Corrective Strategies for Overhead Athletes (and Meatheads, Too!)
Tony Gentilcore, CSCS
Thank You to People Who Are Smarter Than Me

- Eric Cressey, Mike Robertson, Mike Reinold, Dean Somerset, Mark Young, Bret Contreras, Mike Boyle, Gray Cook, Optimus Prime
- My Girlfriend, PhD!
- Also, thank YOU!!!!!
Who Is This Gentilcore Guy?

- Brief History – AKA, the boring stuff
  - BA in Health Ed
  - CSCS
  - Former competitive athlete

- Co-Founder of Cressey Performance
  - Hudson, MA
  - Variety of clientele

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Goals/Overview

- Discuss common upper body pathologies and imbalances seen in overhead athletes, as well as Weekend Warriors
  - Shoulder Impingement (primary vs. secondary)
  - AC Joint issues
- Assess, correct, and program around said issues
- Troubleshoot common exercise technique
- Learn to make lemonade out of lemons
  - Learn to elicit a training effect
A Little Taste of CP

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Shoulder Joint Shenanigans

- It’s kind of a big deal
- More than one joint
- GH, scapulothoracic, AC, sternoclavicular
- Lots of “stuff” happening
- 17 muscular attachments alone
Shoulder “Impingement”

- Garbage Term?
- No shoulder is the same.
- Many root causes, which makes assessment all the more imperative.
The Bigger Picture
12 Shoulder Health Factors
(courtesy of Cressey & Reinold)

- Overuse
- Rotator Cuff Weakness
- Scapular Stability
- Poor GH ROM
- Soft Tissue Restrictions
- Poor T-Spine Mobility
- Type 3 Acromion
- Poor Exercise Technique
- Poor Cervical Spine Function
- Opposite Hip-Ankle Restrictions
- Poor Programming Balance
- Faulty Breathing Patterns

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Internal Impingement

- Namely, posterior shoulder pain
- Supra and infraspinatus “pinned” against Posterior-Superior glenoid and labrum
  - EC: shoulder stability sacrificed for mobility
  - EC: 7,200+ degrees IR per throw (20 full revolutions per second)
  - Humeral head migrates superiorly = ouchie
- Seen most often in overhead athletes
External Impingement (Meathead-itis)

- Most common pathology in lifters and “computer guy”
- Anterior Pain
- Pain with bench pressing, overhead activities, as well as approximation
- Primary vs. Secondary
External Impingement

Primary Morphological change

Acromion Type – I, II, and III
External Impingement

Secondary Structural

Poor Scapular positioning, T-Spine, Tissue Quality, Technique, Programming
External Impingement (Poor Scapular Positioning)

- When in doubt – look at scapulae
- Culprit of most (not all) shoulder pathology
- Canoe from cannon
- Poor positioning = FUBAR joint kinematics

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External Impingement (Poor Scapular Positioning)

- Downward Rotators: Upper traps, levator, rhomboids
- Upward Rotators: upper traps, lower traps, serratus anterior
- Tug-of-war between force couples
- When upward rotators weak – often leads to impingement. Unfortunately, many think it’s the rotator cuff that’s the issue. LEAKY ROOF SYNDROME.
Leaky Roof Syndrome

- Treating symptoms and not cause.
- Shoulder hurts? Must be rotator cuff, right?
External Impingement (Poor Scapular Positioning)

- Scapular downward rotation syndrome = downward rotators dominant
  - due to poor training, behavioral demands, and atrocious posture, become short and stiff.

- Also, poor upward rotation = lower back pain
How to “Assess” Scapular Positioning

- Scapulohumeral Rhythm
- After first 30 degrees of scapular elevation, both GH and scapula move in a 2:1 ratio
- Watch for shrugging
- Landmarks: base of spine, inferior angle

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Hammer Low Traps!!!


- EMG of lower vs. upper traps with and w/o impingement
  - WITH impingement = greater ratio of upper to lower trap dominance
  - Asymptomatic: UT to LT ratio of 1.80
  - Symptomatic: UT to LT ratio of 3.15
    - Upper trap 3x more active than lower trap in subjects with impingement.
    - How you like dem apples!!!!

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Hammer Low Traps
(some more)

- No need to get cute in the beginning
- EMPHASIZE technique with the basics
  - COACH your athletes and clients
  - Seated Rows, TRX Rows, Face Pulls, Chin-Ups
- As a result, they’ll learn to promote a more advantageous position for the scapulae – posteriorly tilted (retracted, depressed).

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Half Kneeling Cable Row
Seated Cable Row
Half Kneeling Cable Pulldown
Chin-Up

Coaching Cues

- Shoulder blades in back pocket
- Pull through elbows – NO SHRUGGING
- Pull to sternum
- Don’t dive bomb
- Limit Body English
Hammer Low Traps and Serratus!!!!
Forearm Wall Slides
Forearm Wall Slide – 135 Degrees
1-Arm Prone Trap Raise
TRX Ys
Other Favorites

- Scapular Wall Slides
- Standing Shoulder Ws
  - Mike Reinold
Hand Switches
Slideboard Miyagi’s
Programming Considerations

- Eliminate overhead activities – have to earn the right (lower back considerations).
- Modify or eliminate Horizontal pressing
- Horizontal pull your ass off
- Hammer t-spine mobility (addressed later)
- Avoid “at risk” position – front squat over back squat

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Programming Considerations Continued

- (feet-elevated push-up ISO holds) (feet-elevated)
- body weight push-up
- stability ball push-up
- weighted push-up
- neutral grip DB floor press
- neutral grip decline DB press
- pronated grip decline DB press
- barbell board press
- barbell floor press
- neutral grip DB press
- low incline DB press
- close grip bench press
- bench press
- barbell incline press
- chicks will want to hang out with you. WIN!!!!!
Programming Considerations
Continued

- Limited ROM before full ROM
- Adducted before abducted
- Unstable (GASP!!!!) before stable
- Closed-chain before open chain
- DBs before barbells
- Isometrics before “regular” speeds
- Traction before approximation (pull-ups, before OH pressing)

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External Impingement (Thoracic Mobility)

- One could argue, everything starts and ends with T-spine mobility
- OH reach test
- Drastically effects scapular positioning, and quite frankly, this is of more importance
- Mike Boyle: "The important thing about t-spine mobility is almost no one has enough and it's hard to get too much."

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External Impingement 
(Thoracic Mobility)

- Lumbar Locked Rotation – Greg Rose, Titleist Performance Institute
- A bit more advantageous because it doesn't allow for any cheating.
- By “locking” the lumbar spine into position, we can't use it to produce more range of motion.
- For general population clients, we're looking for anywhere from 50-70 degrees of rotation. Comparatively, for rotational sport athletes, we’d want to see 70-90 degrees – although 90 degrees is freaky.
Lumbar Locked Rotation
Side Lying Windmill
Yoga Push-Up Complex
Supine No-Money Drill
Bench T-Spine Extension Mobilization
Recoiled, Rollover Throws
Where to Place Them?

- As part of a general warm-up
- Pre-Work – paired with med ball work
- “Fillers”
  - A1. Trap Bar Deadlift 4x5
  - A2. Bench T-Spine Ext-Mob 3x8
## Sample Training Day

<table>
<thead>
<tr>
<th>Exercises</th>
<th>Sets</th>
<th>Reps</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1. Trap Bar Deadlift</td>
<td>4</td>
<td>2x3,2x5</td>
</tr>
<tr>
<td>* Irradiation of rotator cuff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2. Bench T-Spine Ext-Mobilization</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>B1. 1-Arm Standing Cable Row</td>
<td>3</td>
<td>10/arm</td>
</tr>
<tr>
<td>B2. Push-Ups; Loaded</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>C1. Face Pulls w/ External Rotation</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>C2. 1-Legged Hip Thruster – off bench</td>
<td>3</td>
<td>10/leg</td>
</tr>
<tr>
<td>D. Scapular Stability Circuit: Hand Switches, Forearm Wall Slides</td>
<td>2</td>
<td>10/each</td>
</tr>
</tbody>
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AC Joint Conundrum
(Acromioclavicular Joint for the non-nerds out there)

- Pain with palpation, horizontal ADDuction, full extension, and approximation (usually)
- Party at the Coracoid Process
  - Pec minor, coracobrachialis, and SH of bicep

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AC Joint Conundrum

- Almost always, look at pec minor: computer guy (flexion)

- Signs?
  - Scapular Protraction
  - Loss of scapular posterior tilt (winging)
  - Decreased sub-acromial space (impingement)
BUT, Important to Make Sure
Programming Considerations?

- Always start with soft tissue work, a close second would be ball SMR with a ball.
- When in doubt, improve upward rotation
  - Strengthen lower traps and serratus anterior, stretch pec minor, levator scapulae
- Behavioral Modifications
  - Tissue creep

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SMR with Ball
Programming Considerations

- Lower body – really, only thing to avoid is front squats
  - Specialty bars, Draper top squat
  - Single leg work (except FSG), GHR, barbell bridges, deadlifts, free game

- Never, ever, ever, ever, never, and I mean ever….perform another dip – not worth it!

- Overhead Pressing may be okay – individual basis

- Push-Ups? Might be iffy.
  - Iso Holds, pain free ROM
  - Likewise, benching probably a no go. Board presses

- Avoid full extension on rowing variations
  - Pec Minor = scapular anterior tilt. Compensate retraction/posterior tilt with GH hyperextension (and forward lean with head)
GCB Bar
Dips
(*Seriously, Stop It!!!)

- Just asking for trouble
- Maximal IR with GH extension
- Cost - Benefit

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Elevated Push-Ups
Push-Up ISO Hold with Perturbation
DB Floor Press
Board Press
Bad Row/Good Row
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<tr>
<td>A1. GCB Box Squats</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>A2. Supine No-Money Drill w. Band</td>
<td>3</td>
<td>3x(3x10s)</td>
</tr>
<tr>
<td>B1. 1-Legged Push-up ISO Hold (Pain Free!)</td>
<td>3</td>
<td>15s/leg</td>
</tr>
<tr>
<td>B2. TRX Inverted Row</td>
<td>3</td>
<td>8-10</td>
</tr>
<tr>
<td>C1. DB Reverse Lunge – from deficit</td>
<td>3</td>
<td>8/leg</td>
</tr>
<tr>
<td>C2. Pallof Press</td>
<td>3</td>
<td>10/side</td>
</tr>
<tr>
<td>D. SMR Ball Rolling on Wall</td>
<td>2</td>
<td>infinity</td>
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And That’s About It

- www.tonygentilcore.com
- www.cresseyperformance.com