

Shoulder and Elbow Problems: a Physiotherapy perspective

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Aims

Shoulder and Shoulder Girdle

- ▶ Anatomy review
- ▶ Common impairments of Shoulder and Shoulder Girdle
 - ▶ Adhesive Capsulitis
 - ▶ Painful Shoulder Syndromes
 - ▶ Impingement Syndromes
 - ▶ Rotator Cuff problems
 - ▶ Shoulder Instabilities

Elbow and Forearm Complex

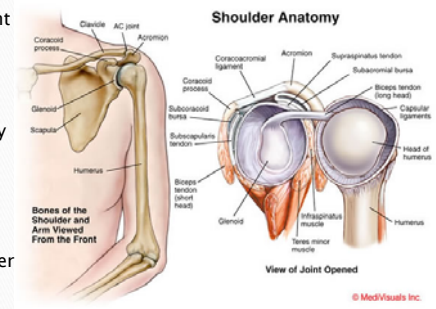
- ▶ Anatomy review
- ▶ Common impairments
- ▶ Physiotherapy management

Shoulder and Shoulder Girdle Anatomy review

- ▶ Combined mechanics of its joints and muscles provide for and control its mobility and stability
- ▶ Therapeutic exercise program for impaired function of the shoulder region needs consideration of:
 - Anatomic and kinesiological features
 - The state of the pathology
 - Functional limitations imposed by the impairments

Bony parts

- ▶ Sternoclavicular joint is the only bony attachment of the shoulder girdle to the axial skeleton
- ▶ Stability provided by intricate balance between scapular and glenohumeral muscles and the structures of the joints in the shoulder girdle



Glenohumeral joint

- ▶ Incongruous, ball and socket triaxial joint with a lax joint capsule
- ▶ Supported by tendons of the rotator cuff and Glenohumeral and coracohumeral ligaments
- ▶ Orientation of humeral head provides some stability (anteriorly, laterally and upward)
- ▶ Glenoid labrum
 - ▶ – deepens fossa, improving congruity
 - ▶ – attachment site for capsule

Stability – Static and dynamic restraints

- ▶ Static
 - Structural relationship of bony anatomy, ligaments, glenoid labrum
 - Adhesive and cohesive forces within the joint
- ▶ Dynamic Stability
 - Tendons of rotator cuff, blend with ligaments and glenoid labrum
 - – when muscles contract– tighten the static constraints
 - The long head of biceps and long head of triceps brachii attachments reinforce the capsule
 - Provide superior and inferior joint support respectively when functioning with elbow motions
- ▶ Neuromuscular control, including movement awareness and motor response underlies coordination of the dynamic restraints

Acromioclavicular (AC) and Sternoclavicular (SC) Joints

AC joint

- ▶ Plane, triaxial joint – with or without a disk
- ▶ Weak capsule
- ▶ Superior and inferior ac ligaments
- ▶ Acromial surface slides in same direction as which the scapula moves
- ▶ Motions affecting the joint
 - Upward rotation
 - Downward rotation
 - Winging of the vertebral border
 - Tipping of the inferior angle
- ▶ Stability – weak ac ligms supported by strong coracoclavicular ligament
- ▶ No dynamic support

SC joint

- ▶ Incongruent, triaxial, saddle shaped, with disk
- ▶ Anterior and posterior sc ligaments
- ▶ Interclavicular and costoclavicular ligaments
- ▶ No dynamic stability
- ▶ Scapular motions affecting the joint
 - Elevation
 - Depression
 - Protraction (abduction)
 - Retraction (adduction)

Functional articulations

- ▶ Scapulothoracic Articulation
- ▶ Actual Motions – as SC joint
- ▶ Component motions when humerus moves
- ▶ Upward rotation of the scapula – necessary component motion for full range of motion (ROM) of flexion and abduction of the humerus
- ▶ Tipping of scapula– necessary to reach hand behind back in conjunction with internal rotation and extension of humerus
- ▶ Winging of medial border – accessory motion with horizontal adduction of the humerus

Joint lesions of AC and SC joints

- ▶ Overuse syndromes
 - Arthritic or post-traumatic
 - Repeated stressful movements
 - arm at waist level e.g. packing assembly or
 - diagonal extension, adduction and internal rotation movements e.g. serving in tennis
- ▶ Subluxations or dislocations
 - falling against shoulder or against outstretched hand
 - Stretching of capsule and ligaments of either joint – permanent hypermobility
- ▶ Hypomobility
 - Decreased clavicular mobility may occur with sustained faulty postures involving clavicular and scapular depression or retraction.
 - Complications may contribute to a Thoracic outlet Syndrome

Referred pain

Cervical Spine

- Vertebral joints between C3 – C4 or C4 – C5
- Nerve roots C4 or C5

From related tissues

▶Dermatome

- C4 – trapezius to tip of shoulder
- C5 – over deltoid region and Lateral arm

▶Diaphragm: pain perceived in upper trapezius region

▶Heart: pain perceived in the axilla and left pectoral region

▶Gall bladder irritation: pain perceived at the tip of the shoulder and posterior scapular region

Nerve injury: Common sites in the Shoulder girdle

- ▶ Brachial Plexus in the Thoracic Outlet
- ▶ Compression in:
 - Scalene triangle
 - Costoclavicular space
 - Under coracoid process
 - Pectoralis minor muscle
- ▶ Suprascapular nerve in the Suprascapular Notch
 - Direct compression or nerve stretch e.g. Carrying heavy book bag over the shoulder
- ▶ Radial Nerve in the Axilla
 - Compression from continual pressure e.g Saturday night palsy

Adhesive capsulitis of the Glenohumeral Joint

Idiopathic Frozen Shoulder / Adhesive capsulitis

Primary

- Chronic inflammation in musculotendinous or synovial tissue – rotator cuff, biceps tendon, joint capsule
- Capsular thickening and adhesions

Secondary

- Period of pain and / or restricted motion
- RA, OA, trauma or immobilisation

Adhesive capsulitis

Three phases

"Freezing"

- Intense pain even at rest
- Limitation of movement 2–3 weeks after onset
- Acute phase –10 to 36 weeks

- Spontaneous recovery occurs on average 2 years from onset
- Frozen shoulder may be associated with diabetes, high cholesterol, heart disease and is also seen in patients with Dupuytren's contracture.

"Frozen"

- Pain with movement
- Significant adhesions
- Limited glenohumeral motions
- Substitute motions in the scapula
- Atrophy of deltoid, rotator cuff, biceps and triceps brachii
- Stage lasts 4 to 12 months

"Thawing"

- No pain
- No synovitis
- Significant capsular restrictions
- Stage lasts 2 to 24 months or longer



Health professional and Physiotherapy management (AC) Clinical Guidelines Overview:

Physio Aims

- Manage appropriately to the phase and thus pain mechanism involved.
- Increase flexibility of the tissues to increase ROM.
- Reduce Pain.
- Improve muscle balance around the shoulder.

Potential treatment:

These must be appropriate to the phase and thus pain mechanism involved.

- Soft tissue mobilisations
- Manual therapy
- Acupuncture / Electrotherapy
- Muscle Energy techniques
- Strengthening exercises
- Shoulder Distraction
- Advice and activity modification
- Pendulum exercises
- Heat / Ice
- Medication (NSAID's and Opioids)
- Corticosteroid Injection

If conservative measures fail then a capsular release or manipulation under anaesthetic (MUA) can be performed.

Trachstel (2009)

Common Impairments of AC

- Night pain and disturbed sleeps during acute flares
- Pain on motion and often at rest during acute flares
- Decreased joint play and ROM
 - usually limiting external rotation and abduction
 - with some limitation of internal and elevation in flexion
- Possible faulty postural compensations
 - protracted and anteriorly tipped scapula,
 - rounded shoulders,
 - and elevated and protected shoulder
- General muscle weakness and poor endurance in the glenohumeral muscles with overuse of the scapula muscles leading to pain in the trapezius and posterior cervical muscles
- Guarded shoulder motions with substitute scapular motions
- Decreased arm swing during gait

Common functional limitations/ disabilities

- Inability to reach overhead, behind head, out to side and behind back
 - Difficulty dressing e.g. jacket on
 - Reaching hand into back pocket (wallet)
 - Reaching out of a car window
 - Utensils to the mouth – eating!
- Difficulty lifting weighted objects – dishes in cupboards
- Limited ability to sustain repetitive activities

Painful Shoulder Syndromes

- Impingement Syndromes
- Rotator Cuff Problems
- Shoulder Instabilities
- Categories of Painful Shoulder Syndromes based on:
 - Degree or stage of pathology of the Rotator Cuff
 - Neer's Classification of Rotator cuff disease
 - Mechanical disruption and direction of instability or subluxation
 - Progressive Microtrauma (Jobe's classification)
 - Impaired Tissues

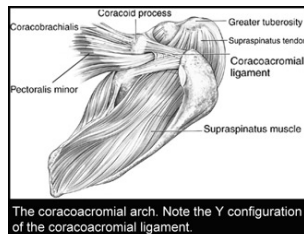
Shoulder Impingement

Soft tissue impingement describes the process that occurs when soft tissues are compressed between two or more solid surfaces that move.

In the shoulder this most commonly occurs as impingement of the rotator cuff tendons, causing compromise of the tendons and sub acromial bursa.

Extrinsic impingement

occurs between the under surface of the greater tuberosity/ superior aspect of the humerus and the coracoacromial arch (formed of the acromium and the coracoacromial ligament)



Intrinsic or internal impingement

this can occur posteriorly between the greater tuberosity and superior point of the labrum.

Anterior impingement beneath the coracoacromial arch is the most common presentation.

Subacromial Impingement Syndrome (SIS)

- The rotator cuff works a depressor and centraliser of the humeral head in the glenohumeral joint.
- As the arm is elevated the rotator cuff depresses the humeral head allowing it to glide easily underneath the acromion.

Abnormality of the rotator cuff leads to dysfunction of the rotator cuff.

- As the arm is elevated, the depressing and centralising effect is lost and the humeral head rides upwards closer to the acromion at risk of causing impingement.



Pathologies directly affecting the rotator cuff:

- Rotator cuff strain
- Partial or full thickness tear
- Calcific tendonitis
- Tendonopathy due to chronic overuse.

Indirect causes:

- Glenohumeral instability
- Labral tears, in particular SLAP tears
- Abnormal muscle patterning problems of the shoulder.

Subacromial Impingement Syndrome (SIS)

Underlying Mechanisms (NICE Guidelines, 2004)

- Bony anatomy and pathological factors
- Shoulder Instability - Rotator cuff weakness, Capsuloligamentous laxity.
- Impaired scapulohumeral rhythm and scapula instability
- Capsular tightness
- Postural factors
- Soft tissue changes - inflammation and thickening of the subacromial bursa

Characteristics and Clinical presentation

- Pain in the shoulder region particularly with over head positions.
- Night pain- which can prevent patient from lying on that side
- Can be sudden or insidious in onset.

Differential Diagnosis

- Adhesive capsulitis (Also presents with night pain, to differentiate from SIS assess if there is a capsular restriction indicative of AC)
- ACJ (Pain normally can be localised to the joint)
- Osteoarthritis (produces aching after activity)
- SLAP lesions (very similar presentation to SIS)

What can the health professional or physiotherapist do?

NICE guidelines

Aims of Physiotherapy

- Minimise pain
- Optimise function

Objectives of physiotherapy

- To reduce subacromial inflammation and manage pain.
- To improve posture
- To restore range, strength, stability and scapulohumeral rhythm.
- To identify when patients should be referred for an orthopaedic opinion.

Objective measures

- Disabilities of the arm, shoulder and hand questionnaire - DASH

Treatment modalities and their evidence (NICE) (SIS)

NSAIDS

- Relative rest and avoidance of aggravating factors can help settle inflammation
- Absolute rest is rarely necessary and may result in adhesive capsulitis.
- The potential benefits of short term (7-21 days) of NSAIDs outweigh the risks.

Cold therapy

- Cold packs - reduce inflammation and pain and settle irritation post exercises.

Restoration of range, strength, stability and scapulohumeral rhythm.

- Passive mobilization of the upper quadrant according to Maitland (1991) principles.
- Scapula stability when performing strengthening exercises is paramount.

Heat therapy

- Due to insufficient evidence, no recommendations can be made.

Ultrasound

- Except in calcific tendinitis, ultrasound is not beneficial in SIS.

Subacromial impingement

- Treatment of impingement syndrome involves:

Painkillers and anti-inflammatory medications

Physiotherapy

- Key part of management to work on good posture, shoulder blade positioning and strengthening of the weakened rotator cuff muscles
- Prevention advice

- Avoid excessive overhead activities

- Do not try to play or work through the pain

Steroid Injections

- reduces inflammation and pain

- short term benefit

- Improves exercise compliance - may compromise tensile strength of collagen for up to 14 days. Resistive exercises should be avoided during this time.

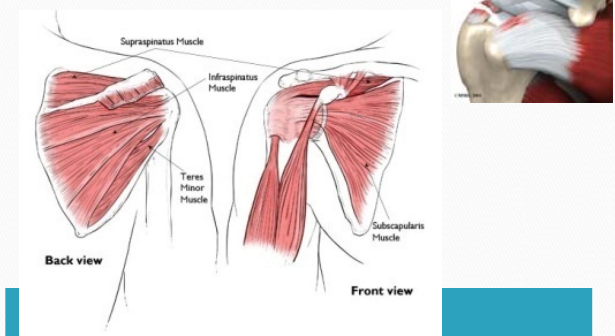
Surgery - if required - Subacromial Decompression (SAD)



Neer's classification of impingement

- ▶ **Stage I** - characterised by oedema and haemorrhage of the rotator cuff and subacromial bursa.
- ▶ This is most commonly seen in patients under the age of 25 years.
- ▶ **Stage II** - tendinitis / fibrosis / bursitis
- ▶ Usually seen in patients 25 - 40 years of age.
- ▶ **Stage III** - Chronic changes such as bone spurs and rotator cuff tears. (Neer later added further classification dividing lesions into outlet and non-outlet)
- ▶ Outlet lesions occur when the coracoacromial arch encroaches on the rotator cuff, e.g. acromial spurs; calcified coracoacromial ligament; inferiorly angulated anterior acromion (Bigliani type III acromial morphology).
- ▶ Non outlet or "Cuff" lesions, thickening and hypertrophy of the rotator cuff, contribute to uncoordinated rotator cuff/extrinsic muscle activity; often in combination with excessive gleno-humeral joint laxity, causing secondary impingement. This is most common in the younger age group.

Rotator Cuff



Based on Impaired Tissues

- ▶ Subdeltoid / subacromial Bursitis
- ▶ Supraspinatus tendinitis
- ▶ Infraspinatus tendinitis
- ▶ Bicipital tendinitis
- ▶ Other musculotendinous strains -specific to type of injury or trauma
 - Anterior - overuse with racquet sports
 - Pectoralis minor, subscapularis, coracobrachialis, short head of biceps strain
 - Inferior - from motor vehicle trauma
 - Long head of triceps, serratus anterior strain

Tendinitis / bursitis

- ▶ Supraspinatus tendinitis
- ▶ Lesion usually near musculotendinous junction
- ▶ Painful arc with overhead reaching
- ▶ Pain on palpation of tendon just inferior to anterior aspect of acromion when patient place hand behind back
- ▶ Difficult to differentiate partial tears from subdeltoid bursitis because of anatomic proximity
- ▶ Impingement test
 - Forced humeral elevation in the plane of the scapula while the scapula is passively stabilized so that the greater tuberosity impacts against the acromion
 - Or
 - Arm in internal rotation while flexing the humerus

Bursitis

- ▶ Subdeltoid or subacromial
- ▶ When acute symptoms are same as supraspinatus tendinitis
- ▶ Once inflammation is under control - no symptoms with resistance

Infraspinatus tendinitis

- ▶ Lesion usually near the musculotendinous junction
- ▶ Painful arc with overhead or forward motions.
- ▶ May present as a deceleration injury from overload during repetitive or forceful throwing activities
- ▶ Pain occurs on palpation of the tendon just inferior to the posterior corner of the acromion when patient horizontally adducts and laterally rotates the humerus

Bicipital tendinitis

- ▶ Long head of tendon in the bicipital groove beneath or just distal to the transverse humeral ligament
- ▶ Swelling in bony groove is restrictive and compounds and perpetuates the problem
- ▶ Pain on palpation over bicipital groove

Test

- ▶ Pain on resistance to forearm in a supinated position while the shoulder is flexing
- ▶ Rupture or dislocation may escalate impingement of tissues in the suprahumeral space due to loss of humeral depressor action

Other musculotendinous problems

- ▶ Racket sports
 - Pectoralis minor, short head of biceps and coracobrachialis subject to microtrauma
 - Controlled backward then rapid forward swinging of arm
 - Scapular stabilizers as they control the forward motion of the scapula
- ▶ Motor vehicle accidents
 - Long head of biceps and scapula stabilizers injury – hold on tight to steering wheel during impact
- ▶ Fall on outstretched hand or against shoulder
 - may also cause trauma to scapula stabilizers, cause symptoms when using arm or maintaining a shoulder position
- ▶ Injury, overuse or repetitive trauma
 - Any muscle being subjected to stress

Primary Impingement

- ▶ Painful arc at low levels
- ▶ High severity / irritability
- ▶ Doesn't usually respond to physiotherapy
- ▶ SAD likely be effective for these patients

(Neer, 1983)

- ▶ Predominantly caused by the architecture of the subacromial region
- ▶ Directly related to the variations in shape of the acromion process
- ▶ Flat, curved and hooked surfaces
- ▶ Acromial Osteophytes

(Epstein et al, 1993)

Secondary impingement– shoulder instability / subluxation

Multidirectional instability

- ▶ Physiologically lax connective tissue
- ▶ In GH joint the head translates to a greater degree than normal in all directions
- ▶ Inherent laxity (? BHS) or developed laxity due to continued stretching activities

Unidirectional instability

- ▶ May be result of physiologically lax connective tissue or also be a result of trauma.
- ▶ Usually involves rotator cuff tears
- ▶ Often damage to the glenoid labrum and tearing of some supporting ligaments

Cause or effect of faulty mechanics?

- ▶ Examination of cervical spine and shoulder girdle to differentiate signs and symptoms related to primary and secondary impingements or other causes of shoulder pain.

Postural malalignment and muscle imbalances

- ▶ Increased thoracic kyphosis with accompanying forward head, abducted and forward tipped scapula
- ▶ Decreased thoracic ROM
- ▶ Rotator cuff overuse and fatigue
- ▶ Scapular elevation and overuse of upper traps – uncoordinated scapthoracic rhythm
- ▶ Muscle weakness secondary to neuropathy
- ▶ Hypomobile posterior GH joint capsule

Summary of common impairments with rotator cuff diseases and impinging syndromes

- ▶ Pain at musculotendinous junction of involved muscle with resisted muscle contraction and when stretched
- ▶ +ve impingement sign
 - Forced internal rotation at 90 degrees flexion
 - Painful arc
- ▶ Faulty posture
- ▶ Hypomobile pectoralis major and minor, levator scapulae and internal rotators of GH joint: weak serratus anterior and lateral (external) rotators
- ▶ Difficulty dressing
- ▶ Unable to sustain repetitive activities or with weight e.g. putting a dish into cupboard
- ▶ Pain overhead reaching, pushing or pulling

The elbow and forearm complex



Lateral epicondylitis

Bony parts

- ▶ Distal end of humerus : 2 articular surfaces
 - Trochlea articulates with ulna
 - Capitulum with Head of Radius
 - Flex /extension
- ▶ Radius also articulates with the radial notch on ulna
 - Proximal radioulnar joint
 - Pronation / supination (along with distal radioulnar joint)
- ▶ Joint capsule encloses the humeroulnar, humeroradial and proximal radioulnar articulations

elbow

- ▶ Compound joint with a lax capsule
- ▶ 2 major ligaments:
 - Medial (ulnar) collateral
 - Lateral (Radial) collateral
- ▶ Humeroulnar articulation
 - Modified hinge joint produces varus at end of range flexion and valgus end of range extension to achieve full ROM
- ▶ Humeroradial articulation
 - Hinge-pivot joint
- ▶ Proximal and Distal Radioulnar joints are uniaxial pivot joints
- ▶ Proximal (Superior) Radioulnar joint within elbow capsule but distinct articulation

Muscles

- ▶ Elbow Flexors
 - Brachialis – flexion
 - Biceps Brachii – flexion and supination
 - Brachioradialis – stabilises joint and mid range contributions
- ▶ Elbow Extensors
 - Triceps Brachii – long head – shoulder and elbow
 - other 2 heads uniaxial
 - Extension
 - Anconeus- stabilizes joint during sup/pro and weak extensor
- ▶ Supinators – Supinator , Biceps Brachii, Brachioradialis
- ▶ Pronators – Pronator Teres, Pronator Quadratus
- ▶ Wrist and hand muscles act as stabilisers but do not contribute to elbow movement
- ▶ Wrist flexors attach to Medial epicondyle
- ▶ Wrist extensors attach to Lateral epicondyle

Major nerves subject to pressure and trauma around the elbow

- ▶ Ulnar nerve – cubital tunnel and between heads of flexor carpi ulnaris
- ▶ Radial nerve – lateral epicondyle and under origin of extensor carpi radialis brevis – divides:
 - Deep branch – Entrapment between edge of extensor carpi radialis longus and fibrous slit in supinator or injured with radial head #
 - Superficial nerve – direct trauma
- ▶ Median nerve – entrapment between the heads of pronator teres – sensory changes can duplicate carpal tunnel syndrome
- ▶ Motor changes will include p teres, wrist flexors, extrinsic finger flexors and **intrinsic thenar and lumbricals I and II (CTS only)**

pathologies

- ▶ Rheumatoid Arthritis and Juvenile Idiopathic arthritis, degenerative joint disease
- ▶ Acute joint reactions after trauma, dislocations or fractures
- ▶ Postimmobilization contractures and adhesions in joint capsule and surrounding tissue

Common impairments

- ▶ Acute stage
- ▶ joint effusion, muscle guarding and pain restrict movement
- ▶ Pain at rest
- ▶ If pronation +/- or supination restricted following injury ? #, subluxation or dislocation

- ▶ Sub-acute and chronic stages
- ▶ capsular pattern
 - Flexion restricted more than extension
- ▶ Firm end feel and reduced joint play
- ▶ Longstanding arthritis at elbow pronation and supination also restricted with firm end feel and decreased joint play in proximal RU joint

Joint protection

- ▶ Patient education
- ▶ Teach methods of joint protection
- ▶ Modify activities of daily living
- ▶ Pacing – ADL and exercises
- ▶ Safe positions of rest

Common functional limitations

- ▶ Difficulty turning a door knob / key
- ▶ Difficulty or pain – pushing and pulling activities e.g. Opening doors
- ▶ Restricted hand to mouth activities and hand to head activities
- ▶ Difficulty or pain pushing up from sitting
- ▶ Unable to carry objects with a straight arm
- ▶ Limited reach

Overuse syndromes: repetitive trauma syndromes

Lateral epicondylitis (Tennis elbow)

- ▶ Pain at common wrist extensor tendons along lateral epicondyle and radiohumeral joint with gripping activities

Medial epicondylitis (Golfer's elbow)

- ▶ Common flexor/pronator tendon at tenoperiosteal junction near medial epicondyle
- ▶ Repetitive movements into wrist flexion or eccentric strain of wrist or forearm muscles

- ▶ Microdamage and partial tears near musculotendinous junction when strain exceeds strength of muscle and demand exceeds the repair process – chronic inflammation



Physiotherapy

Acute

- ▶ Control pain, oedema or spasm
- ▶ Rest, advice – avoid aggravating factors, ice

Maintain soft tissue and joint mobility

- ▶ Graded exercises – start with isometric in short position (elbow and wrist flexed – tennis elbow)
- ▶ Mobilisation techniques
- ▶ Prevention and management of adhesions – Transverse frictions
 - Aims :
 - To induce pain relief.
 - To produce therapeutic movement.
 - To produce a traumatic hyperaemia in chronic lesions.
 - To improve function.

Maintain upper limb function

Prevention and management of adhesions

- ▶ Mobilisation techniques, heat, ice, ultrasound and Pulsed Short Wave Diathermy.

Acute stage

- ▶ Gentle transverse frictions (six sweeps) cause an agitation of tissue fluid that can increase the rate of phagocytosis by chance contact with the macrophages (Evans 1980).
- ▶ Also increase amorphous ground substance and prevent cross link formation and reduce adhesion formation.

- ▶ Traumatic Hyperaemia in Chronic Lesions –
- ▶ Transverse frictions for 10 minutes produces a controlled traumatic hyperaemia and is exclusively used for chronic lesions (Brosseau 2002).
- ▶ There is an increase permeability of the capillary walls allowing tissue fluid into the surrounding area (Norris 2004).
- ▶ Deep transverse frictions produce, ultrastructural changes in the skeletal muscle, stimulating a controlled inflammatory reaction to boost the repair process in chronic lesions.

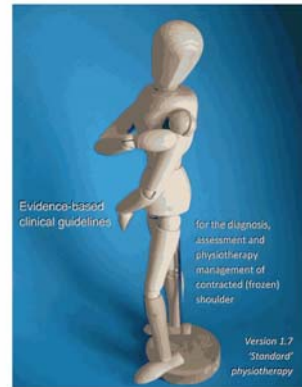
Transverse Frictions

Traumatic Hyperaemia in Chronic Lesions

- ▶ Transverse frictions for 10 minutes produces a controlled traumatic hyperaemia and is exclusively used for chronic lesions (Brosseau 2002).
- ▶ There is an increase permeability of the capillary walls allowing tissue fluid into the surrounding area (Norris 2004).
- ▶ Deep transverse frictions produce, ultrastructural changes in the skeletal muscle, stimulating a controlled inflammatory reaction to boost the repair process in chronic lesions.

Review of the principles of Physiotherapy management

- ▶ Combined mechanics of Shoulder and Shoulder Girdle joints and muscles provide for and control its mobility and stability
- ▶ Therapeutic exercise program for impaired function of a joint needs consideration of:
 - Anatomic and kinesiological features
 - The state of the pathology
 - Functional limitations imposed by the impairments
- ▶ Additional techniques are used to maintain or increase soft tissue and joint mobility
 - prevention of adhesions
 - mobilisation techniques
 - pain management



Thank You

Objective Assessment

Eliminate the cervical spine as a cause of pain



Active cervical extension
Active cervical rotation
Active cervical side flexion
Active cervical flexion

Objective Assessment

Shoulder elevation Tests

Active elevation through flexion

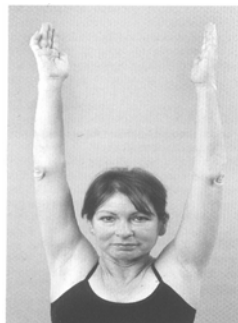
Willingness
Range
Pain

Passive elevation

Pain
Range
End feel

Active elevation through abduction

Painful Arc



Objective Assessment

Passive glenohumeral movements

Passive Lateral rotation
Passive Abduction
Passive Medial rotation
Pain , Range , End Feel

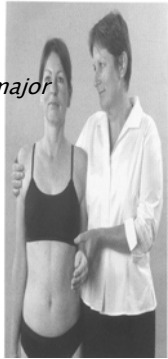
? Capsulitis



Objective Assessment

Resisted Tests

Abduction	<i>Supraspinatus</i>
Adduction	<i>Latissimus dorsi, pec major</i>
Lateral Rotation	<i>Infraspinatus</i>
Medial Rotation	<i>Subscapularis</i>
Elbow Flexion	<i>Biceps</i>
Elbow Extension	<i>Triceps</i>



Objective Assessment

Accessory Tests

Passive shoulder flexion and adduction (Scarf test)

- ▶ ACJ Dysfunction
- ▶ Lower fibres Subscapularis



SLAP Tear

- ▶ SLAP – Superior Labrum Anterior and Posterior.
- ▶ A SLAP tear occurs in both anterior and posterior points of labral attachment.
- ▶ Biceps tendon can be involved in the injury, as well.
- ▶ Injuries to the superior labrum can be caused by acute trauma or by repetitive shoulder motion.
- ▶ An acute SLAP injury may result from:
 - A motor vehicle accident, fall onto an outstretched arm
 - Repetitive overhead sports,
- ▶ Many SLAP tears, however, are the result of a wearing down of the labrum that occurs slowly over time. In patients over 40 years of age, tearing or fraying of the superior labrum can be seen as a normal process of aging. This differs from an acute injury in a person under the age of 40.

In many cases, the initial treatment for a SLAP injury is nonsurgical.

Treatment options may include:
NSAIDs

Physiotherapy

Flexibility and Strengthening exercises



SIS NICE guidelines

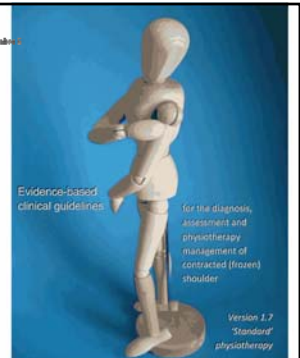
- ▶ The following exercises have been recommended.
- ▶ Stabilisation in sitting, standing, 4 point kneeling, and with a ball.
- ▶ Medial rotation, lateral rotation, anterior capsule stretch, posterior capsule stretch.
- ▶ Flexion, rowing, scaption (in medial rot), Horizontal abduction with lat rot
- ▶ Push ups, press ups plus (please see NICE guidelines for more details)



References

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- Hanchard N, Goodchild L, Thompson J, O'Brien T, Richardson C, Davison D, Watson H, Wragg M, Mtopo S, Scott M. (2011) Evidence-based clinical guidelines for the diagnosis, assessment and physiotherapy management of contracted (frozen) shoulder v.1.6, 'standard' physiotherapy. Endorsed by the Chartered Society of Physiotherapy.

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