Patient is seated with the palm of the hand pressing against the abdomen while keeping the shoulder in full internal rotation. The test is positive if this position cannot be maintained and the elbow swings posteriorly as the patient attempts to compensate by pulling the hand against the abdomen (Gerber et al 1996)

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IMPINGEMENT TESTS

- NEER'S SIGN
- HAWKINS KENNEDY IMPINGEMENT TEST
- INTERNAL ROTATION RESISTANCE STRENGTH TEST
- POSTERIOR IMPINGEMENT TEST

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NEER'S SIGN

- **Purpose** The primary purpose of the sign is to identify symptomatic subacromial impingement involving the rotator cuff, subacromial bursa and long head of biceps.
- **Technique**
- ***Patient position*** Sitting or standing with the arm in the anatomical position.
- ***Clinician position*** The clinician stands on the affected side and stabilizes the scapula with one hand and grasps the arm below the elbow with the other hand.
- ***Action*** The arm is then passively elevated into full flexion with the scapula stabilized.(some authors recommend addition of internal rotation to further stress supra spinatus and infraspinatus in subacromial area.)
- ***Positive test*** Pain is reproduced at the end of the passive elevation movement.

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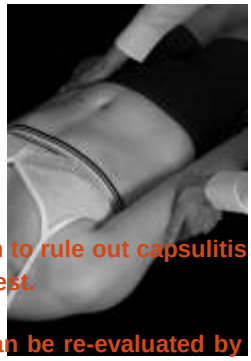

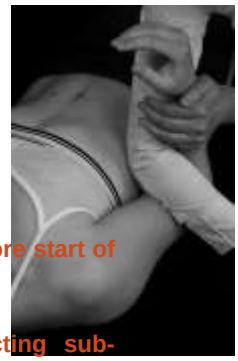

- ** it is better to check elevation and external rotation to rule out capsulitis before start of test , it may lead to false positive findings in neer's test.
- Neer recommend that once the sign is positive it can be re-evaluated by injecting sub-acromial local anesthetics ,relieve in pain + neer's test.
- BURSITIS VS TEDINITIS
- **If bursa is the main cause of pain in this test then it can be further tested by applying isometric resistance to supraspinatus (in initiating abduction) and external rotation but with distraction at joint .If pain lessens in this maneuver(application of resistance with distraction at joint) then go ahead to say that bursa is main culprit.**

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HAWKINS KENNEDY IMPINGEMENT TEST

- **Purpose** The primary purpose of the test is to identify subacromial or internal impingement.
- **Technique** ***Patient position*** Sitting or standing with the arm relaxed in the anatomical position.
- ***Clinician position*** Standing adjacent to the patient on the affected side, one hand is placed under the elbow, the other holds just above the wrist. The elbow is flexed to 90° and the shoulder taken passively into 90° of forward flexion.
- ***Action*** The shoulder is passively taken into internal rotation thereby rotating the greater tuberosity under the coracoacromial arch.
- ***Positive test*** Pain is reproduced increasingly towards the end of the rotation movement and indicates rotator cuff pathology involving the cuff itself, the adjacent bursa or the long head of biceps. The glenoid labrum is also vulnerable in this test May be positive in following
- *capsulitis *posterior instability * Acromio clavicular joint pathology
- ***coracoid impingement sign*** is a modification of this test and is thought to increase the contact between the lesser tuberosity and the coracoid process during the maneuver. The arm is taken into the same start position but 10–20° of horizontal adduction is added before applying the internal rotation component.

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POSTERIOR IMPINGEMENT TEST

- **Purpose** To test for internal impingement between the undersurface of the rotator cuff and the postero-superior part of the glenoid labrum.
- **Technique**
- ***Patient position*** Lying supine towards the edge of the couch.
- ***Clinician position*** Standing adjacent to the patient, the clinician takes the affected shoulder passively to approximately 100° of abduction and about 10° extension, supporting the elbow with one hand and the lower forearm with the other.
- ***Action*** The shoulder is passively taken into full external rotation.
- ***Positive test***
- Pain felt deeply in the posterior aspect of the shoulder may indicate
- posterior impingement.

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- *Posterior internal impingement can occur in people who repeatedly position their arm in a combination of 90° abduction and external rotation (e.g. swimmers, throwers, painters and decorators), particularly where high load and velocity are involved.*
- *This position causes the articular aspect of the rotator cuff tendons to become pinched between the humeral head and the postero-superior part of the glenoid labrum.*
- Internal impingement can occur in conjunction with shoulder instability, the test position being very similar to the apprehension test So a positive test should be interpreted in the light of the patient's history and other examination findings.
- Apply in Ant/Post directed force in 90,100,110 degrees of position.
- Ant directed force will produce pain not apprehension in case of post-sup impingement and

post directed will relieve.

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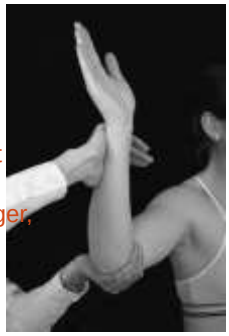
INTERNAL ROTATION RESISTANCE STRENGTH TEST

- Primary impingement occurs as a result of mechanical compression of the bursal/superior side of the rotator cuff, mainly involving the supraspinatus tendon
- Internal impingement results from injury to the undersurface of the rotator cuff or the glenoid labrum caused by impingement of the supraspinatus and infraspinatus tendons between the posterosuperior part of the glenoid rim and the humeral head when the arm is abducted to 90° and fully externally rotated. The condition is most common in the athlete involved in overhead throwing events
- ***Isometric resistance per above pic.ist ER then in IR***



- Comparative weakness of internal rotation represents a positive test and is suggestive of internal impingement. If internal rotation is stronger, primary impingement should be suspected.

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LABRAL TEST

CRANK TEST.

- **Purpose** To assess for an unstable superior labral anterior posterior (SLAP) lesion.
- ***Patient position*** Supine or sitting with the elbow flexed to 90°.
- ***Clinician position*** Standing adjacent to the affected shoulder, holding the patient's flexed elbow and forearm.
- ***Action***The patient's arm is passively elevated in the scapular plane to full range. While applying a gentle axial load through the longitudinal axis of the humerus, the shoulder is taken into full external (fig A) and then internal(fig B) rotation using the forearm as a lever.
- ***Positive test*** The patient's pain, a catching sensation, painful clicking or a combination of these are considered positive indicators of a labral tear and are most likely to be elicited during the external rotation part of the test.

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INSTABILITY TEST
APPREHENSION & RELOCATION TEST

- **Purpose** To detect anterior instability of the glenohumeral joint.
- **Technique** This test has two distinguishable components: apprehension and relocation.
- **Apprehension**
- ***Patient position*** Lying supine with the elbow flexed to 90°.
- ***Clinician position*** Standing by the couch on the affected side, one hand holds the lower forearm while the other supports above the elbow.
- ***Action*** The arm is abducted to 90° and the shoulder is then slowly externally rotated to 90°. This position may be enough to make the shoulder feel unstable and elicit a positive response from the patient, negating the need to proceed with the test further. If a positive response is not given, the hand supporting the elbow is then moved to the posterior aspect of the humeral head and an anteriorly directed force can then be applied to further challenge the stability of the shoulder.
- *Positive test* The test is considered positive for anterior glenohumeral instability if the patient registers *apprehension* during the maneuver or resists attempts to move the shoulder further. The patient may also recognize the sensation as being similar to the original injury or episodes subsequently.

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Apprehension rather than pain is the key point in this test of instability.

Feeling of apprehension lessens on application of this posteriorly directed force on anterior aspect of shoulder

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INFERIOR INSTABILITY

SULCUS SIGN

Feeling a sluclus(deep groove) under index finger show the result of inferior instability

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- ***POSTERIOR APPREHENSION TEST***
- Passively elevating arm in scapular plane to 90 degrees.Applying and maintaining axial compression (red arrow) while arm is simultaneously adducted & IR.
- A click /Posterior translation of humeral head prove this test positive.

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AC JOINT

O BRIEN'S TEST

- *Active elevation till 90 degrees.15-20 degrees adduction.*
- *Application of downward pressure in IR & pronated forearm position*
- ***SLAP lesion***: pain felt deep inside the shoulder, with or without a click, on testing with the thumb pointing down, relieved when repeated with the palm facing upwards.
- ***ACJ disorder***: pain felt on top of the shoulder, with or without a click, on testing with the thumb pointing down, relieved when repeated with the palm facing upwards.

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SCARF TEST

- *Passively position in 90 degrees flex.then passively horizontal adduct till the available ROM.*
- *Localized pain in Joint line or Pain in Epaullet area (C 4)*

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