Elbow Examination
In Athletes

Andrews Institute Research and Education
Upper Extremity Symposium
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HISTORY

• Sport(s) / Position(s)? How many years?
• Pitchers – Role - Mechanics/Change? - Pitch Mix
• Classic – Location Character Onset Duration
• Seasons / Teams / Practice
• Overuse? Situational / Seasonal
• Velocity? Pitch(es) Affected
• Prior Injury or Treatment
• Prior Injuries to CORE Lower Body
• Last Time Throwing - Able to Throw?
• Aspirations / Goals?
Neck Neuro/Vascular Other

History History History

- Thoracic Outlet Syndrome
  Vascular Venous/Arterial
  Effort Thrombosis (Paget Schroeder Syndrome)
  McCleery Syndrome (Venous Obstrxn w/o thrombosis)
  Neurologic (most common)

- Idiopathic Brachial Neuritis
- Quadrilateral Space Syndrome
- Suprascapular Nerve Entrapment
- Musculocutaneous Nerve Entrapment

Thoracic Outlet Syndrome
Upper Limb Tension Test
Complete Exam
“CORE to Floor”

Kinetic Chain
“Lumbopelvic Control”


- Lumbopelvic Control and Days Missed Because of Injury in Professional Baseball Pitchers; Chaudhari, Onate al., AJSM Vol 42, 2014

Single Leg Raise Test
Keeping Pelvis Level

Single Leg Raise
Kinetic Chain  CORE Strength

Plank

*Single Leg Squat*
Dynamic Trendelenburg Test

ElAttrache Limpvasti

Scapular Dyskinesia

**Posture**
Normal or Protracted

**Scapular Dyskinesia**
Type I  Inf/Medial
Type II  Entire Medial
Type III  Supero Medial

**Scapular Dysrhythmia**
Examination of the Elbow

History
Inspection
ROM
  Lateral
  Anterior
  Medial
  Posterior

Inspection ROM

• Flexion
• Extension
• Carrying Angle
• Pron / Supination
Lateral Side

• Lat Epicondyle
  Cozen’s Test
  Mill’s Test

• Lateral Plica
• Radial Tunnel
  Middle finger test
  (Maudley’s)

Postero-Lateral Instability

Pivot Shift Test
Start in Extension and full Supination
Subluxes @ 40 degrees
Reduces with further Flexion

Push Up Tests
Anterior

• Biceps Tendon
  *Hook Test*

• Pronator Syndrome
  *History + Tinel’s*

• Lacertus Syndrome
  *History + Anatomy*

Lacertus Syndrome

*Fig. 32-1: Induration caused by the tight lacertus fibrosus fascia of the affected right elbow (arrow). Note the proximal fullness of the flexor-pronator muscles. The asymptomatic left elbow exhibits a subtle indentation caused by the normal lacertus fascia.*
**Medial Elbow Palpation**

- Epicondyle
  - wrist flexion against resistance
- UCL Proximal Distal
- Ulnar Nerve

**Ulnar Nerve**

- Palpation
- Tinel’s
- Stability @ 60 deg
UCL  Valgus Stress Test

• 30 Degrees Flexion  Forearm - Neutral

The role of the elbow musculature, forearm rotation, and elbow flexion in elbow stability:
An in vitro study
Hemmati Sedaghi MD FACS, Ranjan Gupta MD MSc, Michelle M McGarry MD FACS, J风机, Selvakumar MD FACS, Troy G, Lee KNC R A B

UCL  Milking Maneuver

Stephen O’Brien, M.D.

Stabilizes Humerus
Increased Flexion
Eliminates Flex/Pron
UCL Moving Valgus Stress Test

- Arm in Throwing Position
- Valgus Stress
- Move 80-120

- Positive if Painful

Posterior

Valgus Extension Overload Syndrome

James R. Andrews and Eric P. Launer

VEO Test aka
Valgus Extension
Snap Maneuver

Loose Bodies
Stress Fractures
ELBOW EXAM

ROM: Flex/Ext  Pron/Sup

Lateral: Palpation
  Cozen’s

Anterior: Hook Test
  Pronator  Lacertus

Medial: Palpation
  Resisted  Flexion

Ulnar Nerve: Tinel’s
  Subluxation

UCL: Palpation
  Valgus Stress  @30
  Milking Maneuver
  Moving Valgus Stress

Posterior: Palpation VEO Test

Special: Pivot Shift
  Maudley
  Mill’s, etc.

Eliminating Bias

Any tendency which prevents
unprejudiced consideration of a question

• Anchoring Bias  “I know what this is”
• Acquiescence Bias  “Doesn’t this hurt?”
• Confirmation Bias  “Doing the Money Test last”
• Question Order Bias  “I’ll do the less painful tests first”
Putting it All Together

• Familiarize your self with the most accurate tests and combinations of tests for the examination of athletes.

• Develop and use a consistent routine for examining all patients which includes a relevant history, a complete examination including combinations of tests and evaluation of CORE strength.