A contemporary approach to shoulder dysfunction.

Building Robust Anti-Fragile Patients

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Opening Questions

• Why do some people say chiropractic fails them and other say physical therapy fails them?

• If you aren’t diagnosing, how do you know what you are dealing with?

• What is functional rehab?

Life time prevalence of 67% for shoulder pain

Historical evaluation and treatments of shoulder instability and pain

• Traditional evaluation and Dx was made based of the pathoanatomical model.

• This model focused on specific pain generating structures.

• Local biomechanical evaluations (special tests) with minimal thought of regional interdependence, movement or tissue irritability.

https://commons.wikimedia.org/wiki/File:Confused_man.jpg
**CRISP Protocol**

3 questions of diagnosis

1. Are the patient's symptoms reflective of a visceral disorder or a serious or potentially life-threatening illness? *(Rule out RED FLAGS)*

2. From where is the patient's pain arising? *(Diagnosing a pain generator)*

3. What has gone wrong with this person as a whole that would cause the pain experience to develop and persist? *(Prescribing Rehab)*

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**Pain Generators**

- Muscle
- Joint
- Nerve
- Disc

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**C-Spine Muscles**

Cervical spine consists of 3 muscles that refer to the shoulder

- Trapezius
- Levator Scap.
- Scalenes

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Common tests for specific pain

- Neer’s
  - 63% reliability / sensitivity for Supraspinatus pathology

- Appley’s Sup. / Inf. Scratch
  - 63% reliability / sensitivity for degenerative tendinitis of rot.cuff. Usually supraspinatus

- Speed’s & Lippmans
  - 75-88% Reliability / sensitivity for biceps tendon pathology
The Problem

• **Pathoanatomical Dx** -
  • may not adequately direct our rehab interventions
  • terms are often used inconsistently and incorrectly by physicians.
  • based on “special tests” with poor sensitivity and specificity which means poor diagnostic accuracy.
  • Focuses on passive solutions
  • Isolation doesn’t account for functional movement.


The Rehab Paradox

“Given the minimal evidence that MCE (motor control exercise) is superior to other forms of exercise, the choice of exercise for chronic LBP should probably depend on patient or therapist preferences, therapist training, costs and safety.”

http://www.cochrane.org/CD012004/Motor-control-exercise-chronic-non-specific-low-back-pain

Conclusion:
Progressive exercise independent from specific scapular stabilization exercises provides decreased disability and pain severity in impingement syndrome.
The problem with pain in rehab / exercise

- Acute – limit pain in exercise.
- Pain limits ROM
- Pain creates fear avoidance / guarding
- Kills desire to participate

Focus on pain mitigation

The Psychological Warfare of Chronic Pain

Psychological Factors
- Central sensitization
- Fear Avoidance
- Catastrophizing
- Passive Coping

Mechanical Factors
Global movement dysfunction

Past vs Present

Identify inflamed tissue and treat passively then maybe actively
Vs
Dx a pain generator -> find faulty movement pattern -> treat accordingly

CRISP Protocol

3 questions of diagnosis

1. Are the patient's symptoms reflective of a visceral disorder or a serious or potentially life-threatening illness? (Rule out RED FLAGS)

2. From where is the patient's pain arising? (Diagnosing a pain generator)

3. What has gone wrong with this person as a whole that would cause the pain experience to develop and persist? (Prescribing Rehab)

Potential Red Flag Conditions for the Shoulder (Modified From Milks's NFL in AF)

<table>
<thead>
<tr>
<th>Potential Condition</th>
<th>History and Examination Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>infection</td>
<td>History of trauma, symptoms, signs of trauma, including unilateral weight loss, pain out of proportion, mechanical stiffness, and constitutional changes (e.g., malaise, weakness, or lethargy).</td>
</tr>
<tr>
<td>Trauma</td>
<td>History of trauma, symptoms, signs of trauma, including unilateral weight loss, pain out of proportion, mechanical stiffness, and constitutional changes (e.g., malaise, weakness, or lethargy).</td>
</tr>
<tr>
<td>Factors or conditions related to surgery</td>
<td>History of trauma, symptoms, signs of trauma, including unilateral weight loss, pain out of proportion, mechanical stiffness, and constitutional changes (e.g., malaise, weakness, or lethargy).</td>
</tr>
<tr>
<td>Neurologic deficit</td>
<td>History of trauma, symptoms, signs of trauma, including unilateral weight loss, pain out of proportion, mechanical stiffness, and constitutional changes (e.g., malaise, weakness, or lethargy).</td>
</tr>
<tr>
<td>Musculoskeletal deficit</td>
<td>History of trauma, symptoms, signs of trauma, including unilateral weight loss, pain out of proportion, mechanical stiffness, and constitutional changes (e.g., malaise, weakness, or lethargy).</td>
</tr>
</tbody>
</table>

Movement Evaluations

Tonic Stabilizers

Prone to tightness

- Pec Major
- Upper Traps
- Levator Scap.
- SCM
- Scalene
- Biceps
- Masticators

The Solution Modern Rehabilitation

Graded Exposure
Load Management
Patient Education
**Phasic**

**Prime movers**

**Prone to weakness**

- Serratus Anterior
- Rhomboids
- Middle and Lower Traps
- Deep Neck Flexors
- Upper Limb Extensors

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**The Joint by Joint Approach**

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**Why you need a system**

- Systems make sure you don’t miss anything
- Systems give you a roadmap
- Helps you make an accurate DX

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**Mobility vs Stability**
Building the rehab program

- Reestablish pain free passive ROM
  - Adjust, Soft tissue work, mobilization techniques
  - Post isometric Relaxation for pain
  - Post isometric Stretching for ROM

- Progress to pain free active ROM with acceptable motor control
  - Build Endurance
  - Build Strength

McGill’s steps in program design

Pg. 10-11 “Ultimate Back Fitness And Performance”, Fourth Edition, by Stuart McGill, PhD

1. Groove motor patterns, and develop appropriate corrective exercise
   - Find the hardest thing they do well
2. Build Whole body joint stability
   - Utilize full body exercises / patterns
3. Increase endurance
4. Build strength
5. Develop athleticism - speed, power agility
The roll of grip strength in shoulder stability

Conclusion:
Grip training has a positive effect on internal and external rotational peak torque and therefore can help strengthen the muscles around the shoulder without using weight on the shoulder.
**Conclusion:**
Gyrosopic grip stimulation has a positive effect on grip, wrist and shoulder strength, proprioception and upper extremity performance.

**Conclusion:**
There was a positive relationship noted between grip strength and shoulder stabilizer strength most likely due to myotendinous transmission and myofascial excitation overflow.

**Conclusion:**
“In the absence of grip dynamometers, isometric grip strength could be used clinically to monitor strength levels of the shoulder stabilizers.”
The Crooked Arm Bar

Quadruped Exercises

Half Kneeling Waiters Position

• Half kneeling waiters

Half Kneeling Waiters Position

• Full kneeling waiters
Half Kneeling Waiters Position

- Press

6 Point Carries

The Turkish Get Up
The Turkish Get Up

Conclusion:
65% of those with scapular dyskinesis did not develop shoulder pain. 25% without pain did.

Scap. Dyskinesis

Abstract

The Turkish Get Up (TGU) is a popular multi-planar movement that involves a simultaneous shoulder and trunk movement. The TGU can be performed as a static or active movement, with the goal of improving shoulder and trunk strength and stability.

Introduction

The primary goal of this study was to investigate the effects of performing the TGU on shoulder and trunk strength and stability. The study involved a group of healthy, young adult participants who were divided into two groups: a TGU group and a control group. The TGU group performed the TGU three times per week for 8 weeks, while the control group did not perform any specific exercises.

Methods

The Shoulder External Rotation (SER) strength test was used to assess shoulder strength pre- and post-exercise. Trunk strength was assessed using the Trunk Dynamic Stability Test (TDS). Participants were instructed to perform the TGU with their dominant arm extended over their head, and to raise their trunk to a position that allowed both shoulders to be raised simultaneously.

Results

The TGU group showed significant improvements in both shoulder and trunk strength compared to the control group. The TGU group had an average increase of 20% in SER strength and a 15% increase in TDS scores, while the control group showed no significant changes.

Conclusion

Performing the TGU three times per week for 8 weeks resulted in significant improvements in shoulder and trunk strength and stability. These findings suggest that the TGU is an effective exercise for improving shoulder and trunk strength and stability.
**Conclusion:**
Not more prevalent in those with shoulder pain.
Rating was influenced by examiners knowledge of shoulder pain.
May be a normal movement variability.