

NCMIC

Relevant Rehab: Cervico-Thoracic Spine Functional Assessment & Rehab

Donald C. DeFabio, DC, DACRB, DACBSP, DABCO
Chiropractic Orthopedics, Physical Rehab & Sports Physician
Team Physician Drew University Athletics
908-771-0220
www.DeFabioDifference.com



Disclosures

- Speaker NCMIC
- Relevant Rehab Seminars

NCMIC



Credentials

- NEHS, DC: private practice since 1985
- Board Certified Chiropractic Orthopedics, Rehab & Sports
 - Plus: ART, Graston, MUA, SFMA, CES, PES, FM
- 2023 ACA Rehab Council Doctor of the Year
- Former Chiropractic Doctor for Drew University & RU T&F
- Classifier IWAS 1996 -2017
- Relevant Rehab Seminars: The DeFabio Difference
- Chief of Chiropractic Services
 - DeFabio Spine & Sports Rehab, LLC
- 41+K subscribers on YouTube



Objectives

- Review and contrast static and dynamic postural assessment of the cervical & thoracic spine
- Understand the difference between a mobility vs. stability dysfunction
- Learn active care protocols for mobility and stability issues in the cervical and thoracic regions
- Treatment of chronic neck pain with active care
- Give you the tools and resources to begin tomorrow



Choosing the Right Exercises

- Requires an accurate diagnosis
- DD: Joint, muscle, tendon, ligament, capsule, nerve, disc, non-mechanical, referred
- Mobility vs. Stability issue



The Beginning

- History
- Physical
 - Ortho: Neuro: PE
 - Dynamic / Functional Assessment
- Labs
- Imaging

Establish a working diagnosis



Phases of Care in Rehab

- Acute
- Subacute
- Corrective / Rehabilitative
- Power / Speed



Acute CT Spine

➤ Goal:

- Pain Control
- Restore/Maintain ROM

➤ Procedures:

- Passive & Assisted ROM, Stretching
- ROM Activities, IASTM, Traction
- Low intensity cardio
- CMT as tolerated



Sub-Acute CT Spine

➤ Goal:

- Pain control & ROM
- Add active care as tolerated
- More gain w/o pain

➤ Procedures:

- CMT as tolerated
- IASTM w/ movement and provocation
- Postural correction exercises, Janda's UC



Sub-Acute CT Spine

- Begin corrective exercises
- Passive, assisted and pain-free active activities
- Re-exam for postural involvement
 - Static: Dynamic
- Check mobility vs. stability
- Stay in a pain free range with exercises



Corrective Care CT Spine

- Goal:
 - Restore/maintain ROM
 - Balance strength
- Procedures:
 - CMT as tolerated
 - Soft tissue: functional movement patterns
 - Postural correction w/ ADL's
 - Power/Speed?



Posture



- Easily understood by patients
- Good transition between acute and corrective care
- Direct the patient's attention to how they look & move: not how they feel
- Establishes a “non-pain” treatment plan
- Fits into any practice style
- 90% of patients need it

Posture is *Dynamic*

- Ability to maintain proper posture – *mechanics* - with motion
- Functional assessment
- Treatment involves DDX between stability and mobility issues



Mobility or Stability Imbalance?

- Mobility imbalances:
 - ROM is consistent WB & NWB / active and passive
- Stability imbalances:
 - ROM increases NWB both active and passive
 - May be a combination of both
 - **Address mobility imbalances first**



Cervical Mobility vs. Stability

- Active ROM standing
 - Rotation
 - Flexion
 - Rotation with flexion @ mid clavicle
- Active ROM supine
 - Rotation, Flexion, Rotation w/ flexion
- Passive ROM supine
 - Rotation, Flexion, Rotation with flexion



Cervical Mobility vs. Stability



Cervical Mobility Correction

- **Adjust** Hypomobile segments
- Foam Roll Dorsals
- Soft tissue:
 - IASTM
 - Manual release
- Contract – relax – stretch
 - Regional & segmental



Cervical Spine Mobility Corrections



Cervical Stability Correction

- Retrain the scapular depressors and retractors- mid/lwr trap, rhomb, serr ant
 - Supine
 - Supine with active cervical ROM
- Progress to sitting, standing

Engage stabilizers first to create an increase in active ROM

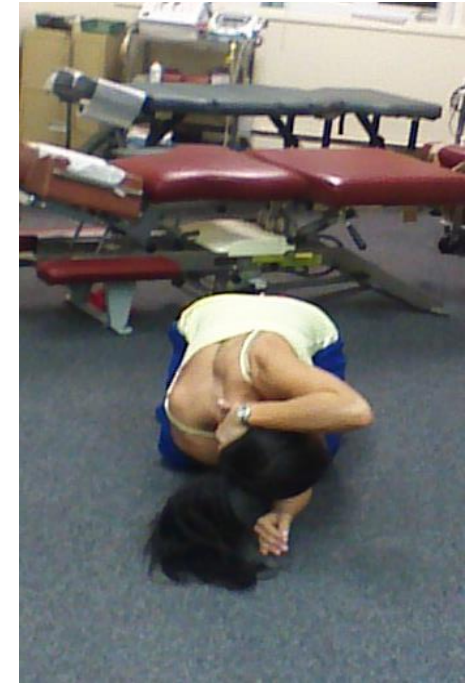


Thoracic Mobility vs. Stability

- Assess standing active ROM bilaterally
- Compare to segmental thoracic ROM
 - Standing w/ 90° lumbar flexion
 - Kneeling
- Address mobility imbalances first



Thoracic Segmental Motion



Case Study



Thoracic Spine Mobility Correction

- Duplicate assessment as therapeutic activity
- CMT
- Foam Roller
- IASTM with motion
- Band exercises w/ rotation



Dynamic Mobilizations

- Contract relax with thoracic rotation, seated
 - Foam Roll Lats
 - Massage Stick
 - Graston*
 - FAKTR-PM*
 - W/ US, TECAR, Laser
- *Great techniques to add to your skill set*



Shoulder Movement Assessment

- Flexion 180° w/out increase in lordosis
- Lower rib cage remains quiet
- Inferior angle of the scapulae reaches midline
- Standing vs. Supine



Shoulder Dynamic Movement Assessment



- Arms fall forward:
Tightness: Lats, Pec's, Coracobr, Teres Maj
Weakness: Mid/Lwr Trap, Rhom, Post Delt




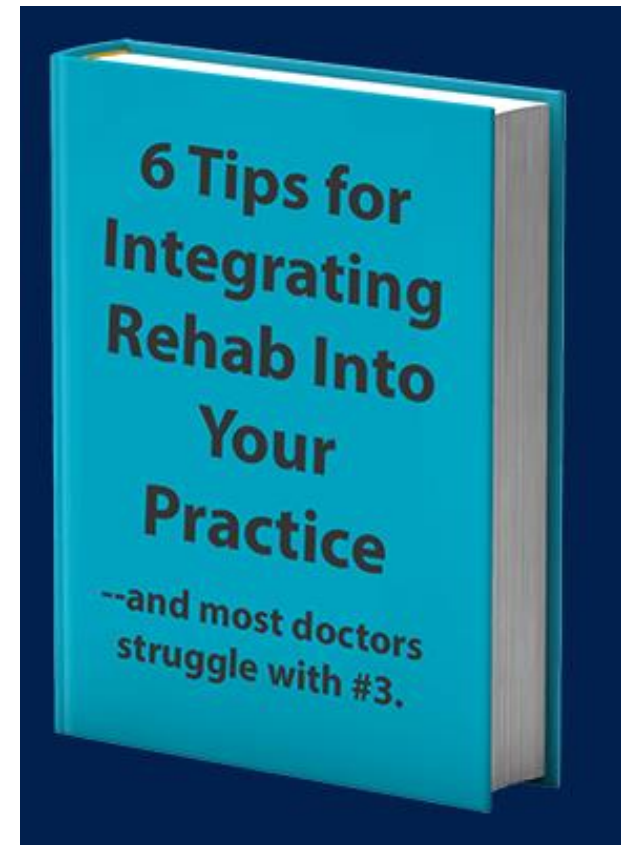
Ready to Rehab

- Cervical, thoracic, shoulder mobility issues
- Any stability issues?
- Static postural imbalances
- Recurring structures? Start here!
- No recurring structures? Start w/ static posture



TAKE A BREAK!

- Don DeFabio, DC, DACBSP, DACRB, DABCO
- Rehab Tips & Patient Tear Sheets
- *GOOGLE*: DeFabio Difference & leave a review
 - Relevant Rehab Seminars
 - CCSP to Rehab Diplomate Program
 - One on One Consulting
- DeFabioDifference.com 
 - Download Free e-book!



Cervical & Thoracic Spine TECH NECK!

- Affects just about everyone
- Easy to teach & progress
- Treatment requires adjustments

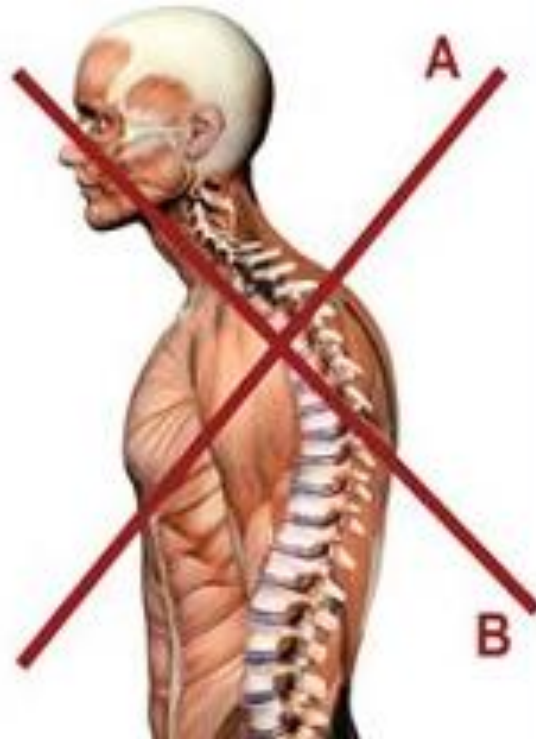


Upper Crossed Distortion

OVERACTIVE:

Tight: Shortened **A**

- Pectoralis Major & Minor
- Upper Trapezius
- Levator Scapulae
- Teres Major
- Anterior Deltoid
- Subscapularis
- SCM
- Rectus Capitus
- Scalenes



UNDERACTIVE:

Weak: Lengthened **B**

- Mid & Lower Trapezius
- Rhomboids
- Serratus Anterior
- Teres Minor
- Posterior Deltoid
- Infraspinatus
- Longus Coli/capitus



Upper Crossed Rehab

1. Address Mobility

- Stretch within a pain free range the overactive muscles
- Contract - Relax - Stretch
 - Regional & segmental
- Foam Roll Thoracic Spine
- Adjust occiput and dorsal spine



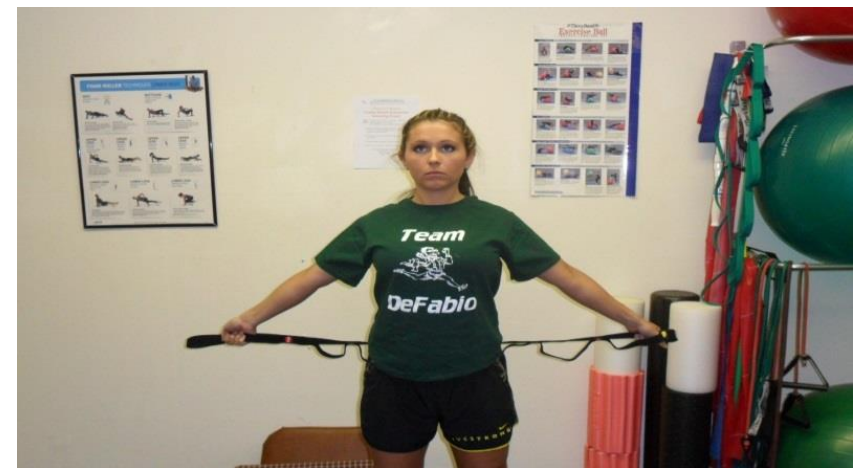
Lengthening/ROM

- Chest stretches
- Anchor stretches
 - Scalenes, levator scapulae, upper traps
- Rectus Capitus
- 1st rib mobilization
- Foam Roll dorsals
- Rib cage mobilizations:
 - Myofascial release



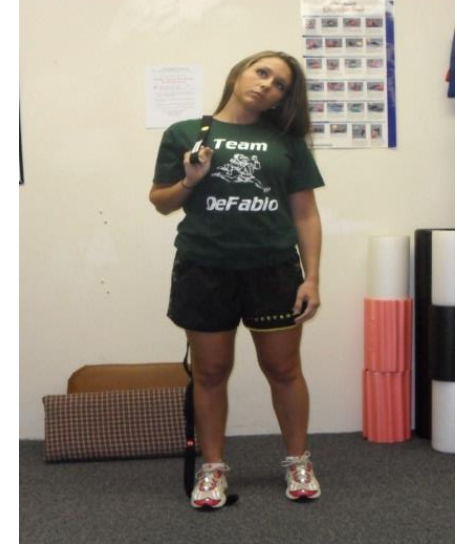
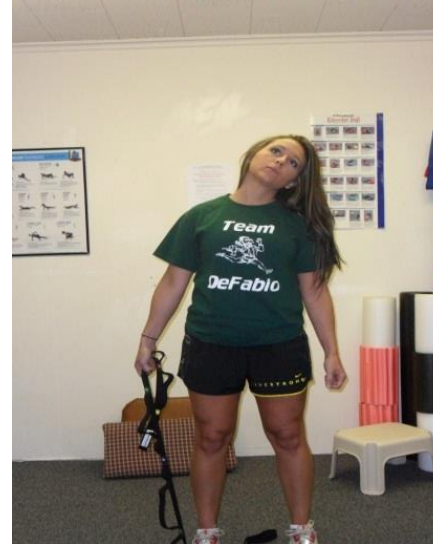
Chest Stretches

- Pec Minor:
Arms @ 90 degrees
- Pec Major:
Keep hands below
shoulder height
- Hold 30 sec: 3X



Anchor Stretches

- Directly lateral: Upper Traps
- Rotation & flexion: levator scapulae
- Lateral Flexion with Extension: Ant scalene
- Lateral Flexion with Flexion: Post Scalene
- Gain authority with opposite hand



Rectus Capitus

1. Cervical Retraction



2. Cervical Flexion



Contract-Relax-Stretch

- Many variations
- Reciprocal Inhibition at work
- 3-5 second hold, follow with stretch for 8-10 seconds, 3-5 reps
- Can be in functional movement patterns
- Can be ballistic stretch
- Perfect with Stretch Strap



Post Isometric Relaxation



Foam Roll Dorsals

- With the appropriate cover, roll over thoracic spine
- Progress to segmental extension
- Increase to firmer cover to none
- Add rotation



Dynamic Mobilizations

- Contract/relax/stretch with thoracic rotation, seated
- Foam Roll Lats
- Massage Stick
- Graston*
- FAKTR*

Great techniques to add to your skill set



Massage Stick

- Lengthens tissue
- More superficial
- Easy to use
- Portable



First Rib Mobilization



- Lateral flexion to the side being mobilized
- Traction down on first rib with strap
- Lateral flexion to opposite side



Upper Crossed Rehab

2. Introduce Stability

- Teach patient how to engage scapular depressors and find neutral spine
- Attempt seated first, if not successful go supine
- Adjust thoracic spine, C1-Occ
- Continue stretches for overactive muscles
- Goal is 3 sets of 15-20
- Tempo is 2-2-4, eccentric





Brugger Band Phasic Exercises for Upper Body

Begin with a long (2.5 meter) band wrapped on each hand with palm open. Perform the following movements against the resistance of the band with both hands: Palms up, Wrists Back, Rotate hands out, keeping elbows in and pulling the shoulder blades back and down, Straighten elbows, Pull arms back, Pinch between shoulders. Slowly return in exactly the reverse order. Returning to ready position should take NO LESS than 4 seconds.

____ Sets ____ Reps ____ Hold

*May be done standing.

*Be sure to pull the wing bones **back and down**.

4 Step Rows:

Sit on mat with legs extended forward. Securely wrap the middle of the band around your feet to prevent it from slipping. If in a chair, wrap the band around a secure point such as a bed post. Grasp the ends of the bands with your arms extended in front of you. Elevate the chest and pinch/depress the shoulder blades, Pull the ends of the band toward your lower ribs. Hold! Slowly return to arms straight, Release the shoulder pinch. Returning to ready position should take NO LESS than 4 seconds. ____ Sets ____ Reps ____ Hold

TIP: Always pull the shoulders back and down first! Keep your chest up.

Seated Row Variation: Securely attach the middle of a band at waist height. Grasp the ends of the bands and pull the bands toward your hips. Hold and slowly return. Keep your back straight. VARIATION: Perform on chair or bench. Returning to ready position should take NO LESS than 4 seconds. ____ Sets ____ Reps ____ Hold



Cervical Retractions:

Place the middle of the band around the back of your head. Grasp the ends of the band in front of your head. Keep your neck in a neutral position with the chin slightly tucked. Extend your elbows, stretching the band in front of you. Slowly return, and keep your neck stable. Returning to ready position should take NO LESS than 4 seconds. ____ Sets ____ Reps ____ Hold

Seated Chest Stretch

Extend your arms behind you with elbows straight. Interlock your fingers if possible. Gently lift your elbows upward. You should feel a stretch in your chest. Returning to ready position should take NO LESS than 4 seconds. ____ Sets

Reps ____ Hold



Upper Crossed Strengthening

www.TheraBand-Academy.com



Brugger Band Phasic Exercises for Upper Body: Begin with a long (2.5 meter) band wrapped on each hand with palm open. Perform the following movements against the resistance of the band with both hands: 1. Thumb and finger abduction and extension 2. Wrist Extension 3. Forearm Supination 4. Shoulder external rotation and Elbow Extension 5. Shoulder Abduction and Extension 6. Scapular retraction. Slowly return in exactly the reverse order. Repeat 2 to 3 times. Maintain an upright posture with neutral neck and back.

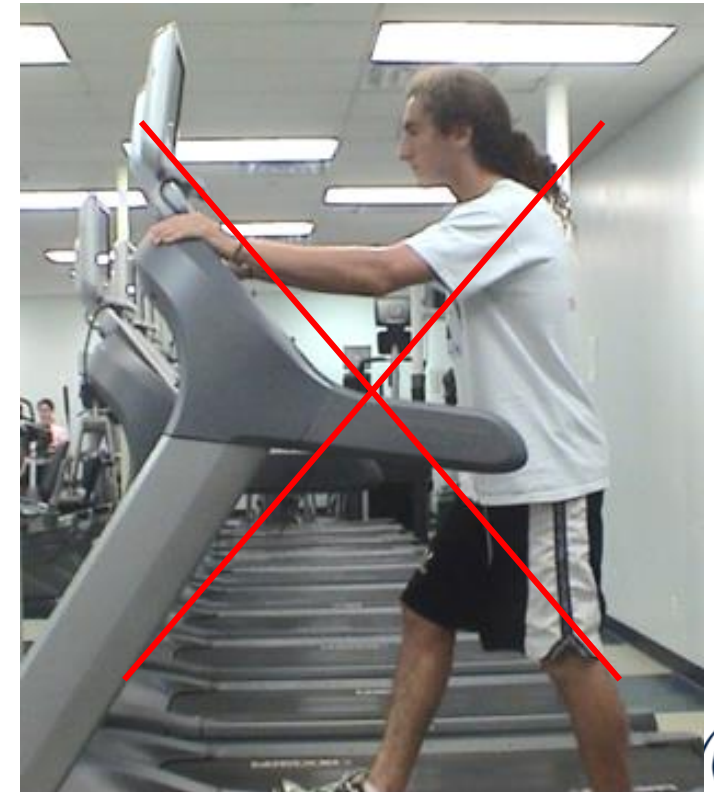
Upper Crossed Rehab

3. Strength & Integration

- Maintain neutral spine breathing, sitting, exercising, with ADL's
- In the gym with all exercises



www.DeFabioDifference.com



Top Tech Neck Exercises



Upper Crossed Integrative Exercises

- Hyperextensions to Y-T-A's
- Squat to Row
- Table top to flys
- Bruggers to curls
- Wall Angels w/ Band



Upper Crossed Review

Stretching

- Chest
- Upper Traps
- Anterior Scalene
- Levator Scapulae
- Anterior Deltoid
- Teres Major

Strengthening

- Lower trapezius isolation
- Wall Angels
- Bruggers
 - With and w/o band
- 4 Step Rows
- Cervical Retraction
- Y-T- A's
- Core Stability

Chronic Neck Pain

➤ Goals:

- Restore / maintain ROM
- Decrease pain

➤ Protocols:

- CMT as needed
- Myofascial release as tolerated
- Assess & address dynamic and static postural imbalances



Just ONE Neck Exercise

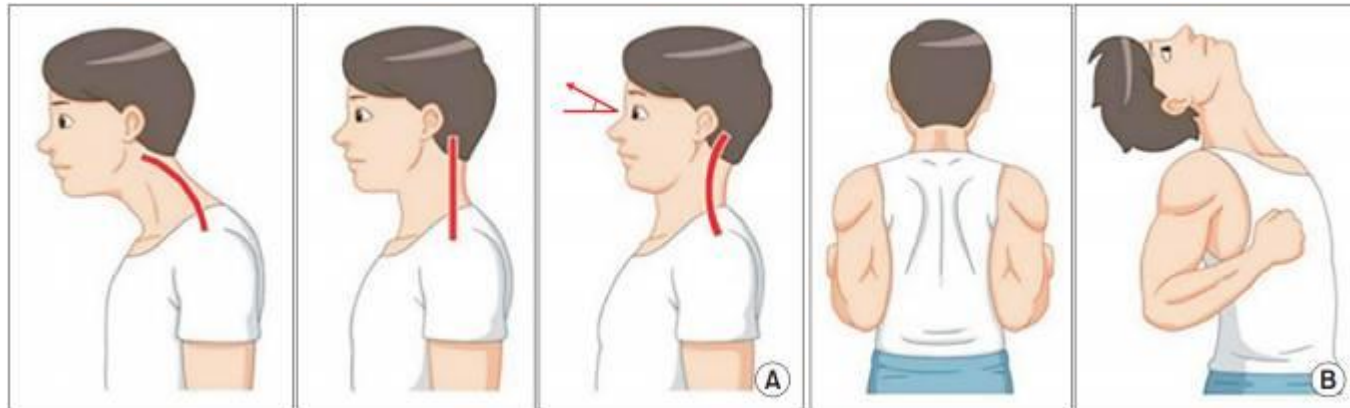
- Andersen: 3 groups, 10 week program: control, 2 min exercise 5X/wk, 12 min exercise 5X/wk
- Sole exercise: standing lateral raise in scaption to 90° abduction.
- Control: no change
- Both exercise groups: significant pain reduction

Andersen LL, et al. Effectiveness of small daily amounts of progressive resistance training for frequent neck/shoulder pain: Randomised controlled trial. *Pain*. 2011 Feb;152(2):440-6.



Cervical Hypolordosis

- Stretch SCM, strap muscles
- Evaluate upper trap tightness
- Passive cervical extension
- Strengthen scapular depressors/retractors



Lee MY, et al, Efficacy of Modified Cervical and Shoulder Retraction Exercise in Patients With Loss of Cervical Lordosis and Neck Pain. *Ann Rehabil Med.* 2020;44(3):210-217



Thoracic Kyphosis

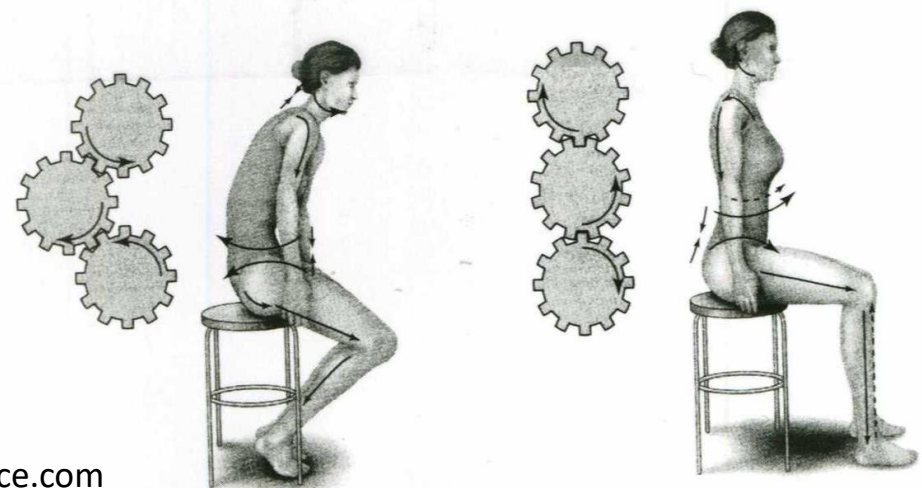


- DDX
- Janda Upper Crossed
- Rounded shoulders
- True kyphosis
- Anterior head carriage

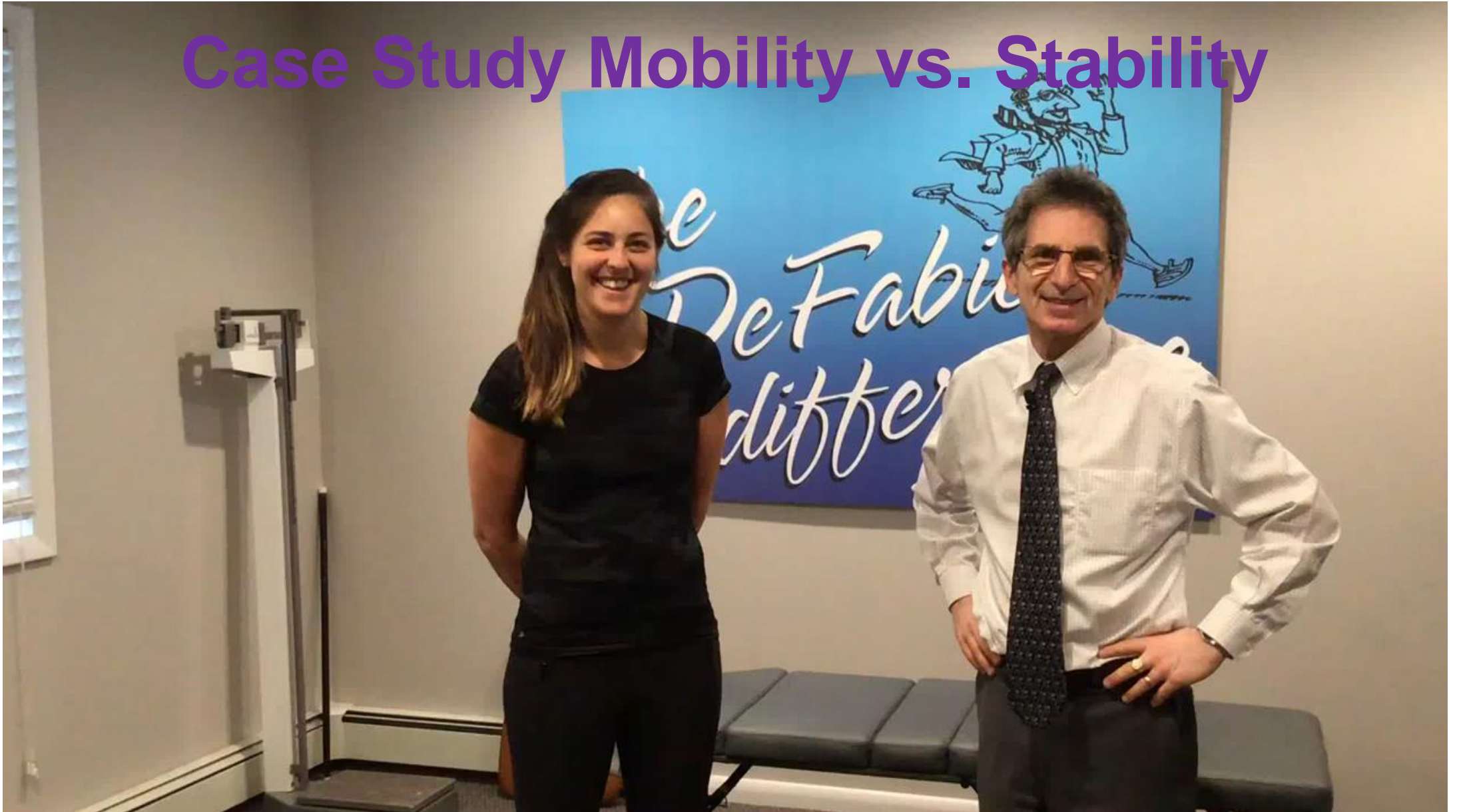


Applications Outside the office

- Reset your posture throughout the day
- Do all exercises in proper posture
 - Treadmill, elliptical, free weights
- Upper Crossed Postural re-education requires a neutral lumbar spine. Patients who sit all day may need lumbar support pillows



Case Study Mobility vs. Stability



Monday Morning

- Discuss upper crossed postural imbalances with patients
- Check for mobility vs. stability issues in the neck
- Stretch upper trap, pecs, lats
- Teach Brugger's Exercises and scapular repositioning



Additional Resources

- @NCMIC
- Donald C. DeFabio, DC, DACRB, DACBSP, DABCO
 - Relevant Rehab Seminars
 - *CCSP to Diplomate Review Course*
 - www.DeFabioDifference.com
 - One on One Consulting
- Thera-Band: www.TheraBand-Academy.com
- YouTube: @DrDeFabio



Thank You!



Donald C. DeFabio, DC, DACBSP, DACRB, DABCO

www.DeFabioDifference.com

DeFabioChiropractic@gmail.com

908-771-0220

