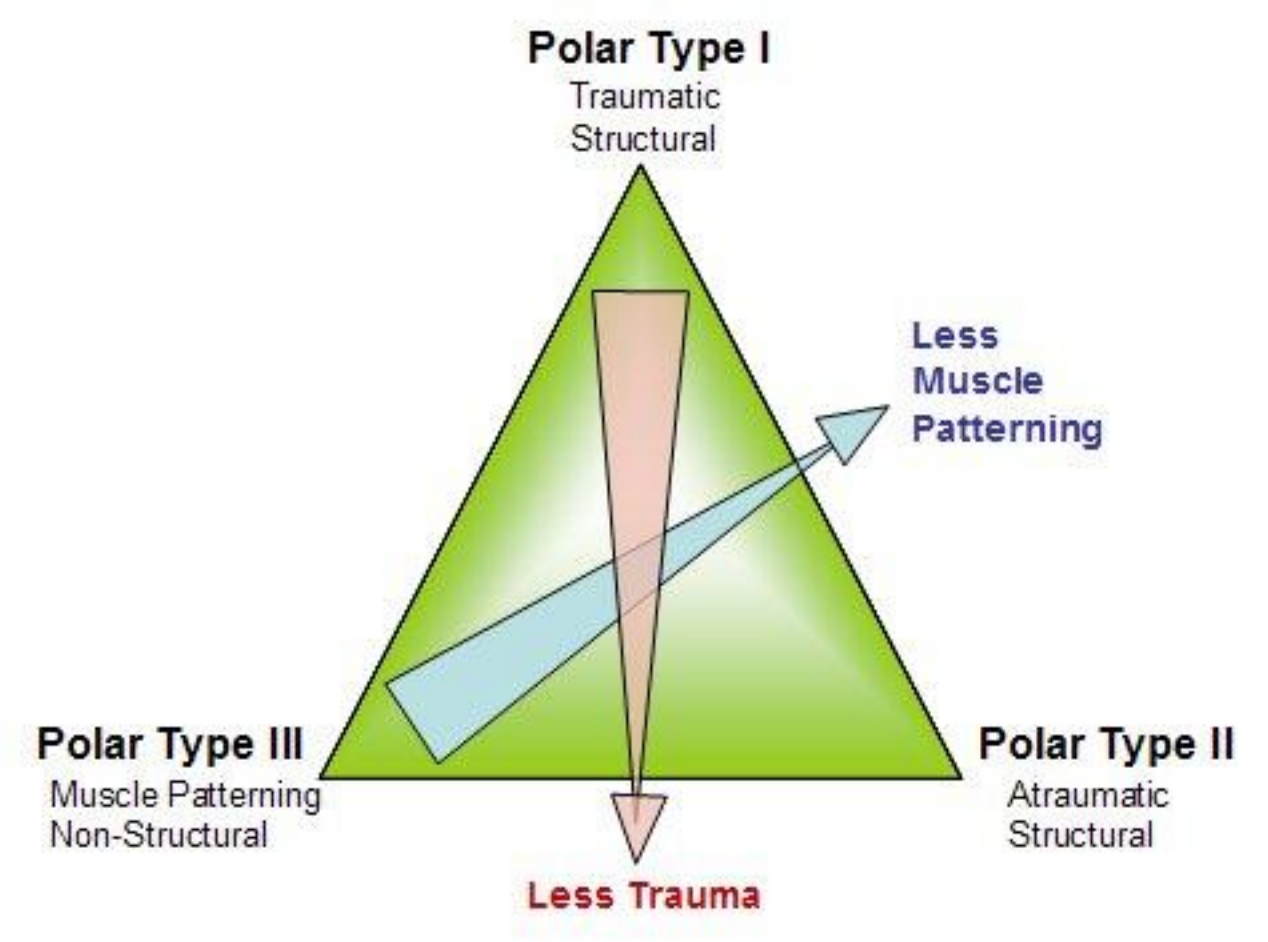
Physiotherapy Management of Shoulder Instability

2013

Aims

- Review Stanmore Classification Instability
- Introduction to Physiotherapy Assessment
- Overview of treatment principles and Techniques


Polar Type I
Traumatic
Structural
Less
Muscle
Patterning
Polar Type III
Muscle Patterning
Non-Structural
Polar Type II
Atraumatic
Structural
Less Trauma

Type ll & lll

- Atraumatic structural

- No trauma
- No abnormal MP
- Capsular dysfunction
- Not uncommonly bilateral

- Muscle Patterning

- No Trauma
- No structural damage
- Capsular dysfunction
- Abnormal MP
- bilateral

Muscle Patterning

- Inappropriate activitation, commonly of the torque producing muscles of the shoulder complex.
- Latt Dorsi -
- Pec Major
- Deltoid

(Malone et al 2006)

- Acts to stabilise or destabilise the joint

Examination

- LISTEN
- LOOK – anatomy/posture/striae/colour/sulcus/dimples/ m.atrophy/discoloration
- FEEL – sensation/anatomy/muscular activity at rest/tenderness/
- MOVE – quality/ROM/kinesiophobia/dysfunction-local or global

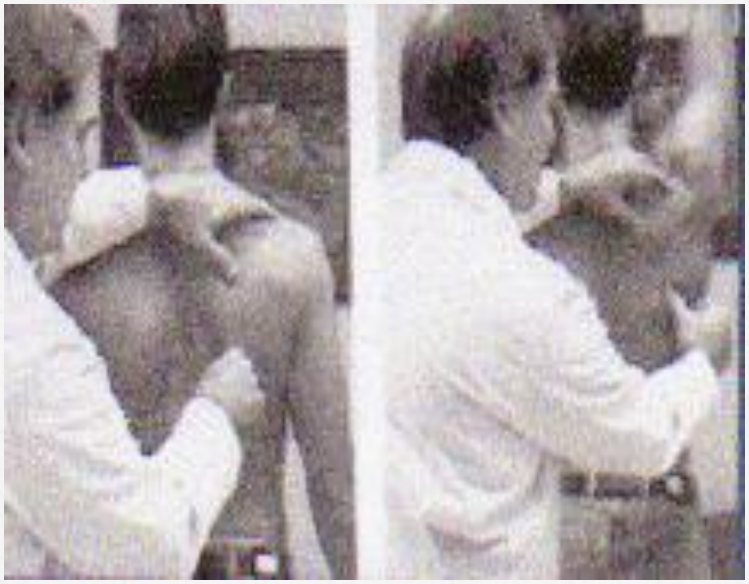
Assessing Muscle patterning

- Elbow flexion test
- Resisted ER
- Improvement tests
- Posterior cuff facilitation
- Weight transfers
- Beighton Index
- Proprioception
- Balance

(Gibson & Elphinston 2004)

Scapular Assistance Test

- Assist the scapular retract and upwardly rotate as the arm is elevated
- +ve pain diminished +/or increased ROM
- Indicates improving scapular motion may reduce symptoms
  Kibler & McMullen JAAOS 2003



Balance & Proprioception

Screening tests of balance control and integration of the kinetic chain

Single leg stance - eyes open/closed

Overuse of righting reactions - Significant loss of balance with eyes shut

Single leg squat

Poor rotational control of the lower limb

ability to maintain segmental alignment in the trunk

tendency to fix the shoulder complex with the patterning muscle

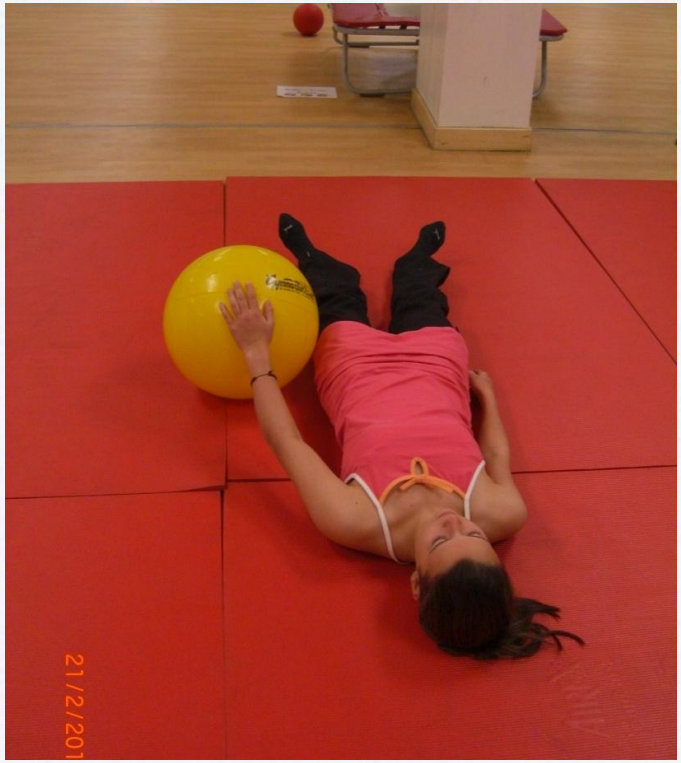
Developmental

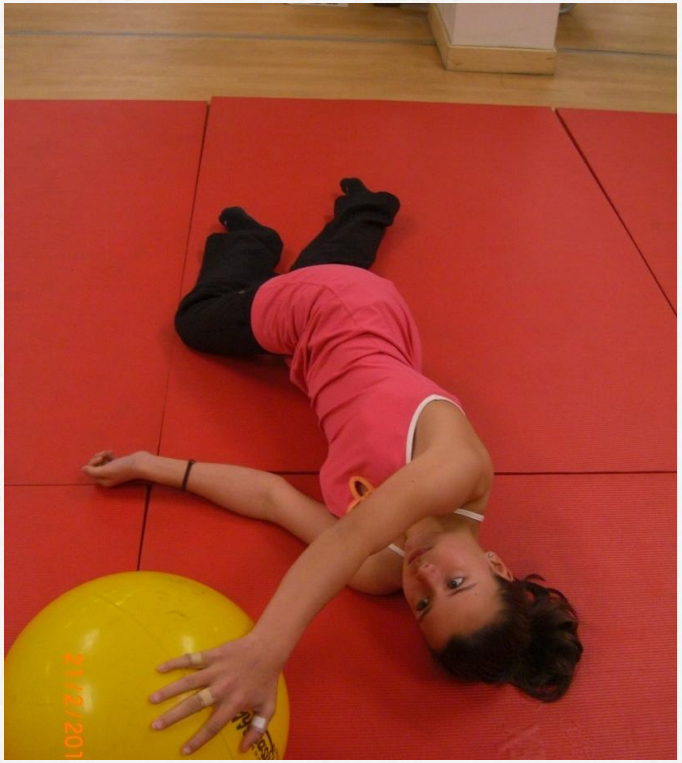
- Infraspinatus Reflex (Auge 2000)

- Primitive reflex should become quiescent as we develop motor control but in some patients this remains very dominant. This group of patients are unable to do selective dissociation and so tend to fix and overload.

Gym ball

Developmental sequencing





Stuart Robertson 2008

Treatment Objectives

- Optimum flexibility of muscles that are prone to tightness
- Access the dynamic control systems
- Restore proprioception
- Re-establish normal movement patterns
- Consider the kinetic chain

Muscle Imbalance

- A state of muscle imbalance exists when a muscle is weak and its antagonist is strong
- The stronger of the two opponents tends to shorten and the weaker tends to elongate.
- Either weakness or shortness can cause movement dysfunction.
- Weakness – permits deformity
- Shortening – creates deformity (Kendall 1993)

Strengthening

- Increases the strength of all muscles thus increasing/maintaining discrepancies.
- Retraining addresses muscle dominance/recruitment

Rehabilitation Tools

- Reassurance
- Reassurance
- Reassurance

Education

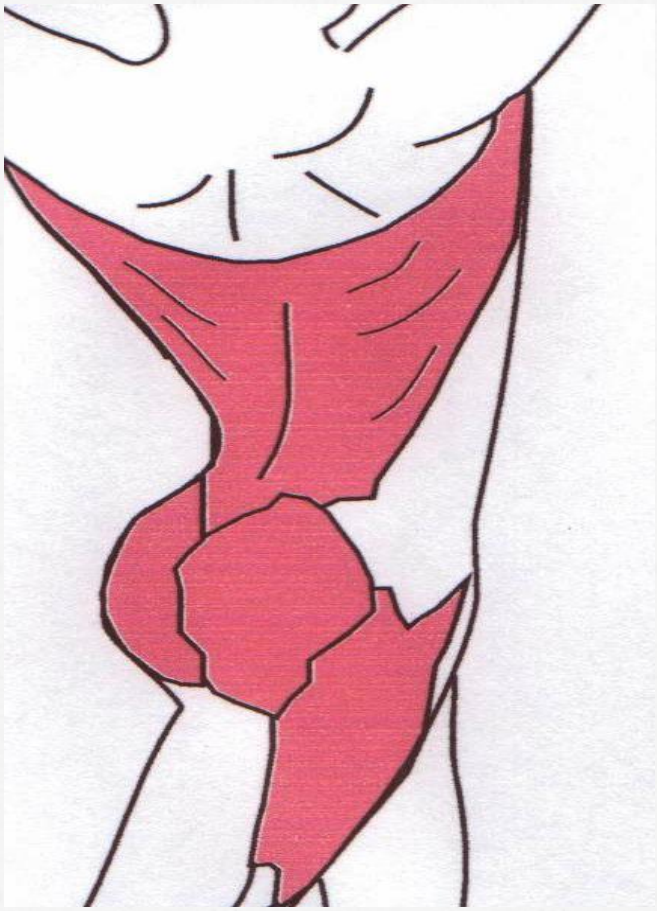
- Determine patients understanding/ expectations
- Shoulder models/pictures/
- Role of physiotherapy
- Positive approach
- Validate previous treatment
- Develop common goals
- Liaise with parents/teachers/coach

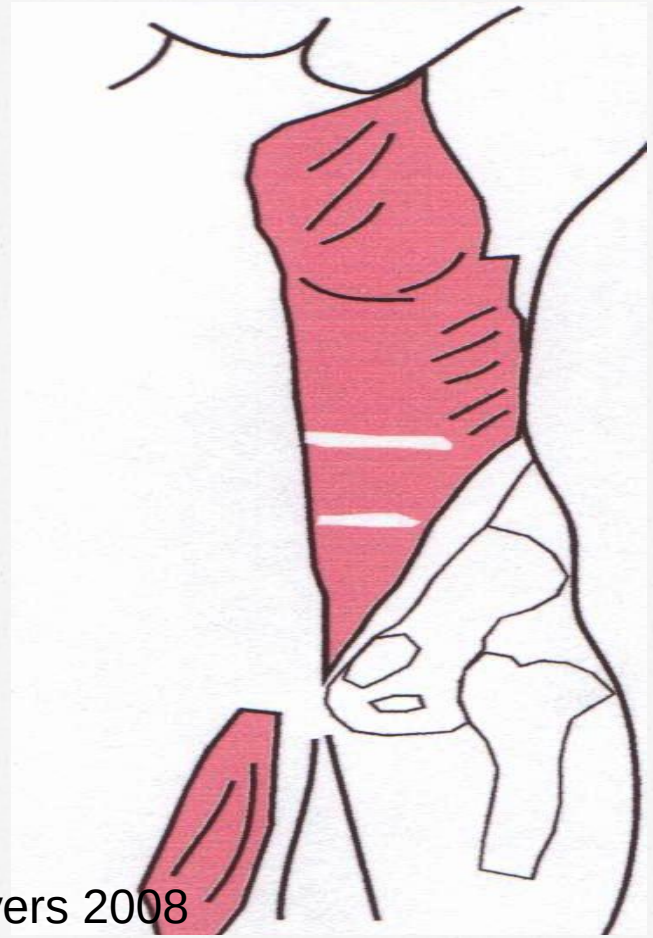
Magarey & Jones 2003

Inhibition of Muscle Patterning

- Palpation
- Biofeedback – EMG/Mirrors/Taping
- Heat
- Contract/Relax
- Rotator Cuff recruitment through range of motion
- Sequencing patterns
- Gymball – weight transfers/dissociation activities

Kinetic Chain



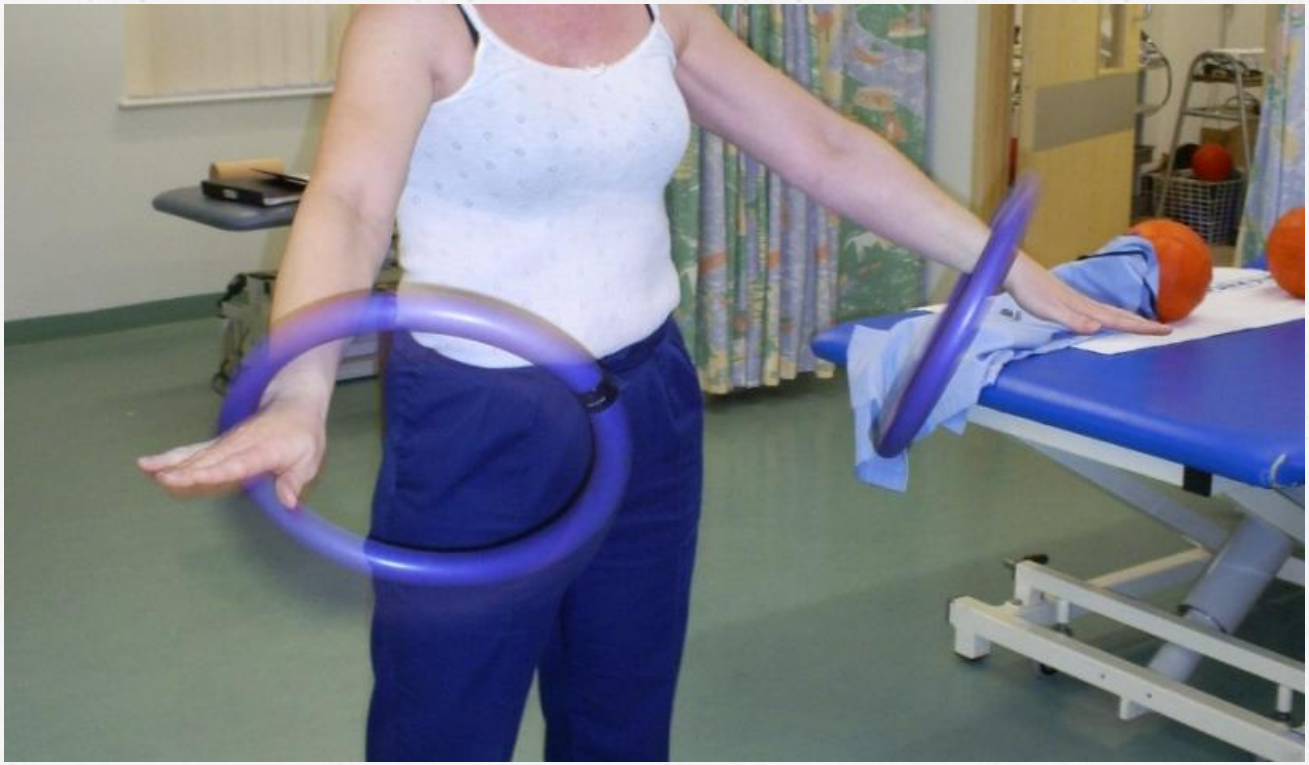


Myers 2008

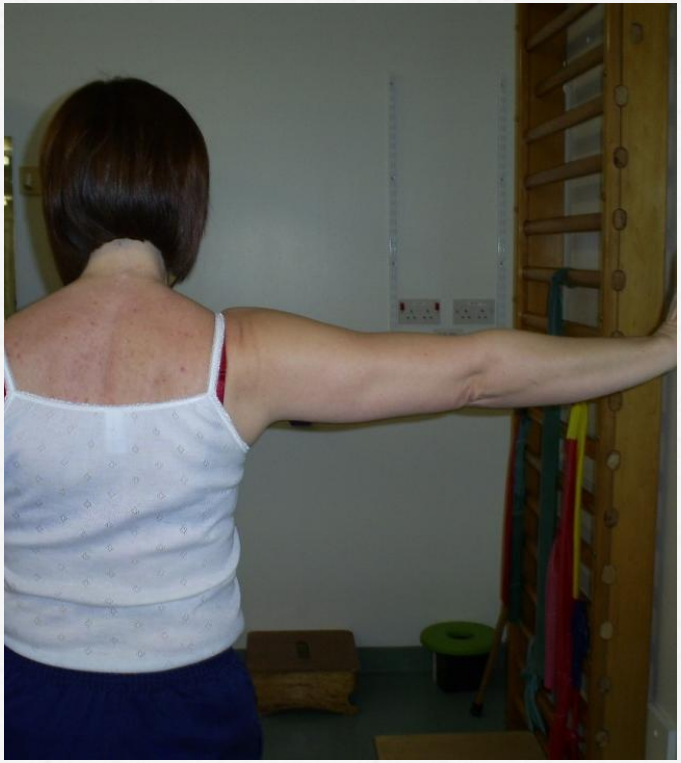
Balance mechanisms

Proprioception

Co-ordination & endurance



Specifics



Disruption of the pain network

- Parietal cortex
- Parietal lobe
- Sensory cortex

(Gibson 2009)

- Incongruence of senses - disrupted body schema
- Hostile feelings towards the limb
- Altered body perception
- Sensory motor mismatch

Expanded Assessment

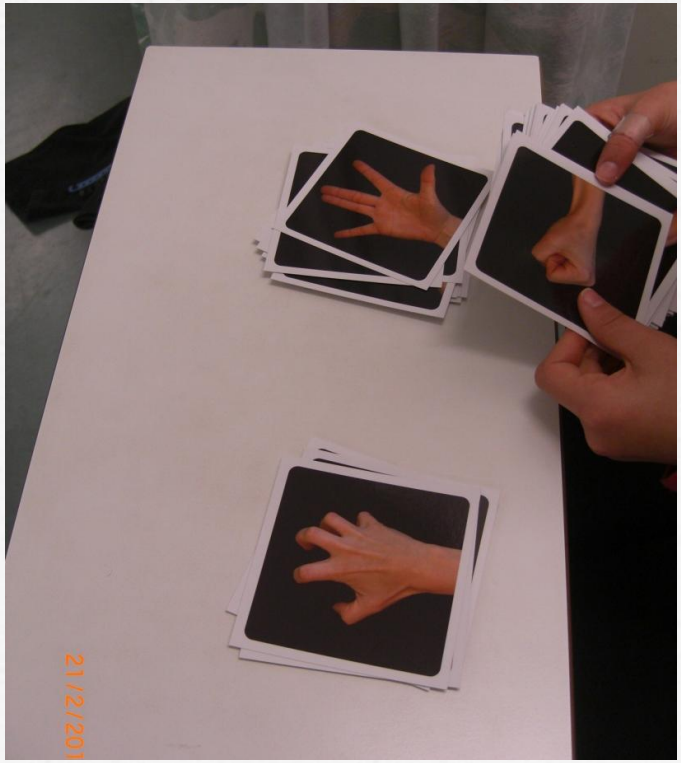
- Two point discrimination
- Dysynchiria
- Hand laterality
- Developmental
- Spontaneous echymosis
- Dysfunctional pain neuromatrix
- Central processing
- Faulty proprioceptive information processing
- Mismatch of perception and pain processing

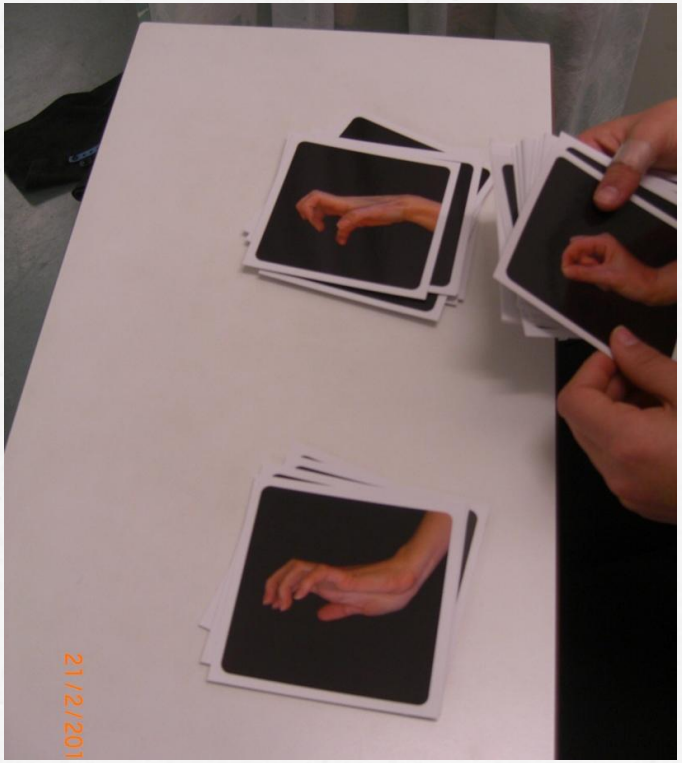
Graded motor imagery

- Laterality – 85%
- Visualisation of movement
- Mirror therapy

(Referred patients to the pain team for 2hour group EP session).

Laterality Testing





Evidence Type ll

- Proprioception
- Fatigue resistance
- Timing
- Hypermobility
- Developmental
- Serratus anterior

- Minimum 3-6/12 rehabilitation

Considerations - Type lll

- Abnormal central processing
- Genetic vulnerability to sensory or motor mismatching
- Synaesthesia and perceptually unstable/ may be related to dysfunctional pain mechanisms.
- No role for surgery

Summary

- Abnormal muscle activation contributes to instability
- Shoulder does not function in isolation – kinetic chain
- Assessment of trunk and scapula stability is essential

THANK YOU