Shoulder Injury Evaluation
Basic Anatomy & Kinesiology

• 3 Bone Structures
  • Clavicle
  • Scapula
  • Humerus
Evaluation Principles

• Always follow a standard progression
  – Determine the target tissue
  – What area is injured

• Get a History
  – is this a new injury, old chronic injury

• Assessment
  – Correlate signs, symptoms, biomechanical info
• Assessment
  – what is the primary problem?

• Plan
  – Treatment
  – Referral
  – Short and Long Term Goals

• Follow up
• Always follow the same plan
• Evaluation Order

History
Observation
Palpation
Stress
6 Articulations or Joints

- Coraco Clavicular
- Sterno Clavicular
- Acromio Clavicular
- Gleno Humeral
- Scapulo Thoracic
- Sub Acromial Space
Sterno Clavicular
Acromio Clavicular
A/C Joint

Grade 1+ A/C Separation
Scapulo Thoracic
Sub Acromial
Functional Stability

• Shoulder is very unstable from a bony standpoint
• Stability is almost totally dependent upon the synergism of the musculotendinous units
• The only true bony articulation to the thorax is the S/C Joint
Muscles

• 15 muscles move and stabilize the scapula
• 9 muscles provide for GH motion
• 6 support the scapula on the thorax
The muscles and a lack of restrictive bony or ligamentous structure give the shoulder tremendous range of motion.
It also makes the shoulder very vulnerable to outside forces.
Anterior Capsule

• Subscapularis Tendon
• Labrum
• Anterior Capsular Ligaments
  • Coraco Humeral, GH, Inferior GH Ligament
    • *Inferior may be the most important ligament in the shoulder*
• Anterior Synovial pouches and bursae
Rotator Cuff Muscles

- Supraspinatus - abduction
- Infraspinatus - external rotation
- Teres Minor - depression, external rotation, extension

Spells SIT

- Subscapularis - internal rotation
Cuff Functions

- Anterior Posterior Stability
- Internal and External Rotation
  - eccentrically and concentrically
- Elevation - Depression
- Protraction
- Retraction
- Joint Translation
• Fine Tuners

• Stabilizers

• Maintain joint contact areas
Movements

• Flexion
  – 90 degrees
• Primary Flexors
  – Anterior Deltoid
  – Coracobrachialis
  – Pectoralis Major
  – Biceps
Movements

• Extension
• Primary Extensors
  – Latissimus dorsi
  – Teres Major
  – Teres Minor
  – Triceps
Abduction

• Primary Abductors
  – Supraspinatus
  – Mid Deltoid
  – Serratus Anterior
  – Infraspinatus
Adduction

• Primary Adductors
  – Anterior Deltoid
  – Pectoralis Major
  – Subscapularis
External Rotation

• Primary External Rotators
  • Posterior Deltoid
  • Infraspinatus
  • Teres Minor
Internal Rotation

• Primary Internal Rotators
  – Subscapularis
  – Pectoralis Major
  – Latissimus Dorsi
  – Teres Major
  – Anterior Deltoid
Internal Rotation

The body limits internal rotation - thus placing the arm behind the body increases the amount of internal rotation.
Evaluation Tests

• Yergason Test 1
• Yergason Test 2
Yergason Test

• Positive Findings

  pain
  popping
  Transverse Humeral Ligament
  Long Head of the Biceps irritation
• Speed’s Test
Speed’s Test

Positive Findings

Pain
Weakness

Long Head of Biceps Tendon
• Drop Arm Test
Drop Arm

- Findings
  
  Pain

Dropping of Arm

Supraspinatus Tendon
• Apprehension Test
Apprehension Test

• Positive Findings

  – Pain
  – Feeling of Apprehension about the shoulder potentially re subluxating or dislocating
• Relocation Test - Fowler’s Test
Relocation Test

• The relocation test eliminates the pain found with an apprehension test. This test acts to re-center the Humerus in the Glenoid Fossa
• Throwers Test
Throwers Test

• Reproduces anterior capsule pain which is indicative of anterior capsular laxity
• Rowe Test
Rowe Test

Multi Directional Instability

Very similar test to the Sulcus Test and it also produces a Sulcus sign
• Empty Can Test
Empty Can

- Specific for trauma to the Supraspinatus muscle
  - tendon irritation
  - impingement and or tear
• Impingement Test

Primary

Secondary
Impingement

• Does not occur singularly in a biomechanical sense
  – Joint Laxity
  – Outside trauma
• Adson, Allen Test - Maneuver
Adson’s, Allen Test

- Thoracic Outlet Syndrome
• Stress Testing Joints

A/C Joint Stress Testing

Counter force weights should be applied to the wrist and not gripped.

Bilateral X-Ray comparisons are required
• MRI Scans
Don't ask me to play God, coach. I'm just an athletic trainer, and there's only so much I can do with tape.

Injuries eventually put an end to Frankenstein's college football career.

T. Ross Bailey
Associate Athletic Director
Director of Sports Medicine
&
Athletic Training