Joint Mobilization: Elbow, Wrist, and Hand
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Small Joints of the Hand:
MCP, PIP, and DIP: distraction and glides (A/P or P/A)

Practical Tip #1: Perform both directions to improve MCP flexion

Practical Tip #2: Not best choice for PIP flexion contractures or profound small joint stiffness; value heat/stretch & LLPS.

Practical Tip #3: radial/ulnar glides; just cause you can doesn’t mean it has benefit; “positional faults” likely rare.

Practical Tip #4: may not be best option for pain modulation; handling can be uncomfortable; tissue interface may be needed.

CMC Abduction: convex MC on concave trapezium
roll anterior, slide posterior
roll radial deviation, slide ulnar deviation

CMC Flex/Ext: concave MC on convex trapezium
roll and slide in same direction like other small joints
Posterior glides to increase extension
Anterior glides to increase flexion
Distraction: to facilitate long axis rotation essential for pad to pad pinch

“Skull Rock”

Introduced by Jan Albrecht, OT, CHT more than a decade ago as a self-mob option for CMC joint pain. Long axis distraction combined with active sensory input.

Elbow: 3 Articulations

- Ulnohumeral
- Radiohumeral
- Superior or Proximal Radioulnar Joint

“Lock and Key” Configuration

Primary to Stability

Articular Configuration

Adds to Stability and Creates Very Little Joint Play

Distraction

Ulnohumeral

Radiohumeral
Medial or Lateral Tilt of Ulnohumeral Joint

Medial Tilt/Gap
VF = valgus force

Lateral Tilt/Gap
VF = varus force

Practical Tips for Elbow
- Vigorous technique may create problems.
  - Nerve Irritability
  - Tissue Reactivity
- Stiffness best treated with LLPS.
- May not be enough “play” to modulate pain.
- When using LLPS for cement elbows, joint play likely to return before physiologic motion; use gap or tilt to assess.

Proximal or Superior Radioulnar Joint
- Pronation/Supination
- Ulna is the stable bone
- Radius rotates about the ulna
- Radius rotates at HR jt

Distal or Inferior Radioulnar Joint
- Radius rotates about ulna
- Ulnar head glides within sigmoid or ulnar notch
  - Glides Palmar w/ Supination
  - Glides Dorsal w/ Pronation

Forearm Rotation
- Neutral position
  - 60% of ulnar notch in contact with radius
- At extremes of motion
  - 10% of the ulnar notch in contact with radius

Supination
- Palmar ligaments taut
- PQ taut
- Pronation
- Dorsal ligaments taut
- IOM slack
- PQ slack

DRUJ Stabilizers
**Forearm Rotation**
- Fovea of radial head spins @ radiohumeral jt
- Ulna is fixed at PRUJ, but not at DRUJ
- PRUJ arthrokinematics
  - Radial Head glides in radial notch (on ulna)
  - Glides Anterior w/ Supination
  - Glides Posterior w/ Pronation
- DRUJ arthrokinematics
  - Ulnar head glides in sigmoid/ulnar notch (radius)
  - Glides Palmar w/ Supination
  - Glides Dorsal w/ Pronation

**Joint Play: Anterior/Posterior Glide of Radial Head**
- Posterior Glide
- Anterior Glide

**Joint Play: DRUJ**

**Lateral Glide MWM for Lateral Elbow Tendinopathy**
- LET CPG: Strong Evidence (A)
  - Use local elbow joint mobilization techniques to reduce pain and increase pain free grip strength in patients with LET.
  - Seems to have a positive effect as a stand-alone or adjunctive treatment in improving outcomes in the short term.

**Articulations of the Wrist**
Location of Movement: RC vs. MC

<table>
<thead>
<tr>
<th>Author</th>
<th>Flexion/Extension</th>
<th>Radial Deviation</th>
<th>Ulnar Deviation</th>
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<tbody>
<tr>
<td>Kapandji</td>
<td>RC&gt;MC MC&gt;RC</td>
<td>RC=MC</td>
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<tr>
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<td>Saraffian</td>
<td>MC&gt;RC RC&gt;MC</td>
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• Wrist motion occurs at both MC and RC joints
• About 50/50 split between MC and RC

Kinematics: Flexion/Extension
• DCR and PCR move in concert
• DCR follows hand; PCR follows DCR
• To achieve full wrist extension, radius and ulna separate slightly

Kinematics: Ulnar Deviation
• Carpal rows behave differently
• During UD, the PCR moves radially, extends, and pronates
• DCR moves opposite PCR

Kinematics: Radial Deviation
• During RD, the PCR moves ulnarly, flexes, and supinates
• DCR moves opposite PCR
• Scaphoid Tubercle Check!

Proximal Row Isolated Mobilizations
Same as Shear or Ballottement Testing

Central Dorsal Zone
- Lister’s Tubercle
- Lunate
- S-L interval
- Capitate

Practical Tips to Screen for Hypermobility
- Scaphoid tubercle check
- Screen intervals for pain/tenderness
- Palpate carpal bones
Ulnar Dorsal Zone
- Hamate
- Triquetrum
- L-T interval
- DRUJ

Joint Play: Radiocarpal Distraction

Individual Carpal Bone Mobilization
- Posterior glides increase wrist flexion
- Anterior glides increase wrist extension
- Use angular motion to restore RD/UD

Select References