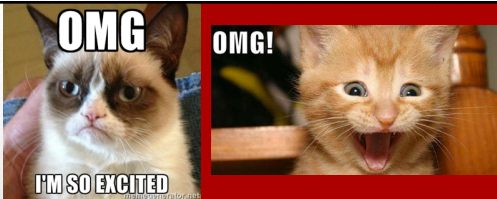




Complete Shoulder & Hip Workshop

1

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The Part Where I Spend a Day Talking About Shoulders

Tony Gentilcore, CSCS, Level III Jedi, Level IV Tracy Anderson Hater

2

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- **Brief History**
 - BA in Health Ed
 - CSCS
 - Co-Founder Cressey Sports Performance
 - I write stuff
- **Likes** – lifting heavy things, cheese, Jason Bourne, ninjas, zombies, old school hip-hop.
- **Dislikes** – kipping pull-ups, talking about “feelings.”



I'm, Like, Super Important

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Shout Outs to People Who Are Kind of a Big Deal

CSP Team, Eric Cressey, Mike Reinold, Mike Robertson, Sue Falsone, Dr. Evan Osar, PRI, Han Solo, etc.

YOU!!

4

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- Anatomy
- Inside look at Upper Extremity Assessment
- Showcase Statistic to help with final Assessment
- How Eric Cressey's Assessment? Simon has to take their own off
- Creative and programming strategy based off assessment and common approach or training situation
- Computer Guy vs. "Athlete" Considerations
- Reverse Posturing
- Flexion in "All The Bad"
- Coach "Start" Up (BONUS: Big Book of Coaching Cuing)
- Try not to refer to Star Wars too much.

Outline/Overview

5

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START WITH WHY


SIMON SINEK

HOW GREAT LEADERS INSPIRE EVERYONE TO TAKE ACTION

WILL BE A NEW FAVORITE FOR AFTERWORD


WHY?

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Is This Good? 7

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And This? 8

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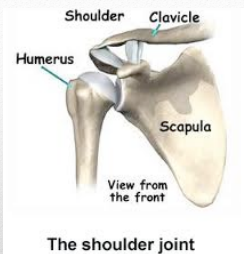


- Left Handed Pitcher
- Ulnar Pain
- Ulnar Neuritis

How About This? 9

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- More Than One Joint
- 17 Muscular Attachments to Scapulae Alone



The shoulder joint

Shoulder Joint Shenanigans

10

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Glenohumeral Joint

- Ball and socket joint.
 - Can be considered a golf ball and tee
 - Relies on passive support by labrum, capsule, & ligaments
- RC: SITS
 - Collectively with long head of biceps brachii depress and stabilize humeral head

Glenohumeral Joint

- Supra = abduction, counteracts superior pull of deltoid.
- Infra/Teres = ER
 - Collectively aid in ER when humerus @ 60-90 degrees abduction
- Humeral head depression
- Subscap = IR
 - Only RC muscle to have posterior pull, counteracting ant pull of ant deltoid, infra, and teres minor

Lets Plow Through the Boring Stuff First

11

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- Not a true joint
 - Lacks ligamentous support, joint capsule, synovial membrane & fluid.
- Function = place humerus in space to position optimal alignment that improve functional support of GH joint
- Neutral = between 2nd & 7th thoracic vertebral levels
- 1-3 inches from midline of the spine
- Actions: adduction, abduction, retraction, protraction, depression, elevation, Down Rot, Up Rot, IR, ER, Ant Tilt, Post Tilt

Scapulothoracic Joint

12

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Acromioclavicular

- Aids in optimal positioning of scap for OH activities
- Muscles Involved: Anterior deltoid, upper traps, subclavius

Sternoclavicular

- Only bony attachment of the appendicular skeleton to axial skeleton
- Muscles Involved: SCM, Pec Major.

Almost Done...Promise

13

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- Which is more important: Stability or Mobility?

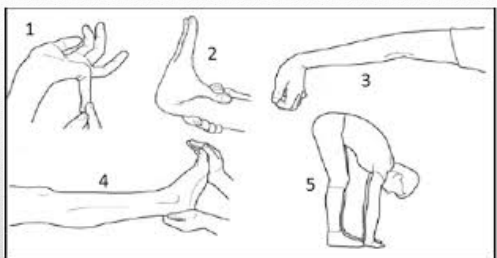
- Alignment!
 - Stretch into misalignment = instability
 - Strengthen in misalignment = imbalance



Static Assessment

14

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Beighton Laxity Score

(HINT: You Should Be Using This Screen) 15

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Poor Posture **Good Posture** **Poor Posture**

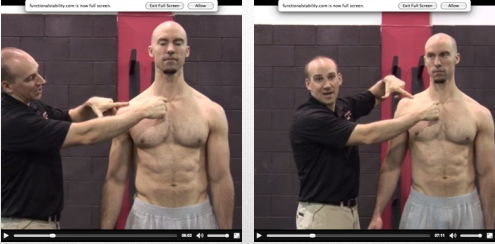
- Straight lines & 90 degree angles.
- Spine and thorax should stack vertically over pelvis, with ribs in relative caudal position.
- Gentle kyphotic curve in t-spine, gentle lordotic curve in cervical & lumbar.
- Shoulder and pelvis “level.”

Static Assessment 16

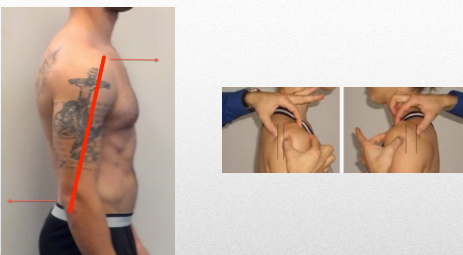
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Static/Isolative Posture Presentations

Highlight Scapular Borders (Show Where People Start)



Clavicular Angle

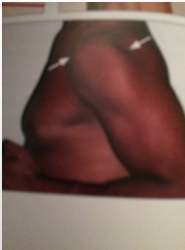


Glenohumeral Anterior Glide

20

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- Occurs as shoulder moves into extension.
- Divot appears on posterior aspect of joint due to loss of centration.
- Humeral head translates forward
- Anterior Glide = more than 1/3 of humeral head can be palpated in front of acromion process
- Sulcus Sign (laxity?)
- Load & Shift (laxity?)



Glenohumeral Anterior Glide

21


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LATS!!!

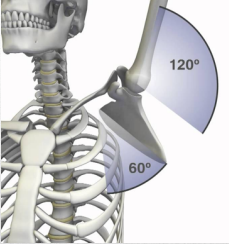
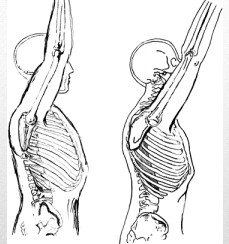
Massive muscle, with many insertion points.
 Intertubercular Groove of Humerus,
 Ribs, Scapulae (40%),
 Thoracolumbar Fascia (some on Ilium)

Think the lats don't play a role in shoulder function?




- Humeral Extension, Adduction, Internal Rotation, Horizontal Abduction
- Lumbar Extension, Lateral Flexion
- Respiration
- THINK: what do people have to do to get their arms over their head?

LATS

Dynamic Assessment 24

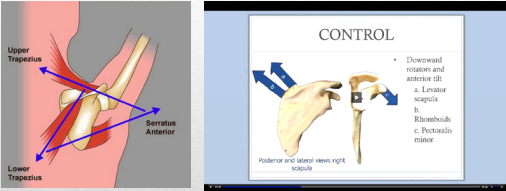
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Houston, We Have a Problem (Photo: Mike Reinold) **25**

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Upward Rotators • **Downward Rotators**



Upward vs. Downward Rotators



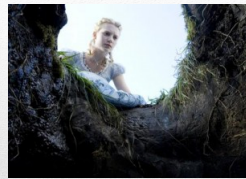
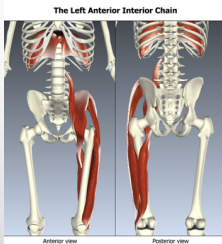
Shoulder Flexion (Active) **27**

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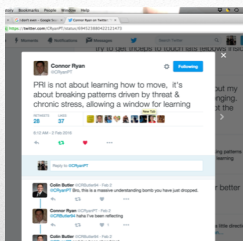
Shoulder Flexion (Passive) 28

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A Quick PRI "Rabbit Hole" Break 29

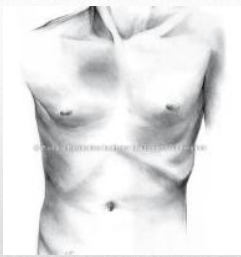
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- Has nothing to do with gas exchange.
- Helps get people more parasympathetic
 - Toxic Hostility
- Own "canister" position.
 - Thoraco-Pelvic Rings

The "Real" PRI

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Left AIC

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- Diaphragm, iliacus, psoas, TFL, Vastus Lateralis, biceps femoris
- Have an IAC on both sides
 - Right foot lands = Left AIC engaged (and vice versa)
- Left side always "on" and "pushes" us into right side dominance.

Left AIC

32

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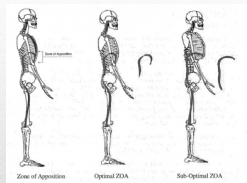
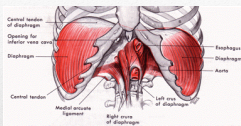


Photo Courtesy: Postural Restoration Institute

Zone of Apposition

33

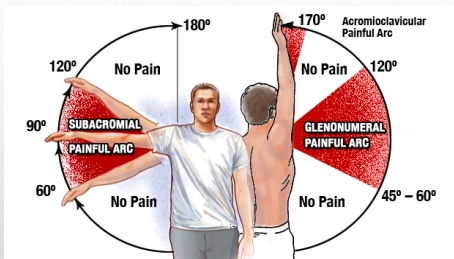
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- Airflow drives the nervous system.
- Respiration you learned in school is gas exchange. Breathing is movement.
- Canister vs. Scissors
- Chest Breather = dominant “accessory” breathing muscles.
- LAIC = stronger, what feels normal. (NOT OPTIMAL)
- Left Stance = changes pelvic floor, diaphragm better aligned, STRONGER POSITION.

PRI For Dummies

34

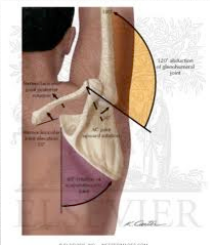
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“Pain” Arc

35

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- 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 of scapulae

Scapulohumeral Rhythm

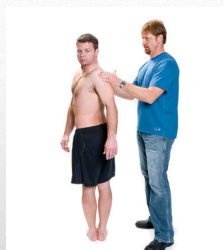
36

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Poor Eccentric Control 37

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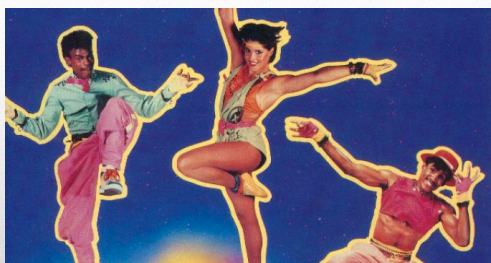
Rotation 38

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Lumbar Locked Rotation 39

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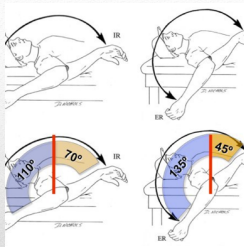
Breakin (Rolling Patterns) 40

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Push-Up 41

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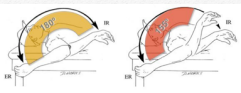
• Posterior Capsule tightness?

GIRD?

42

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Loss of side-to-side IR is actually a normal anatomical adaptation in overhead athletes and SHOULD NOT be considered pathological GIRD unless there is a subsequent loss of TOTAL rotational motion in the dominant arm as well.
 - Mike Reinold



New GIRD 43


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Shoulder Impingement



Shoulder "Impingement"

Garbage Term.
 No two shoulders are the same.
 Many root causes, which makes assessment all the more imperative.
 Impingement Sign
 Hawkins Test



44

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- 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

The Bigger Picture. 12 Shoulder Health Risk Factors 45

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1. Overuse

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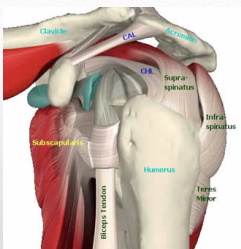


2. Rotator Cuff Weakness

Band work isn't always the answer

No need to get fancy.
Empty Can Test
Drop Test

47



- Role of Rotator Cuff:
 - External/Internal Rotation?
 - Elevate arm in scapular plane?
 - Humeral Depression.
- It's TRUE Function
 - Center humeral head within glenoid fossa

Rotator Cuff Training

48

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- High-Reps = superior humeral migration
- FATIGUE!
- Rhythmic Stabilizations
- Oscillations
- Horizontal Iso Hold Press/Row



Is Band Work REALLY the Answer?

49

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Computer Guy vs. Athlete/Meathead

50

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Computer Guy (Generally Needs)

- More extension.
- More attention to t-spine mobility (extension/rotation).
- Less Upper Trap Work
- Better Lumbo-Pelvic Control
- Needs to get strong as fuck

Meathead/Athlete (Generally Needs)

- Prioritize **UPWARD ROTATION**
- Strengthen eccentric action of upward rotation.
- Improve shoulder flexion?
- More attention to t-spine (flexion)
- Better Lumbo-Pelvic Control
- Also needs to get strong as fuck.

Different Strokes, Different Shoulders

51

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- Most common pathology in lifters and "computer guy"
 - Standard subacromial "impingement"
- Anterior Pain; bursal side
- Pain with bench pressing, overhead activities, as well as approximation
- Primary vs. Secondary



External Impingement (Meathead-itis)

52

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- Morphological/Structural



Primary

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- Lifestyle Factors
 - Poor Scapular Positioning
 - T-spine Mobility
 - Poor Tissue Quality
 - Watching 50 Shades of Grey

Secondary

54

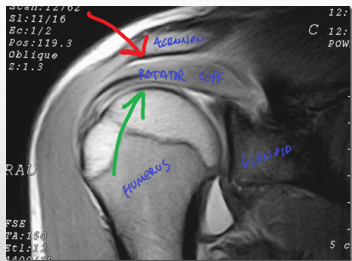
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- Namely, posterior shoulder pain; articular side (inside)
- Supra and infraspinatus "pinned" against Posterior-Superior glenoid and labrum
 - shoulder stability sacrificed for mobility
 - 7,200+ degrees IR per throw (20 full revolutions per second)
 - Humeral head migrates superiorly = Ouchie
- Seen most often in overhead athletes



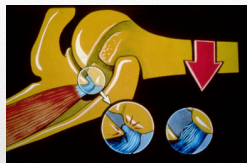
Internal Impingement 55

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Red = Bursal. Green = Articular

- Unless you're an overhead athlete you don't have this.
- Don't get it from sitting at your desk
- As you move into ER, sometimes you "pinch" Posterior-Superior aspect of glenoid
- Contact b/w articular side of supra/infraspinatus & posterosuperior rim of glenoid.
- Late Cocking: max abduction + ER



Internal Impingement 57

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Why It Occurs

- It's normal (in overhead athletes)
- However, more excessive the ER = more risk

What Makes it Worse?

- Scapular Position
 - Affects position of glenoid
 - Decrease in ability to rotate scapulae
 - Thorax position affects scap position
- Anterior Laxity
 - Ant. Translation = FAIL
 - Instability

Internal Impingement

58

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- Points to front of shoulder and it hurts all day= it's NOT Internal Impingement.
- Hurts in "cocked position," and points to back of shoulder = Ding, ding, ding.
- Can use "Apprehension Test" to ascertain things.

Final Say

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Strength Training

- Posterior Cuff
- Scapular Retraction
- Scapular Posterior Tilt
- SLER
- Prone ER
- Prone Trap Raise

Dynamic Stabilization

- Wall Dribbles
- Half Kneeling Rhythmic Stabs.
- Band Rhythmic Stabs.
- Ball to Wall Rhythmic Stabs.
- Deceleration Flips
- 90/90 ER, ER Holds, and IR/ER Holds
- Bottoms-up Carries

Training Emphasis

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3. Scapular Stability

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How To Improve Overhead ROM (Photo: Mike Reinold)

62

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- Shoulder
 - Capsule → least common. Soft Tissue (muscle)
- Scapula
 - Upward Rotation (imbalance or motor control?)
- Thoracic Spine
- Lumbo-Pelvic Control

FOUR Most Common Things to Look At

63

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- Foam Roll Lats
- Teres Minor/Major
- Pecs
- Extension of T-Spine

Attack Tissue Quality 64

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- Want to improve UR, but also strengthen eccentric control of upward rotation
 - Prone Lengthening
 - Modified Quadruped
 - Modified Quadruped w/ Elbow Extension
 - Band Ws
 - Band Windshield Wiper
 - Band Wall Walk
 - Plank to Downward Dog, Yoga Push-Up Variations
 - Plank Rolling/Bodysaw
 - Sematus Upward Jab
 - Sematus Wall Slide w/ Foam Roller, Wall Slide Variations
 - Wall Plank Arm Slide I, II (w/ shoulder rotation/elbow support), III (w/ shoulder rotation/hand support)
 - Sapine Arm Slide/Spider
 - Standing Back to Wall Spider
 - TRX Sematus Slide

Upward Rotation 65

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Supine 90/90 Floor Slide Seated Wall Slide



Upper Cross Syndrome 66

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- Quadruped Variations
- Cat-Camel
- Side Lying Windmill
- KB Pullover w/ Foam Roller
- Side Lying Extension-Rotation
- Prone Thoracic Extensions
- Prone Sphinx

T-Spine

67

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Deadbug w/ KB



Prone Plate Switches



Lumbo-Pelvic Control

68

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Bear Crawl w/ Plate Glide Core Engaged ASLR



Lumbo-Pelvic Control

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Flat T-Spine? 70

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(Anti-Flexion)

- Spinal flexion should be saved for “life” activities, and not “wasted” on crunches and other spinal flexion-based exercises

(Pro-Flexion)

- Note a discrepancy between what is done in the lab and what is occurring on fields and in gyms with respect to *total* flexion cycles.



Fistacuffs 71

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Are You Gonna Disagree With This Boss...?? 72

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It's Always Spinal Flexion's Fault

In the Lab
 In Vitro = 4,400-86,000 bending cycles
 Compression loads equating to 1500N
 McGill found crunch to elicit 2000N
 (450 lbs)

73

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- Studies in question all done **In vitro**
 - Limited by removal of musculature & does not replicate in vivo response to human movement
 - All living tissue remodels when subjected to applied stress
 - Wolff's Law, Davis's Law
- Studies meant to mimic occupational workers & emulate 1000s of reps.
 - Not entirely realistic
 - Can this REALLY be compared to what happens on the gym floor?
- Real Training = allowed to rest, tissue remodels
- Exercise Induced Disc Damage = fatigue failure outpaces rate of adaptive remodeling

To Crunch Or Not to Crunch: An Evidence Based Examination of Spinal Flexion Exercises, Their Potential Risks, and Their Applicability to Program Design (Contreras, Schoenfeld, Aug. 2011, Vol. 33, Issue 4, pp 8-18).

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- Spinal motion shown to facilitate nutrient delivery to intervertebral discs.
- Spinal Flexion = improved spinal flexibility
 - Lack of sagittal plane flexibility = LBP

Benefits of Spinal Flexion.

75

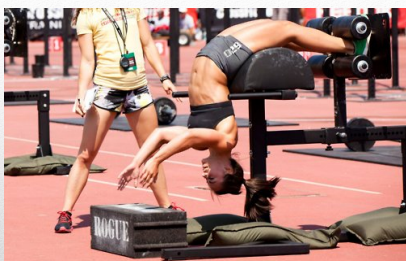
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- Inc. Connective Tissue Strength
- Inc. Muscular Strength
- Inc. Motor Learning.
- Inc. Neuromuscular Coordination.
- ALSO
 - May help alleviate LBP in people with ***HYP***ERmobility.

Strength Training Works 76

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So, Long Story Short...Don't Do This 77

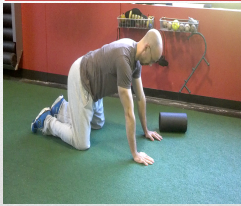
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- 1. End Range Lumbar Flexion (and Extension).
- 2. Lumbar flexion for those already in flexion
- 3. Lumbar flexion under load.

TG (Flexion) Rules... 78

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All 4s Belly Breathing



Deep Squat Belly Breathing



Flexion is Necessary!

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4. Poor Exercise Technique

80

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- Have to earn the right!
- What's the cue for OLY Lifting?
- A TON of anterior instability
- More bicep tendon issues

Should People Overhead Press?

81

- Tall Kneeling to Standing
- Get-Ups
- KB Presses/Bottoms-Up Presses/Landmine Variations
- Pull-Ups/Chin-Ups
 - Hollow Position, Hollow w/ Stick, Hollow Toe Taps, Push-Up, Push-Up Walkouts, Bodsaws, Rollouts
 - Flex Hangs, Leg Raises
 - TRX Progressions
 - Band Assisted (Heavy/Light/Rule of 10)
 - Grease the Groove

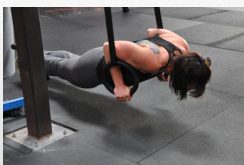
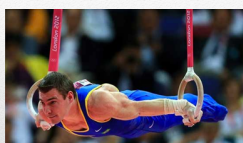
Overhead Stuff That Doesn't Make Me Want to Swallow a Live Grenade

82

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What you THINK is happening

What's ACTUALLY happening



Gymnastics Training

83

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- Underrated component of shoulder health
- Stay cognizant of imbalances/postural issues.

- Rollouts
- Hollow Position
- Hanging Leg Raise
 - Knees Only, 90 Degrees, Ankle Taps
 - Regressed to Floor
- Grease the Groove
- Rule of 10

Pull-Up/Chin-Up Programming

84

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- Bench Press

- Rows

- BO Rows, Cable Row, DB Row, CSR, Batwing, TRX w/ Reach

Lets Discuss...

85

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Overhead Athlete

- Let the scapulae move!
 - Landmine Variations
 - Push-Ups
 - Off-Center DB Press
 - Cable Press
 - HK, Squared Stance, Staggered, w/ Rotation
 - Turkish Get-Up
 - Short Lever KB Rotation

Computer Guy

- Reduce benching volume.
- Learn to bench correctly
- Improve Pull-up strength
- Reduce benching volume.

5. Poor Programming

86

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- Positional Breathing
- T-Spine/Core Control
- Shoulder Flexion ROM
- Scapular Control (Wall Slides)
- Glenohumeral Motor Control (Prone/Supine ER/IR)
- Glenohumeral ROM (only when indicated!)

Programming Considerations (Warm-Up)

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- Eliminate overhead activities – have to earn the right (lower back considerations).
- Modify or eliminate Horizontal pressing
- Lots of horizontal pulling
- Hammer t-spine mobility
- Avoid “at risk” position – front squat over back squat

Programming Considerations

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- 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)

Programming Considerations Continued

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- (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!!!!

Bench Press Progression

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Thank You!

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