

NSCA

COACHES

CONFERENCE 2023

JANUARY 4 – 6, 2023

Charlotte, NC & Online | 2.0 CEUs

#NSCACoaches23

CONFLICT OF INTEREST STATEMENT

I currently have, or I have had in the past 2 years an affiliation or financial interest with [**Allegheny Health Network, PBSCCS**] around this presentation, including:

- **Consulting**
- **Employment**
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- Royalties or licensing fees
- Honoraria
- Promotional fees
- Research funding
- Corporate laboratory funding
- Scholarship
- Other(s)

COMPREHENSIVE SHOULDER CARE STRENGTH TRAINING FOR THE OVERHEAD ATHLETE



Frank Velazquez, CSCS, RSCC*D

Comprehensive Shoulder Care: Strength Training for the Overhead Athlete





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BIO

- University of Michigan '93
- Out-Patient Physical Therapy
- ATC, CSCS ('94, '98)
- *16 Years Pro Baseball*
 - Texas, Pittsburgh
 - 2008 MLB Sports Med Staff of Year
 - 2017 SC for TEAM USA (WBC)
- Co-Owner of VESLA 360 Sports Performance & PT
- *Director of Sports Performance – AHN (Oct. 2015)*



AHN Sports Performance & Physical Therapy

AHN Sports Performance is a department within the Orthopaedic Institute that is unique and progressive providing a “all inclusive” service that includes physical therapy/sports rehabilitation, strength training, recovery, vision/reaction training, nutrition, cardio fitness, mental conditioning to active adults, developing youth and performing athletes (youth level to professional level). [AHN Sports Performance and Physical Therapy](#) is the premier sports performance training facility in Western PA servicing approximately 33,000 clients/customers/patients per year



MISSION

- AHN Sports Performance **educates, builds confidence, instills leadership** and assists clients in reaching their goals on and off the field of play by training for **durability** by improving flexibility, mental fortitude, functional movement and total body strength using evidence based and time tested methods to achieve **optimal performance...** in order to excel and withstand the demands of life and sport.

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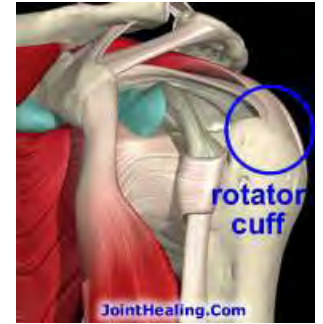
The KINETIC CHAIN

- Foot / Ankle (Plantar Fascia)
- Knees (IT Band)
- Pelvis
- Lumbar Spine
- Thoracic Spine
- Shoulder / Scapulae
- Head / Neck
- Volume / Overuse

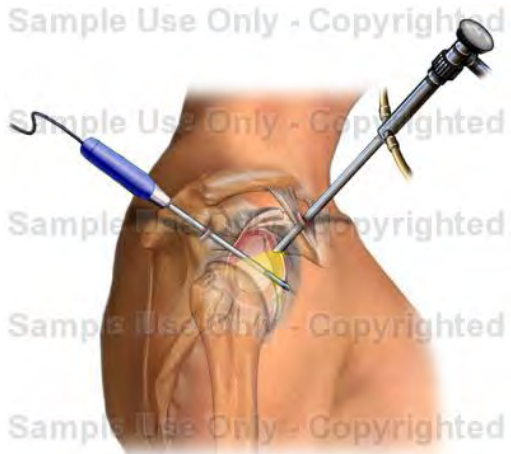


SHOULDER ANATOMY

- Very Special Joint
- Ball and Socket Structure
- Several Muscles (17) cross the joint
- Movements of the Shoulder
 - Flx,Ext,Abd,Add,IR,ER,,H-Ab,H-Ad,Circ.
- 2nd Fastest Joint in the body (3500 deg/sec)
- Throwing/hitting objects at max intensities up to 100 reps in a session is NOT A NORMAL ASK of the shoulder



OVERUSE & ABUSE



COMMON DIAGNOSES

- RTC Inflammation/Strain (shoulder pain)
- Medial Epicondylitis (Little Leaguer's Elbow)
- G.I.R.D. (Glenohumeral Internal Rotation Deficit)
- S.I.C.K. Scapula (Supra Infra Corocoid dysKinesis)
- Ligament Sprain
- Stress Reaction/Fraction (shoulder/elbow)
- RTC and/or Labrum/Ligament Tear (surgical intervention)
- UCL Inflammation/Sprain/Partial Tear (Tommy John)



PREVENT?

- Be careful of your choice of words
- REDUCE THE RISK!
- ENHANCE PERFORMANCE?
 - Put one in a position to maximize performance potential

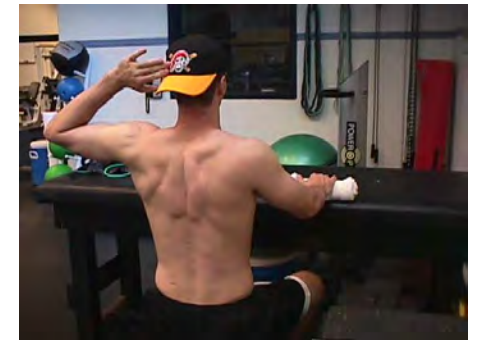
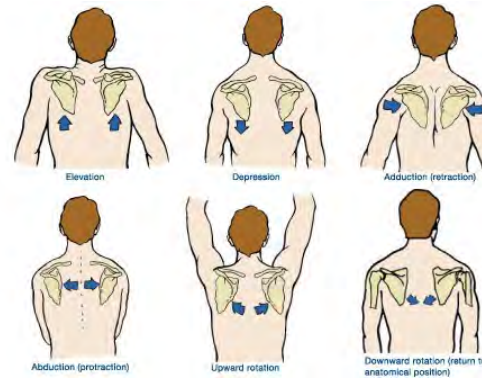
THROWER'S 10!

- The Top 10 considerations for when strength training the Overhead Athlete



1) SCAP MOBILITY & STRENGTH

- Start with the Scaps!
- 6 Movements of the Scapula
- Stability?
- **Controlled Mobility!! (Falsone)**
- Decelerators
- “Shooting the Canon Out of the Canoe” (Gambetta)
- YTIW, 4 Pos.Tubing, 6” Box, DB Press Ups, PB Walkouts
 - Open Chain → Closed Chain



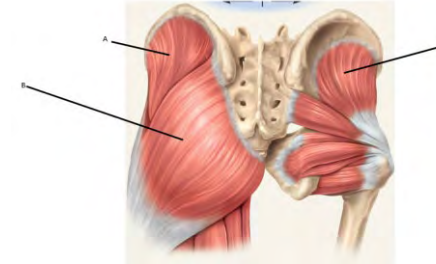
2) ROTATOR CUFF

- 165 Deg of Total Arc (ER > IR)
- Post. RTC tightness (Sleeper)
- 4 Small Muscles (S.I.T.S.)
- RTC Centers Humeral Head, Stability
- Tubing, DB, Manuals, Ball Flips, Long Toss Program



3) HIP MOBILITY / PELVIC STABILITY

- 90 Deg Total Arc
- ER > IR
- Getting Thru the Ball
- **1-Leg Exercises (Glutes)**
 - Glute Clams, Ankle Bands, Bosu Balance, Reverse Lunges, Box Step Ups, Sled Push, Lateral Bounds



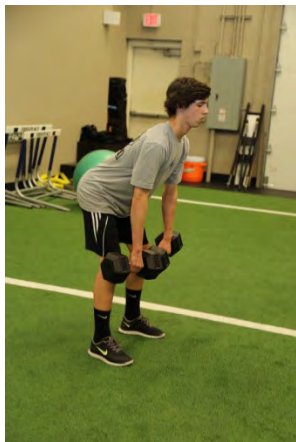
4) CORE STRENGTH

- Stability (planks)
- **Foundation**
- 3 D Mobility (Chops, Lifts, Rot.)
- BRIDGE / Transfer of Power



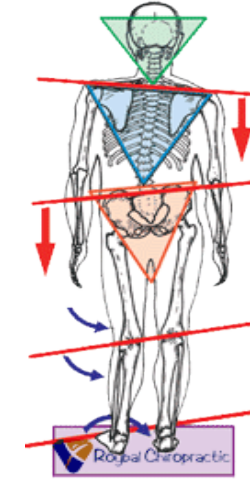
5) LEG STRENGTH

- “The Legs Feed the Wolves!” (H. Brooks)
- Stronger Lower ½ = Less Labor for Upper ½
- POWER Development
- 2 Leg vs. 1 Leg
- Customization



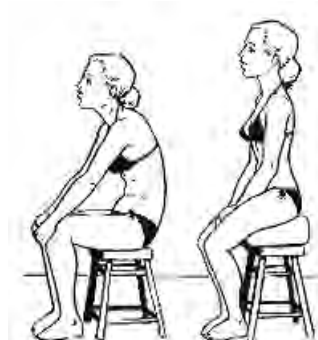
6) POSTURE

- Correcting the Alignment of the Car
- Strength: Back > Front
- Train the Muscles you Can't see in the Mirror
- Flexibility: Front > Back
- Creates space for RTC
- Protects Joints
- Power Development



7) THORACIC EXT. / ROT.

- Kyphotic Thoracic Spines
- Rounded Shoulders
- Thoracic Extension allows for increased Shoulder External Rotation
- Thoracic Rotation allows for increased rotational torque



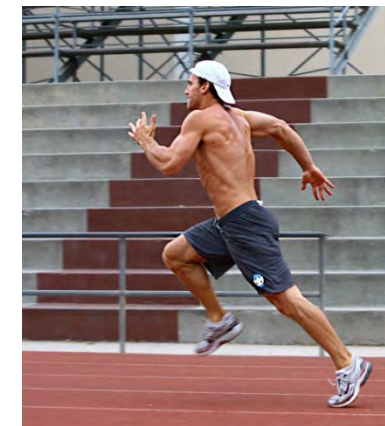
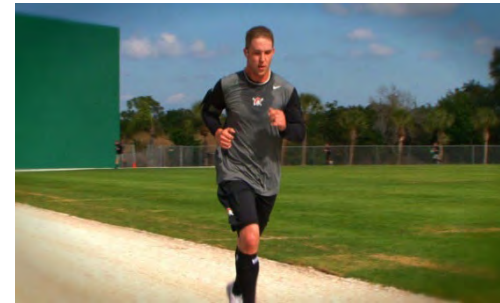
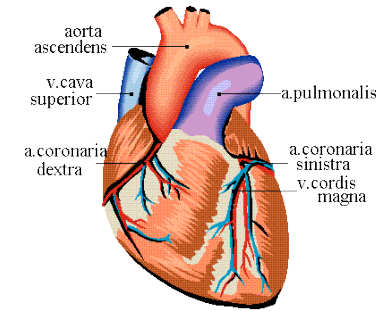
8) THROWING PROGRAM

- Serious Business (4-6 weeks pre)
- **#1 Exercise for the RTC**
- Time / Distance
- Long Toss Mechanics
 - Footwork, Direction, Arc, Ext., Follow Thru
- Arm Strength / Throwing Velocity / Arm Care



9) CARDIO FITNESS

- **Aerobic < Anaerobic**
- Heart Rate / Interval Training
- Leg Strength / Strong Heart
- Resist Fatigue
- Lots of Ways to do this
- Aerobic = Recovery Flush



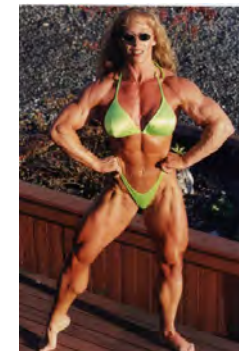
10) RISK VS. REWARD

- BB Over Head Lifts
- Behind the Neck
- BB Bench Press
- Dips
- Shrugs
- High Pulls
- Hang Cleans
- **Weighted Ball Throwing Programs**



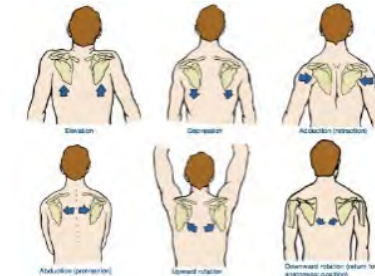
METHODOLOGY

- Posture
- Core
- Movement
- Strength
- Anaerobic Fitness
- Arm Strength/Care
- Wellness



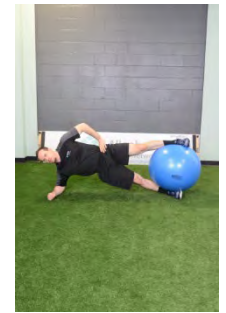
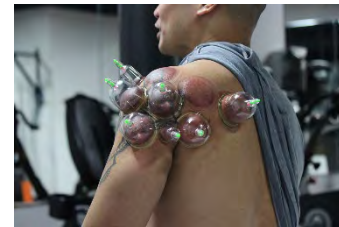
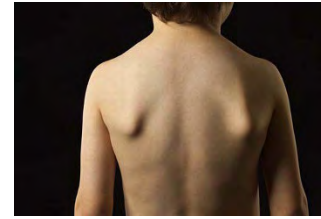
G.I.R.D.

- Regain Shoulder IR
 - “Hands on” soft tissue work, stretching
 - “Sleeper Stretch: HEP, review correct form
- Check Scapular Mobility: stuck in poor posture (rounded)
 - Active and Passive work in all scapular movements
- Check Opposite side Hip IR (allows to “get thru” the ball”)
- “Chest Opener” Stretches (Pec Minor)
 - ½ F.Roll (passive), Full F.Roll (active), Physioball (active)
- Thoracic Extension Stretches
- Improve Scap Stabilization (mid-lower trap, rhomboids, para-spinals)
- Glute/Core/Hamstring Strength
- Strength Training Pull > Push
- Progress to T.P.



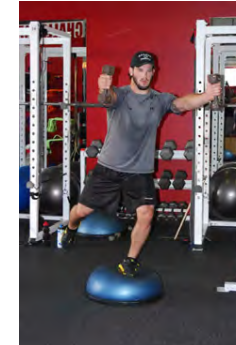
S.I.C.K. SCAPULA

- “Hands On” scap mobilization (all movements)
- Check Scap Control (abd/flex): add 2-5lb DB (identify asymmetry/winging)
- Correct Winging
 - Chest Openers (pec minor)
 - RETRACTION (shoulders away from ears, >upper trap)
 - Scap/Core/Glute Strength Exercises
 - D-Breathing
- Myofascial Decompression (MFD +Cupping)
- Check Oppo Hip IR
- Start RTC, Hand/Wrist/Forearm Exercises
- Glute/Core/Hamstring Strength
- Strength Training Pull > Push
- Progress to T.P.



RTC INFLAMMATION/STRAIN/SHOULDER PAIN

- Put out the Fire! **TIME/REST**
- Chest Openers (pec minor)
- **Thoracic Extension/Rotation**
- All RTC exercises are to be done PAIN FREE
 - Tubing: ER/IR/Ext... ER 90/90, IR, D2 (reverse throw)
 - DB: 0-5lb max, Abd/Flex/Scaption, Ground → Bosu Ball
 - Manuals: Con/Ecc ER, Pro/Ret, D2 Patterns (Hands on!)
- Glute/Core/Hamstring Strength
- Strength Training Pull > Push
- Progress to T.P.



UCL INFLAMMATION/SPRAIN/PARTIAL TEAR

- **UCL Tears DO NOT heal like tendon/muscle injuries**
 - 70% of MLB Pitchers have some level of UCL pathology
 - Size of tear and location are important factors
 - Sometimes misdiagnosed as Strains to the Flexor Mass (Valgus Test)
 - Mobility and Strength are a MUST for rest of playing career
 - Often failure occurs during throwing/mound progression
- Control Pain/Swelling
- Check ROMs (Shld IR, Oppo Hip IR)
- Work on Thoracic Extension
- Work on RTC, Hand/Wrist/Forearm (pain free)
- Glute/Core/Hamstring Strength
- Strength Training Pull > Push
- Progress to T.P. (review of mechanics)



STRESS REACTIONS / FRACTURES

- **REST**
- Wellness Review: nutrition/hydration/sleep practices
- Review throwing volumes
- **DO NOT stretch into Shoulder IR/ER (0-2wk)**
- Pain Free glute/scap/core exercises
- RTC exercises (pain free)
- Hand/Wrist/Forearm Exer. (pain free)
- Strength Training Pull > Push
- Progress to T.P.



STRENGTH PROGRAM DESIGN

- Strength Training will...
 - “Reduce the risk” of over use injuries
 - Put in a position to enhance performance
- LEGS! CORE! BACK! ROT. POWER!... Priorities
 - Protect the shoulder/elbow, throw harder, run faster, hit with power
- BIW, TIW or QIW for optimal results
- Push/Pull or Lower/Upper design
- **Periodization** (Foundation/Strength/Speed-Power/Sports Specificity)
- **Train in-season** to “maintain” and for muscle balance



STRENGTH PROGRAM DESIGN

- The Methodology...

- Foam Roll / Mobility
- Activation (glute/scaps/core)
- Speed / Agility
- **Strength Train (Lower, Upper or Total Body)**
- Anaerobic Fitness
- Cool Down Activity (Stretch, D-Breathing, Flush Ride, etc.)



ACTIVATION EXERCISES

- Ankle Bands – Glute Meds
- Scap Tubing – Shoulders
- Plank Core – Lumbar Spine
- PB Hamst/Bridge – Hamstring/Glutes
- 1-Leg RDL – Pelvic Stability, Glute Meds



H.E.P. EQUIPMENT

- Foam Roll (\$30-\$45)
- Ankle Bands (\$10)
- Scap Tubing (\$10)
- Exercise Ball (\$30)
- Body Weight (\$0)
- Other Items
 - Bosu Ball (\$150)
 - TRX unit (\$150)
 - Medicine Ball (\$50)
 - Weights: kettle bell, dumbbell (\$100)



Equipment



- Level 1: BW, Foam Rolls, bands, tubing, physioball
- Level 2: Bosu Ball, TRX, DBs, KBs, Adj. Bench
- Level 3: ½ Rack, BB, HEX Bar, Plates, bumpers
- Creativity: logs, tires, chopping wood, hills, mulch, landscaping, climbing, trails



THE “LITTLE” THINGS... THAT MAKE A **BIG** DIFFERENCE

WELLNESS

- *Things that YOU can CONTROL*
- Hydration
- Nutrition
- Rest



HYDRATION

- Water is KING (Alkaline vs Acidic)
 - Sports drinks, fruit juices, soda, caffeinated beverages
- Early & Often
- Electrolytes
 - What are they? What do they do?
- Dehydration
 - Negative effect on performance



NUTRITION

- Breakfast!!
 - NO Excuses
 - w/in 1 hour after waking up
- Meal Frequency (early & often, 5-6/day)
- 80/20 Rule
- **Food is your Energy!**
- Supplements (NSF)
- Detailed Plan (R.D.)
- Nutrition for Recovery
 - 15-30' post activity
 - Anti Inflammatory Foods
 - Chocolate Milk



FOODS THAT FIGHT INFLAMMATION

Chronic inflammation has been linked to cancer, heart disease, diabetes, arthritis, depression, and Alzheimer's. Fight inflammation with a healthy diet.

ANTI-INFLAMMATION FOODS

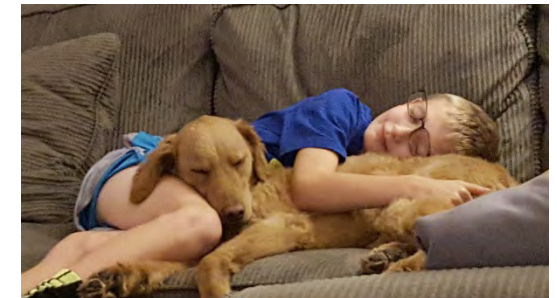
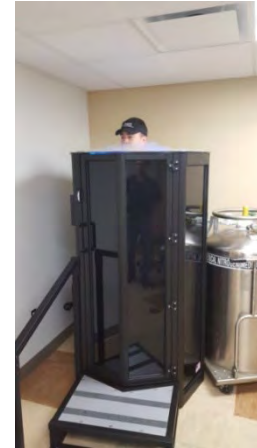
- Tomatoes**
- Fruits**
Strawberries, blueberries, oranges and cherries.
- Nuts**
Almonds, walnuts, and other nuts.
- Olive oil**
- Leafy greens**
Spinach, kale, collards, and more.
- Fatty fish**
Salmon, mackerel, tuna, and sardines.

INFLAMMATION FOODS

- Fried foods
- Sodas
- Refined carbs
- Lard
- Processed meats

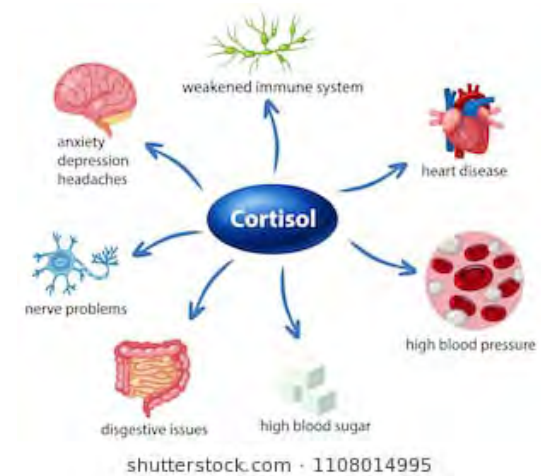
REST/RECOVERY/REGEN

- 8-10 Hours / Night
- Tissue Repair / Stress release
- Release of Human Growth Hormone
- Sleep Deprivation / Tart Cherry Juice
- Diaphragmatic Breathing (yoga)
- Therapeutic Massage
- Cryo Sauna



CORTISOL

- The Body's Stress Hormone
- Steroid Hormone (from the Adrenal Gland)
- Public Enemy #1 (Elevated Cortisol levels)
 - Interfere with learning/memory
 - Lowers immune function/bone density
 - Increases in weight gain, Cholesterol, BP, Heart disease
- How to Lower Cortisol levels
 - Proper sleep, Exercise, Relaxation, Communication, have fun, Pets, Identify stressors, UNPLUG, BREATH
 - Herbs that lower Cortisol: Ginseng, Basil (holy), Astragalus Root, Licorice Root



BRAIN HEALTH / MINDFULNESS

- Breath (diaphragmatic, belly)
- Meditation (apps)
- Brain Health Apps (Roberto, Luminosity)
- Motivational/Inspirational Quotes (day, week)
- **Unplug, Digital Detox**
- Delegate, Ask for Help



IN SUMMARY

- Arm Care is and “all the time” activity
- Posture/Scap/RTC/Core/Glutes/Legs/Rotation/T.P
- STRENGTH TRAIN!
- Recovery Methods: know how you recover
- Wellness: Take Control of it!
- Eye on VOLUME
- Listen to your body
- Take ownership in the care of your shoulder/elbow/arm
- *We are what we repeatedly do. Excellence is not an act, but a habit.*



THANK YOU!

- Visit www.ahn.org/sportsperformance
- Have questions? Reach out to us:
 - Frank.velasquez@ahn.org
 - sportsperformance@ahn.org

