Development of Shoulder Rehabilitation Guidelines with ICF Classifications

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Shoulder Rehabilitation Guidelines

- Scope
  - Most Common Conditions
  - Limit to Non-operative care
  - Evidence based
  - Classification important and should guide rehab
  - ICF Nomenclature

Most Common Conditions (Non-op)

- Rotator cuff tendinopathy
  - aka Impingement syndrome, tendinitis, tendinosis, subacromial bursitis
- Frozen Shoulder
- Glenohumeral Instability

The Shoulder and ICF

<table>
<thead>
<tr>
<th>Popular Label</th>
<th>1-ICD 9</th>
<th>ICF Body Function</th>
<th>ICF Body Structure</th>
<th>Activities/Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotator Cuff Tendinopathy (Impingement)</td>
<td>S720.0</td>
<td>Muscle of shoulder region</td>
<td>S720.1</td>
<td>Reading, Writing, Throwing, Pulling, Pushing, Lifting, Carrying for work, Picking</td>
</tr>
<tr>
<td>Frozen Shoulder</td>
<td>B760.1</td>
<td>Mobility of a single joint</td>
<td>B710.0</td>
<td>Work, Carrying for work, Picking</td>
</tr>
<tr>
<td>Glenohumeral Instability</td>
<td>D4452</td>
<td>Reaching</td>
<td>D4300</td>
<td>Lifting, Throwing, Pulling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D850</td>
</tr>
</tbody>
</table>

Shoulder Dx/Classification

- Rotator Cuff Tendinopathy / Impingement
- Glenohumeral Instability
- Frozen Shoulder

- Are these homogenous groups?
- Are these dx's specific enough to direct rehabilitation?
- Lessons learned from the spine...
Med Dx and PT Dx

- Medical Diagnosis
  - Pathoanatomic
  - Primary Tissue Pathology
  - Stable over episode of care
  - Guides general Rx strategy
  - Informs prognosis

- PT Diagnosis
  - Sx Severity / Impairment
  - "Irritability"
  - Current intensity
  - Often changes over episode of care
  - Guides specific rehab Rx
  - May inform prognosis

Med Dx and PT Dx

<table>
<thead>
<tr>
<th>Med Dx or PT Dx</th>
<th>Rot Cuff</th>
<th>Froz Shdr</th>
<th>GH Instab</th>
<th>Treatment Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>+ / +++</td>
<td>+ / +++</td>
<td>--</td>
<td>Activity Mod</td>
</tr>
<tr>
<td>Weak</td>
<td>++ / +++</td>
<td>-- / +</td>
<td>++ / +++</td>
<td>Strengthen</td>
</tr>
<tr>
<td>Stiff</td>
<td>-- / +</td>
<td>+++</td>
<td>--</td>
<td>Mob</td>
</tr>
<tr>
<td>Laxity</td>
<td>-- / +</td>
<td>++ / +++++</td>
<td>Strength/ coord</td>
<td></td>
</tr>
</tbody>
</table>

Complaint of "Shoulder Symptom"

- Level 1 Screen
  - History, Basic PE, Red Flags
  - Non-shoulder origin of sx
  - Shoulder origin of sx

- Level 2 Med Dx
  - Specific Phys Exam (D)
    - Rotator Cuff / Impingement
    - Frozen Shoulder
    - Glenohumeral Instability

- Level 3 PT Dx
  - High Irritability
  - Mod Irritability
  - Low Irritability

Level 1

- Pt c/o Shoulder Pain
- Key History (A)
- Basic Phys Exam (B)
- Red Flags (C)
- YES
- NO
- Referral / Consultation

Level 2

- YES
- Continue to Specific Dx

A: Key Hx
- Age
- Occupation / sports
- Hand Dominance
- PMH
- Dosed duration sx’s
- Hx trauma / discalc:
- Pain
  - Location
  - Intensity
  - Factors ↑ or ↓
- Night pain
- Other CC sx’s
- Weakness
- Self-report
- Function/disability

B: Basic Phys Exam
- Observation
- Posture
- Upper Quarter Screen
- r/o C-spine
- r/o neurologic
- AROM / PROM
  - Elev, IR, ER
  - Strength
  - Elev, IR, ER

C: Red Flags
- Acute Trauma
- Tumor
- Infection
- Referred Pain

Yellow Flags
- Fear Avoidance
- Psychosocial Factors

2nd Level Shoulder Classification

Specific Exam

<table>
<thead>
<tr>
<th>Rot Cuff / Impingement</th>
<th>Frozen Shoulder</th>
<th>Glenohumeral Instability</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Positive:</td>
<td></td>
<td></td>
<td>GH Arthritis Fractures AC 3</td>
</tr>
<tr>
<td>Impingement signs</td>
<td></td>
<td></td>
<td>Neural Entrap Myofascial</td>
</tr>
<tr>
<td>Pain w/ arm resist</td>
<td></td>
<td></td>
<td>Fibromyalgia</td>
</tr>
<tr>
<td>Weakness</td>
<td></td>
<td></td>
<td>Post-Op</td>
</tr>
<tr>
<td>Triphaty</td>
<td></td>
<td></td>
<td>Red Flag Conditions</td>
</tr>
<tr>
<td>Key negative:</td>
<td></td>
<td></td>
<td>Age &lt; 40</td>
</tr>
<tr>
<td>Normal motion</td>
<td></td>
<td></td>
<td>No apprehension</td>
</tr>
</tbody>
</table>

Key Positive: 
- Spontaneous progressive pain
- Loss of motion in multiple planes
- Pain at end-range
- Key negative: 
- No hx disloc
- No apprehension
3rd Level Shoulder Classification

Irritability Level

- High Irritability
- Mod Irritability
- Low Irritability

High Irritability (E) (3/5 to categorize)
- High Pain (> 7/10)
- night or rest pain
- consistent
- Pain before and ROM
- AROM < PROM
- High Disability (DASH, ASES)

Rx focus:
- pain reduction
- impairments
- basic function

Moderate Irritability (F) (3/5 to categorize)
- Mod Pain (4-6/10)
- intermittent
- Pain at end ROM
- AROM ~ PROM
- Mod Disability (DASH, ASES)

Rx focus:
- pain reduction
- basic function

Low Irritability (G) (3/5 to categorize)
- Low Pain (< 3/10)
- none
- Min pain w/overpressure
- AROM = PROM
- Low Disability (DASH, ASES)

Rx focus:
- High demand functional activity restoration

Treatment Response Criteria (H)

Good response
- Pain improved (> 2 pts on NPRS)
- Function / disability improved: MDC in self-report outcome (DASH=13pts, ASES= 9.4pts)
- Patient satisfaction improved (> 2 pt on 11pt scale)

Poor response
- Pain is unimproved or worsened
- Function / disability unimproved or worsened
- Patient dissatisfied

Matched Treatment Strategy

<table>
<thead>
<tr>
<th>High Irritability</th>
<th>Moderate Irritability</th>
<th>Low Irritability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modalities</td>
<td>– / –</td>
<td>– / –</td>
</tr>
<tr>
<td>Activity Modification</td>
<td>+ / –</td>
<td>+ / –</td>
</tr>
<tr>
<td>ROM/ Stretch</td>
<td>Pain-free passive AROM</td>
<td>Pain-free passive AROM</td>
</tr>
<tr>
<td>Manual Techniques</td>
<td>Low grade</td>
<td>Low / High grade</td>
</tr>
<tr>
<td>Strengthen</td>
<td>– / –</td>
<td>Light → mod resistance</td>
</tr>
<tr>
<td>Functional Activities</td>
<td>– / –</td>
<td>Basic</td>
</tr>
<tr>
<td>Patient Education</td>
<td>– / –</td>
<td>– / –</td>
</tr>
<tr>
<td>Taping / functional support (brace / external)</td>
<td>– / –</td>
<td>– / –</td>
</tr>
</tbody>
</table>