

Conservative Treatment of the Shoulder

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Shoulder Conservative Treatment

- A controversial area in the physiotherapy world.
- The relevance of scapular dyskinesis is being queried
- Is strength more important than muscle patterning?

Subacromial Impingement

- Umbrella term not a pathoanatomic diagnosis
- Rotator cuff disease
- Increased Humeral head translation:
 - Superiorly
 - Anteriorly
- Leads to mechanical impingement of
 - Bursa
 - Rotator cuff tendons
- Scapular dyskinesis
- Anterior-inferior movement of the acromion



Impingement Tests

- No diagnostic evidence from the popular impingement tests

Myer CA, et al 2013

Subacromial Pain Syndrome

The term used today, but Ann Cools and Lori Michener, (2016) query if this umbrella term covers all the potential pain sources. Therefore should we use it at all?

- Bursal
- Rotator cuff
- Tendon failure due to loading,
- Scapula dysfunction,
- Muscle imbalances, muscle tightness
- Central sensitization.

Symptom Modification

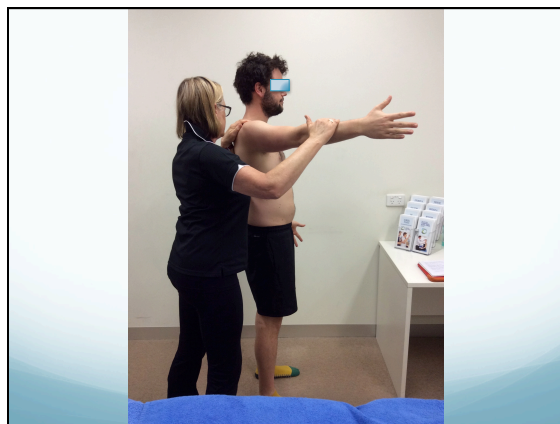
- Scapula assist test
- Scapula resist test (Kibler 2010)
- Dynamic Relocation Test
- Cervical
- Thoracic
- Kinetic chain



Suprapinatus

- The 'empty can' and 'full can' tests do not selectively activate the Supraspinatus
- 'Empty Can' activated 9 other mms equally as SS
- 'Full Can' activated 8 other mms equally as SS

(Boettcher CE, Ginn KA, Cathers I 2009)



Scapula Dyskinesis

- Alteration in the motion of the scapula
- Occurring during coupled scapulohumeral movements
- Inhibition or disorganization of active Scapular stabilising muscles is present
- Increased tone of muscles or tight connective tissue causing stiffness
- Increases the functional deficit with shoulder injury

(Kibler, 2003)

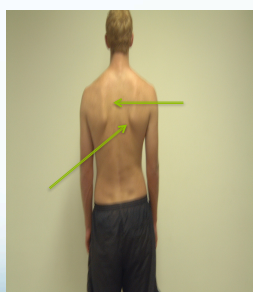
Clinical implications of scapular dyskinesis in shoulder injury

- Scapular involvement in almost all types of shoulder pathology, but not completely understood role in exacerbating shoulder dysfunction.

2013 consensus statement from the scapular summit

Scapular Dyskinesis

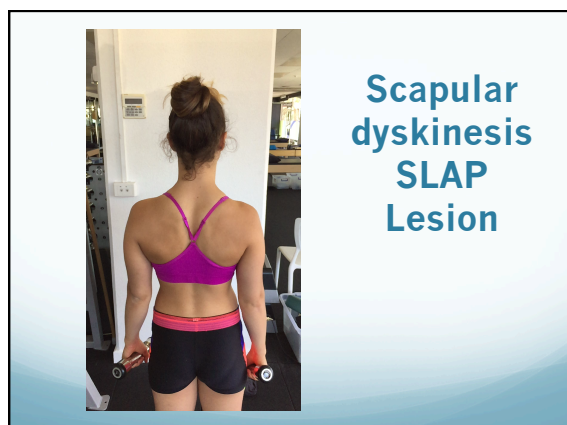
- Medial border winging
- Distal angle of the scapula anterior tilt
- Downward rotation



Clinical outcomes of a Scapular-focused treatment in patients with SPS

- Systematic review
- Only 4 papers, one just included taping not exercise
- No conclusions due to low number of studies
- Improved Scapular muscle strength in participants with SPS

Reijnenveld et al 2016



Scapula Stability Exercises

- Scapula stability exercises
- 20-30 degrees abduction
- Increased activation

Pizzari et al 2014

Exercises that optimize muscle activity

Push up plus exercise worked

Supraspinatus
Infraspinatus
Scapularis

Pizzari, Ganderton



Rotator Cuff Disease

- Degenerative changes increase with age leading to partial thickness and full thickness tears,
- Repetitive use of the arms, at or above shoulder level can cause fatigue and damage to the rotator cuff tendons.
- If the rate of tissue breakdown exceeds the rate of tissue healing, tendon degeneration and tear may occur.
- Not all tears are symptomatic
- Tendinopathy

Rotator cuff Tears

- A clinical diagnosis of a full-thickness tear of the RC cannot be conclusively reached using one or more of the lag signs

Miller C, Forrester G, Lewis J (2008)

Rotator cuff tendinopathy

- **Reactive tendinopathy**
Increase tenocytes,
Upregulation of
proteoglycans, eg aggrecans
Lead to increase in water
content
- **Tendon disrepair**
Tendon attempting to heal
itself –
results in disorganisation of
the tendon matrix
separation of the collagen
fibres
- **Degenerative tendinopathy**
(Cook & Purdham, 2009)
Rio (2015)
- Need to manage loading
- Possible bursa involvement
(Jeremy Lewis, 2009)

Tendon Program

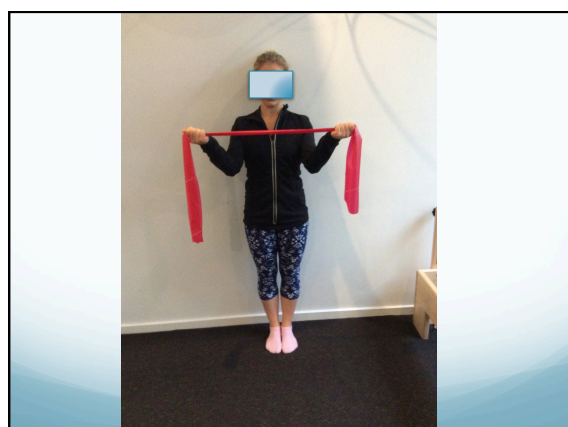


Subacromial Pain Syndrome

MRI

Large effusion
Subacromial space
Supraspinatus tear
AC joint degeneration

Surgery Recommended
Arthroscopic
decompression
Tendon repair
Pt did not want surgery
Pain settled with
conservative treatment



Atraumatic Anterior Instability

- Pathological increase in anterosuperior translation of the humeral head
- Different to laxity
- Often seen in the throwing athletes
 - Dead arm
 - Clicking ,catching
 - Feeling of apprehension
- Arm:
 - abducted to 90 degrees
 - externally rotated



Posterior Instability

Traumatic:

- Caused by a fall onto an outstretched internally rotated hand

Atraumatic:

- Commonly associated with multidirectional instability
- Is often missed in diagnosis of instability
- Instability in flexion, adduction and internal rotation
- Aggravated by:
 - pushing actions and
 - weight bearing through the arm
 Bench press, Push ups

Multidirectional Instability

- A symptomatic disability of subluxation or dislocation that occurs in two or more directions
- Repetitive micro-trauma imposed on a congenitally lax glenohumeral joint capsule
- Presents with generalized ligament laxity
 - Beighton criteria
 - Ehlers-Danlos Syndrome
- Management with exercise
 - Watson MDI program

(Watson et al, 2016)

Watson MDI Program (2016) for Multidirectional Instability



Scapular Stability in a stable position

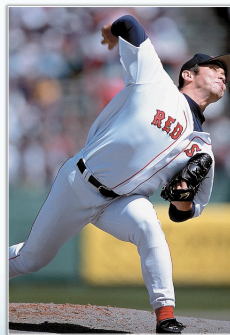


The Overhand Throw kinetic chain

The overhand throw is not an upper extremity action but an integrated motion of the whole body

20 % decrease in kinetic energy from the hip and trunk

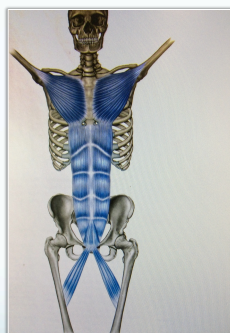
Causes 34% increase in the rotational velocity of the shoulder to impart the same amount of the force to the hand



Kinetic Chain

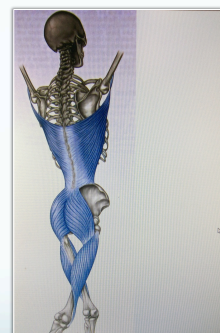
- Lower extremity
- Trunk rotation
- Scapular activity
- Glenohumeral joint rotation
- Elbow extension

Anterior Slings



Anatomy Trains Thomas Meyer

Posterior Slings



Anatomy Trains Thomas Meyer