Relevant Rehab:
A Multimodal Approach for Common Postural Distortions

Donald C. DeFabio, DC, DACBSP, DACRB, DABCO
Relevant Rehab Seminars
908-771-0220
www.DeFabioDifference.com

Disclosures

- Speaker, NCMIC
- Speaker, Performance Health Academy
- Instructor Performance Health Rehab Certificate Course
- Speaker, Relevant Rehab courses
- Consultant, Nexol Pharma

Credentials

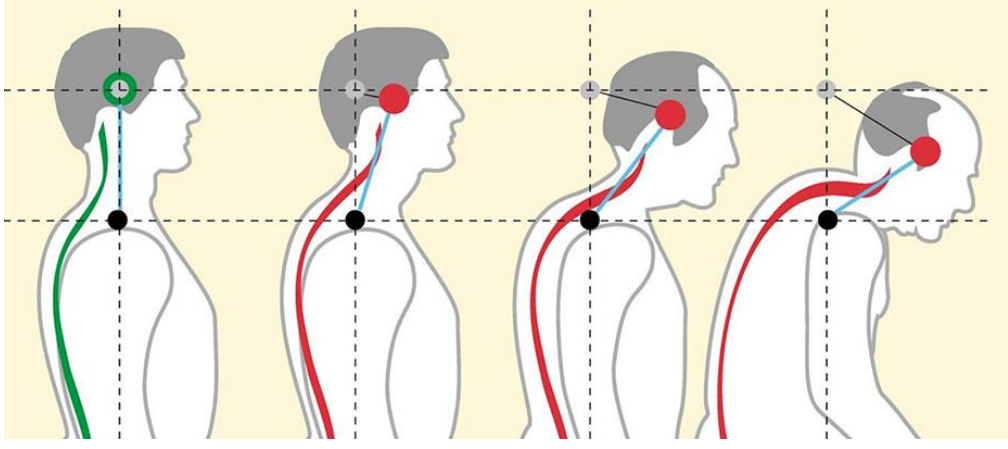
- NYCC Graduate: private practice since 1985
- Board Certified Chiropractic Orthopedics, Rehab & Sports
  - Plus: ART, Graston, MUA, SFMA, CES, PES, FM
- Former Team Chiropractic Doctor for Drew University & RU Track and Field
- Classifier IWAS 1996 -2017
- Relevant Rehab Seminars: The DeFabio Difference
- Chief of Chiropractic Services
  - DeFabio Spine & Sports Rehab, LLC
- 32K subscribers on You Tube

Disclaimer

- Be sure to perform a full examination, consultation and ROS prior to initiating care.
- This course will involve each participant to be actively involved in examination, therapeutic, soft tissue and adjusting procedures. By registering for this course each participant acknowledges this and gives their consent to be examined, treated, and adjusted by the instructors and their fellow participants. As this is a teaching course, each participant acknowledges that their fellow participant may be inexperienced in these procedures.
- If any participant has any condition, concern, or reason that may counter-indicate or preclude them from participation in any portion of the course, they must make that known to the instructors and participants before proceeding.
- While the instructor/s will do their best to ensure safety, each participant agrees to hold harmless any and all fellow participants and instructors for any injury, damage, or consequence that occurs during this hands-on course.

Part 1:

Cervico-thoracic Postural Distortions assessment and Correction



NCMIC

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Objectives

- Introduce the 4 Pillars of Chiropractic Postural Rehab
- Distinguish mobility vs. stability in the rehab continuum for postural correction
- Introduce the concept of Dynamic Posture
- Understand corrective exercise principles for the acute through chronic & RTP phases of care
- Review Janda's upper Crossed Distortion
- Learn KT taping techniques for these conditions
- Demonstrate application via case studies
- Give you the tools and resources to begin tomorrow

Caveats

- Rehab is not performance enhancement
  - More gain w/o pain
- Phases of care:
  - Acute: Sub-acute: Corrective: Performance Enhancement
- Introduce concepts of posture/ function/ movement in the acute phase
- Transition to corrective care once pain free

Pillars of Chiropractic Rehab

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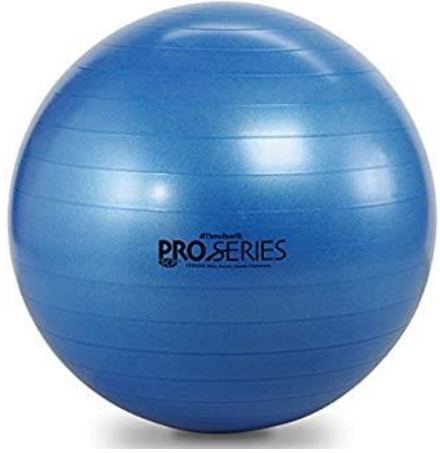
Required Equipment



Postural Rehab Suite Supplies

- Foam Roller – one full and one ½
  - Roller covers
- Massage Stick
- Stretch Out Strap
- Pre-cut CLX
  - Red, Green, Blue
- Physio-Ball
- Stability Disc
- Balance Board

Choosing the Correct Protocols

- Identify the most significant pillar
- 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: ROS
  - Dynamic / Functional Assessment
- Labs
- Imaging

Establish a working diagnosis

Rehab Phases of Care

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

Active Care: Acute Principles

- Goal:
  - Pain Control
  - Restore/Maintain ROM
- Procedures:
  - Passive & Assisted ROM, Stretching
  - ROM Activities, IASTM, Traction
  - Low intensity cardio
  - CMT as tolerated

Sub-Acute Principles

- Goal:
  - Pain control & ROM
  - Add active care: Pain free
  - More gain w/o pain
- Procedures:
  - CMT as tolerated
  - IASTM w/ movement and provocation
  - Postural correction exercises, Janda's UC

Sub-Acute Principles Con't

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

Corrective Care Principles

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

RTP Principles

- Goal:
  - Strength: flexibility: endurance symmetry
  - Core & kinetic chain stability
- Procedures:
  - CMT as indicated
  - Soft tissue: sport specific movement patterns
  - Power
  - Speed

RTP

- Clinical Skill
- Balanced Joint Kinematics
- Proximal Stability and Distal Mobility
- Soft Tissue Integrity
- Neuromuscular control
- Neurosensory Modulation
- Psychological Readiness

Let’s Talk Posture

- Patient’s get it!
- Good transition between acute and corrective care
- Direct the patient to *how they look* & move from *how they feel*
- Establishes a “non-pain” treatment plan
- Fits into any practice style
- 90% of patients need it

Static Posture

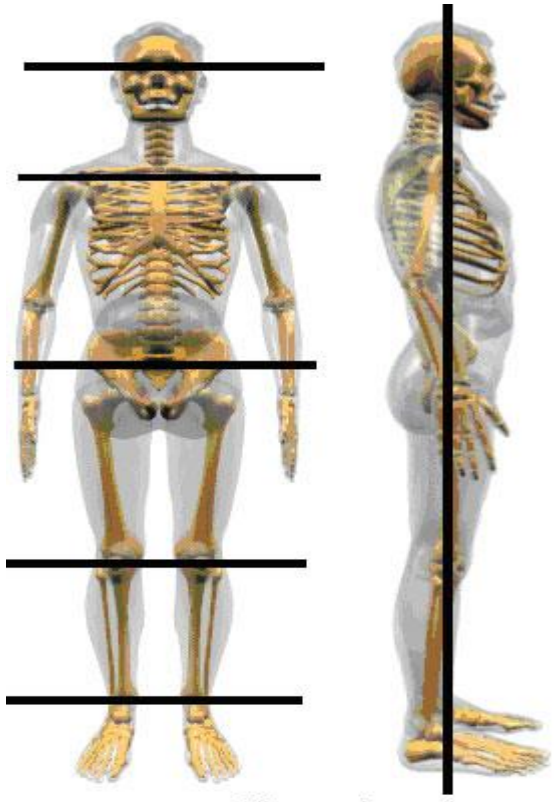
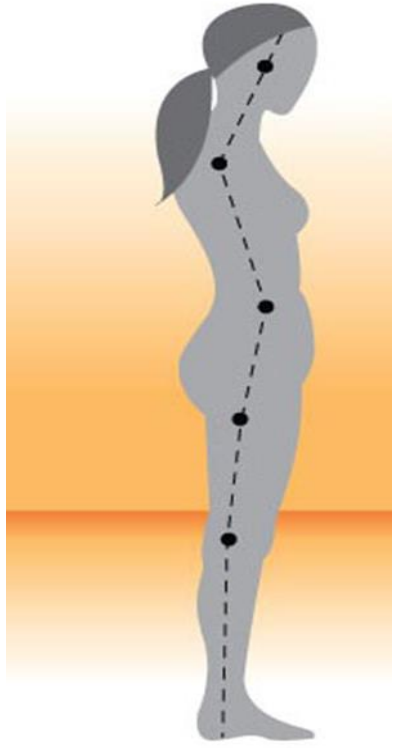
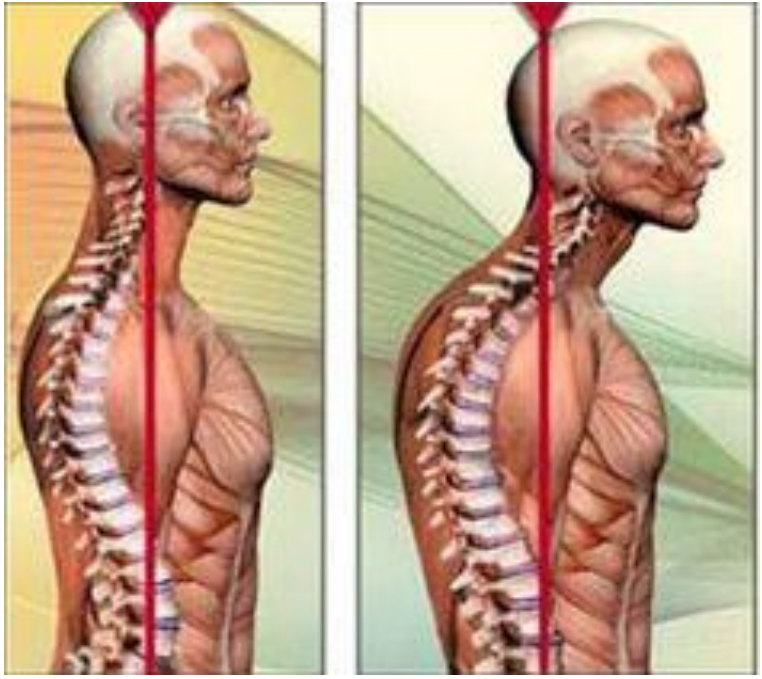


Figure 1

- Perform postural examination
- Include posture as part of your consult and ROF
- Reinforce on routine visits



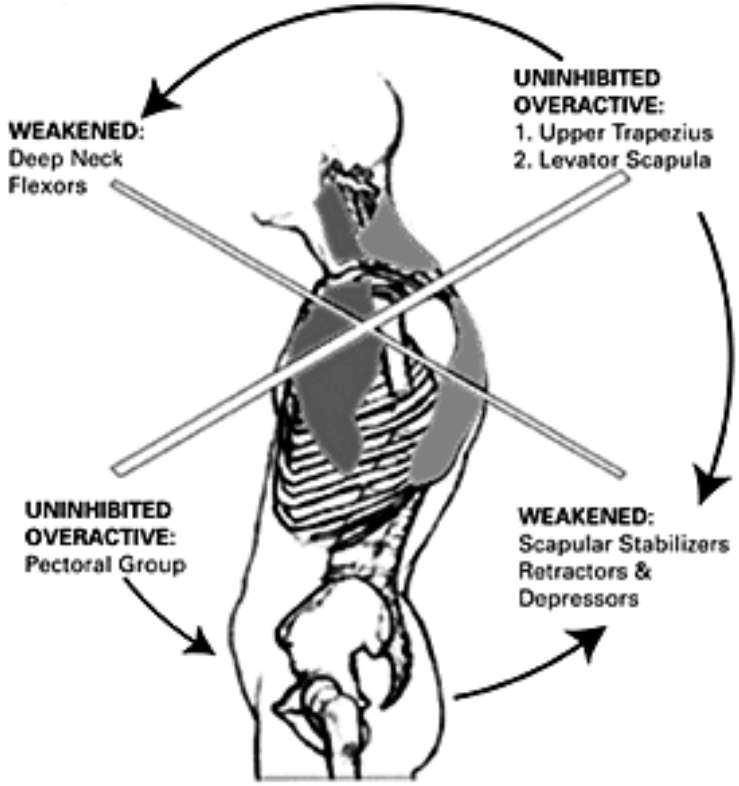
Janda's Upper Crossed Distortion
Tech Neck
Anterior Head Carriage



Cervical, Cervicobrachial & Thoracic Protocols

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

Janda's Upper Crossed Postural Distortion



Upper Crossed Distortion

OVERACTIVE:
Tight: Shortened

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

UNDERACTIVE:
Weak: Lengthened

- 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
- CMT: C1-Occ: Thoracic spine
- Foam Roll Thoracic Spine, Lat, Teres Maj

Lengthening/ROM

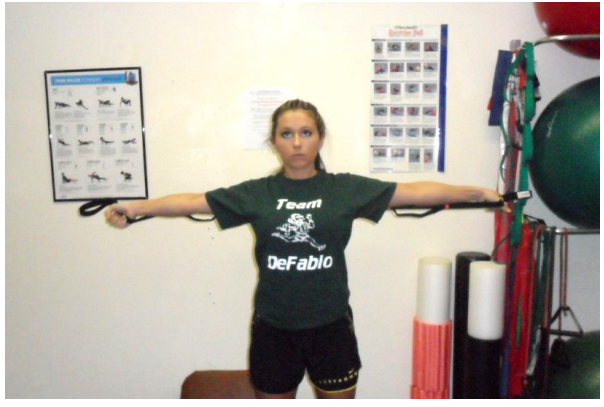
- Chest stretches
- Anchor stretches
  - Scalenes, levaor scapulae, upper traps
- Rectus Capitus
- 1st rib mobilization
- Rib & T- spine mobilization

Passive & Assisted Stretches

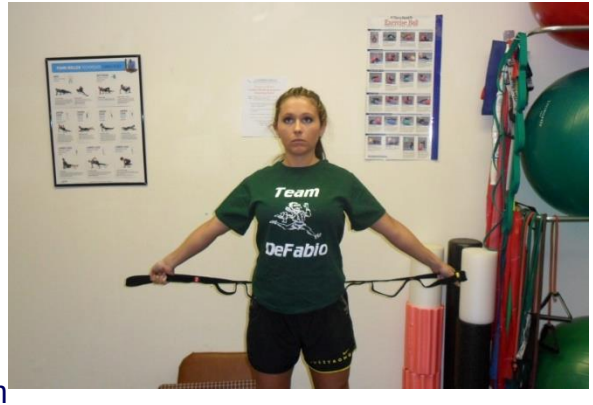
- 30 – 60 Second Hold, 3 reps
- No Pain
  - Good after icing in acute & sub-acute care
- Can teach patient for home: BID- Hourly

Chest Stretches

- Pec Minor: arms @ 90 degrees

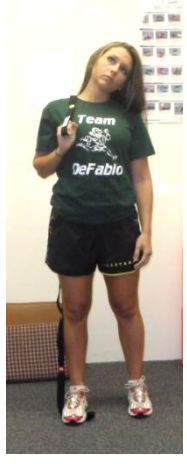


- Pec Major: keep hands below shoulders

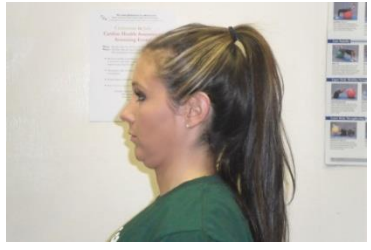


Anchor Stretches

- Directly lateral: Upper Traps
- Rotation & flexion: levator scapulae
- Lateral Flexion with Extension: Ant scalene
- Lateral Flexion with Flexion: Post Scalene
- Anchor from both hand & shoulder



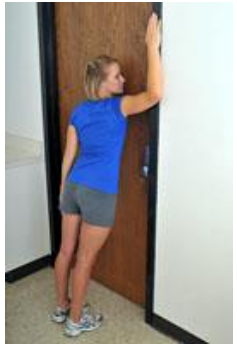
Rectus Capitus



- 1.Cervical Retraction
- 2. Cervical Flexion

www.Thera-BandAcademy.com

Exercise Ball Thoracic Extension Stretch: Kneel on floor with arms outstretched and hands on ball. Lean forward while pushing the ball forward. Lower trunk towards floor, stretching the upper back and chest.



Pectoralis Shoulder Door Stretch: Abduct your shoulder to 90 degrees. Place your hand on the door jamb and lean forward. Hold for 10-15 seconds and repeat 3-4 times.

Chest Stretch Sitting: 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.

Lab: Stretches

- Anchor
  - Upper Traps
  - Scalenes
  - Anterior, Middle, Posterior
  - Levator Scapulae
- Rectus Capitus
- Chest
  - Pec Major & Minor
- Anterior Deltoid
- Contract/ Relax

Thoracic Mobilization & Self Myofascial Release

- Foam Rollers are best
  - ~~Acute~~, Sub-acute and Rehabilitative Protocols
- Rolling finds the restricted area and staying on the area releases the tension
- Self Ischemic Compression
- Transition from soft covers to firmer

Foam Roller

- Once the sore points are found, stay on them for 30-40 seconds to release
- Best done before activity
- OK after activity

www.YouTube.com/drdefabio

Foam Roller Exercises

Advanced Foam Roller Exercises

Foam Roll Dorsals

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

Foam Roll Lat

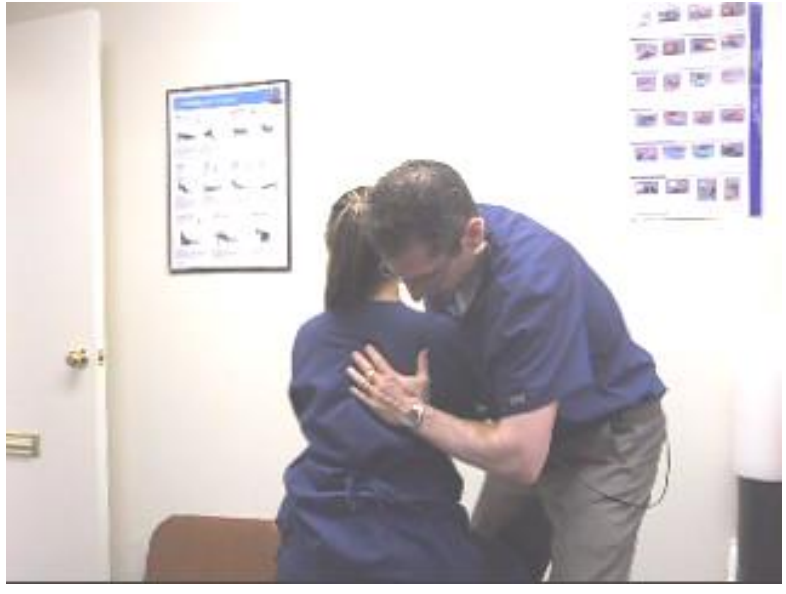
Massage Stick

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

Dynamic Mobilizations

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

Great techniques to add to your skill set



First Rib Mobilization

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

Lab: Mobilizations

- 1st Rib
- Thoracic Spine
  - Foam Roll
  - Foam Roll w/ Extension
  - Rotation
- Massage stick w/ motion
- Thoracic Rotation: Contract/Relax/ Stretch

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
- CMT as needed: thoracic spine, C1-Occ
- Continue stretches for overactive muscles
- Goal is 3 sets of 15-20
- Tempo is 2-2-4, eccentric

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 Extension3. Forearm Supination4. Shoulder external rotation and Elbow Extension5. Shoulder Abduction and Extension 6. Scapular retraction. Slowly return

Upper Crossed Strengthening

Thera-Band Shoulder Reverse Fly's: S
attach the middle of a long band or tubing in front of you at shoulder level. Grasp the other end of the band in front of you at shoulder level. Pull the bands outward and back. Hold & slowly return. TIP: Keep your back and neck straight, and avoid leaning over. VARIATION: Perform sitting

Thera-Band Shoulder Seated Row (in long sitting):
Sit on mat with legs extended forward. Securely wrap the middle of the band around your feet to prevent it from slipping. Grasp the ends of the bands with your arms extended in front of you. Pull the ends of the band toward your hips, bending your elbows. Hold and slowly return. TIP: Keep your knees and back straight.

Deep Cervical Flexors

Thera-Band Cervical Extension *Isometric:*
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.

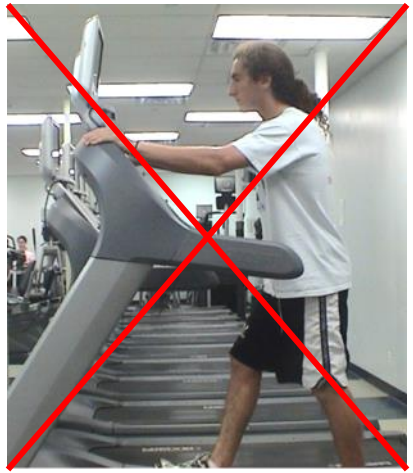
Can be used in sub-acute stage without the band to learn how to translate into extension with proper technique

Lab: Scapular Retraction & Depression

- Standing Brugger's
  - Supine, Seated, Standing
  - With & without elastic band
- Seated Rows, 4 step
- Horizontal Abduction
- Wall Angels
- Cervical Retraction - with & w/o band
  - Supine, seated, standing
  - Isometric, isotonic

Upper Crossed Rehab
3. Strength & Integration

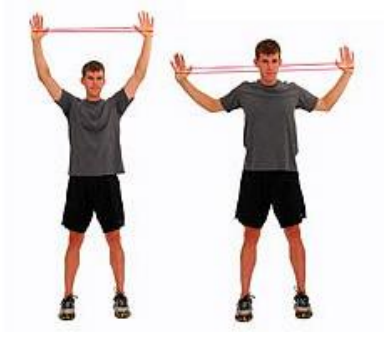
- Maintain neutral spine breathing, sitting, exercising, with ADL's
- In the gym with all exercises

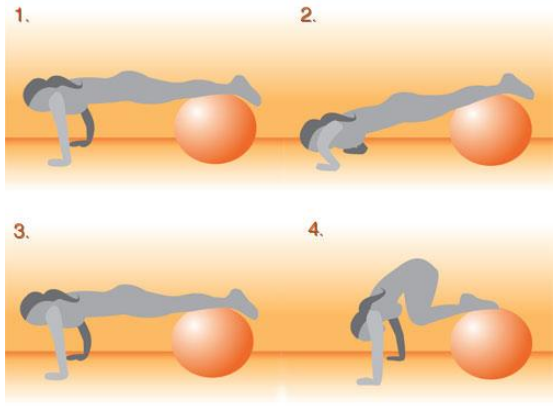


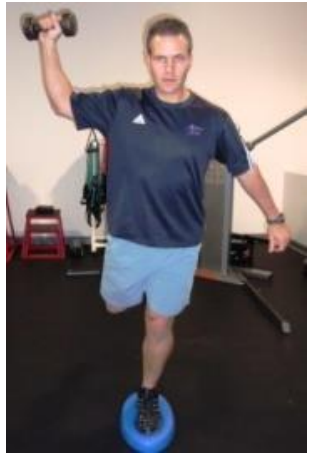
Upper Crossed Integrative Exercises

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

Upper Crossed
Strength, Power, Speed







Rehab Continuum: When to Progress?

- Current Exercises Working?

Continue along exercise progression

Check technique
Pain? Volume? Tempo?
Wrong Exercise?

Applications to ADL's

- Reset your posture throughout the day
- Do all exercises in corrective posture
  - Treadmill, elliptical, free weights
- Upper Crossed Postural re-education requires a neutral lumbar spine

Brugger's Cogwheel

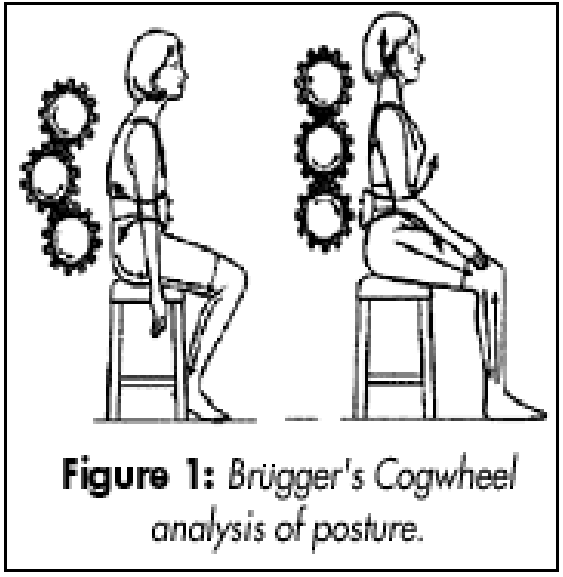


Figure 1: *Brügger's Cogwheel analysis of posture.*

- Patients who sit all day may need lumbar support

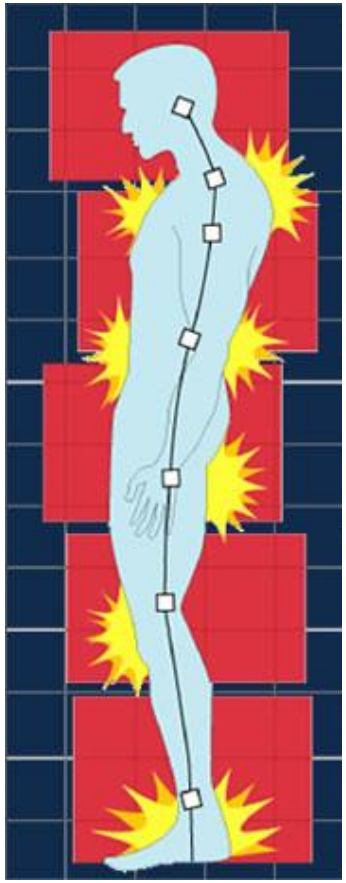
Essential Upper Crossed Points

- Be sure to engage the scapular retractors/ depressors BEFORE any exercise
- Upper traps must be relaxed
- Prevents synergistic dominance

www.Youtube.com/DrDeFabio

Posture Playlist

What is Your Favorite Color?



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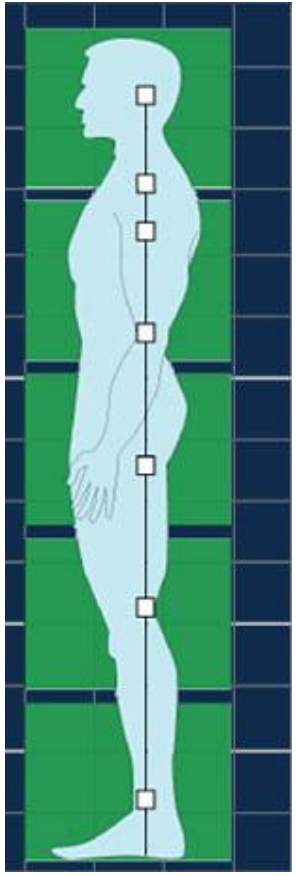
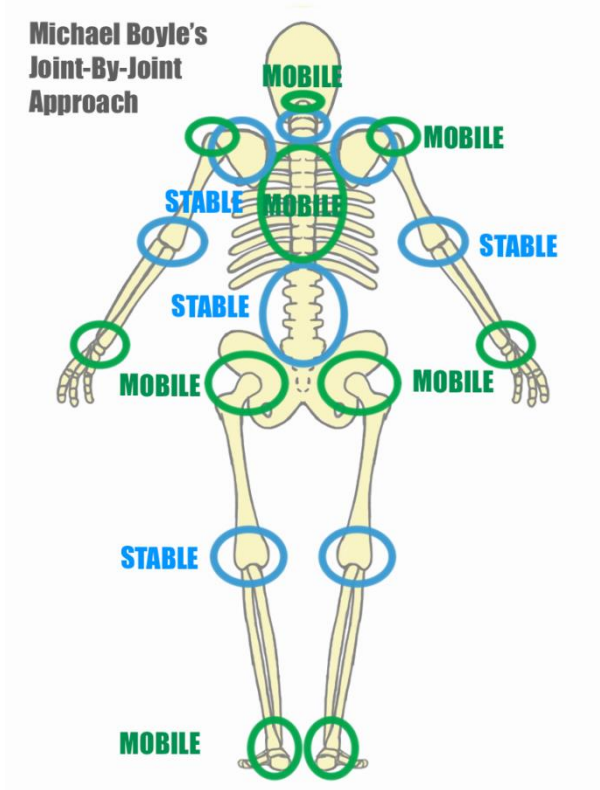


Posture is *Dynamic*

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

Mobility vs. Stability



Regional assessment to DDX the primary dysfunction

Mobility or Stability Imbalance?

- Mobility imbalances: ROM is consistent standing, supine / active and passive
- Stability imbalances: increased ROM non-weight bearing 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

LAB

- Mobility vs Stability cervical spine

Cervical Mobility Imbalances

- Adjust Hypomobile segments
- Foam Roll Thoracic Spine
- Soft tissue:
  - IASTM
  - Manual release
  - RPW / ESWT
- Contract – relax – stretch
  - Regional & segmental

Contract-Relax-Stretch

- Many variations
- Reciprocal Inhibition at work
- 3-8 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

Contract-Relax-Stretch

- Lateral Flexion: upper traps
- Rotation and flexion: levator scapulae
- Lateral flexion w/rotation: scalenes
- Supine
  - Doctor assisted
- Seated & Standing
  - Stretch strap for independent use

Lab: Contract- Relax Stretch

- Upper Traps: directly lateral
- Levator scapulae: Rotation w/ flexion
- Ant Scalene: Lateral Flexion w/ Extension
- Post Scalene: Lateral Flexion with Flexion

- Supine
- Seated

Cervical Stability Imbalances

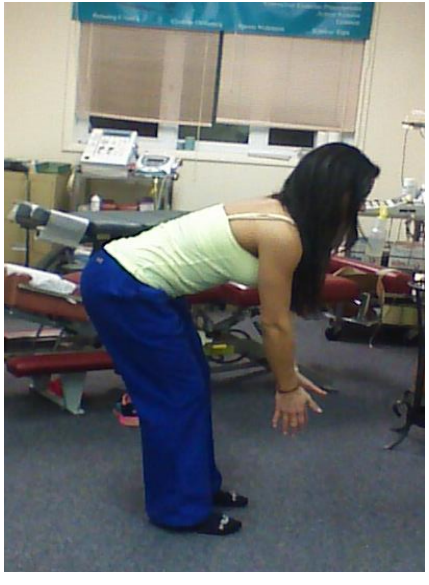
- Retrain the scapular depressors and retractors- mid/lwr trap, rhomb, serr ant
  - Supine
  - Supine with active cervical ROM
- Progress to sitting, standing

Engage stabilizers first!

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



Mobility Corrections:

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

Movement Assessments: The Rationale

- Determines areas of imbalance
- Easy and effective way to establish individualized corrective exercise protocols
- Tight areas need to be released and lengthened
- Weak muscles need to be strengthened

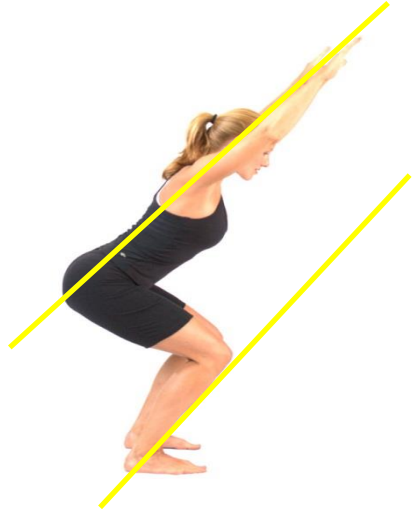
Arms Overhead

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

Arms Restricted Overhead

- Tightness: GH joint, T-Spine, Pect's, Lats, Ant Delt
- Weakness: Mid Lower traps, Serr Anterior, TA, Int/ext Obliques

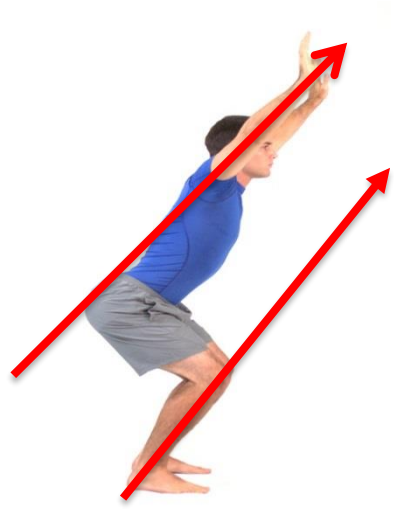
Overhead Squat Assessment
AP / Lateral View



National Academy of Sports Medicine

www.NASM.org

OSA : Lateral View



Tightness: GH joint, T-Spine, Pec's, Lat, Ant Delt, Coracobr, Teres Maj

Weakness: Mid/Lwr traps, Serr Ant, TA, Int/ext Obliques

Lab

- Thoracic Mobility vs. Stability
  - ROTATION:
    - Standing
    - In 90˚ Flexion
    - Kneeling
- Arms overhead
- Overhead Squat
- Impact on the cervical spine? Lumbar compensation?

Ready to Rehab

- Static postural imbalances
- Cervical, thoracic, shoulder mobility issues
  - Joint? Soft tissue?
- Stability issues
  - Motor control? Strength? Endurance?
- Recurring structures? Start here!
- No recurring structures? Start w/ static posture

Case 1

- 54 yo female, 64”, 138lbs with neck and shoulder pain “forever”. History of an MVA in her early 20’s. Aggravated by long hours at the PC and stress. Prior chiropractic care, 1X several years ago aggravated her condition. No comorbidities.

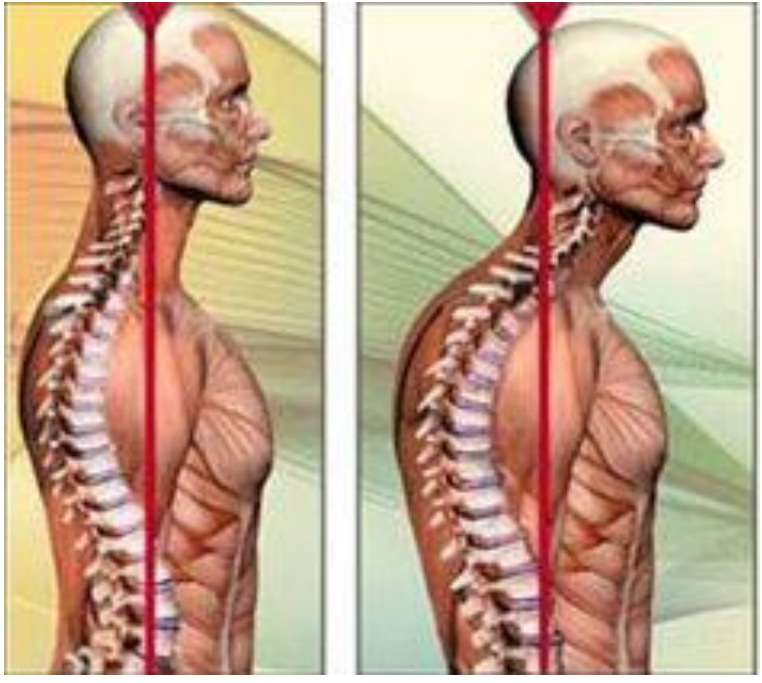
Case 1

- Exam: DTR, MTR, Sen all WNL. No long tract or nerve compression signs. No meds, not currently exercising.
- Rounded shoulders, anterior head carriage, tight upper traps
- Active c-ROM < Passive ROM in rotation, esp. to the left, and flexion
- Imaging? Labs?

Case 1

- Labs: None
- C spine radiographs:
  - Loss of the cervical curve, moderate+ degenerative changes at C4-5 and C5-6
- DX?
- RX?

Case 1:
Janda's Upper Crossed Distortion 2° to Lack of Stability



Thoracic Kyphosis

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

Thoracic Kyphosis

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

Thoracic Kyphosis: RX

- CMT
- Upper crossed protocols
- Corrective exercises based on DDx
- TSLO

Chronic Neck Pain

- Goals:
  - Restore / maintain ROM
  - Decrease pain
- Protocols:
  - CMT as needed
  - Myofascial release as tolerated
  - Assess & address dynamic and static postural imbalances

Chronic Neck Pain

- Dynamic Chiropractic July 2020

+ RELEVANT REHAB

READ ON MOBILE

Neck Pain and Whiplash: Exercise Progressions for WAD

DONALD C. DEFABIO, DC, DACRB, DACBSP, DABCO

The incidence of chronic neck pain and related symptoms following an acceleration / deceleration injury is well established in the literature: upwards of 40 percent. Headaches, neck pain, TMJ disorders, anxiety, depression, medication over use, neurological complaints and overall neck disability are all classified as whiplash-

and balance in the cervical

stability and improving

- https://www.dynamicchiropractic.com/digital/index.php?i=1266&Page=19

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: Randomized controlled trial. Pain. 2011 Feb;152(2):440-6.

Cervical Hypolordosis

- CMT
- Stretch SCM, strap muscles, deep cervical flexors
- Evaluate upper trap tightness
- Passive cervical extension
- Neuromuscular re-ed cervical extension
- Strengthen scapular depressors/retractors

John’s Case

- 67YO male, chronic neck, upper back pain w/stiffness. Esp left rotation. Prior Chiropractic care offered temp relief.
- HHX, burned as a young child on the left upper trap area with residual scarring.

John's Case

- Exam: no long tract , nerve compression or traction signs. + Shoulder depression L, Max Cerv Compression L, Cervical Distraction
- Significant loss of active cervical ROM all directions due to stiffness and pain localized to the L C5-T4 region.
- Radiographs: Increased T-kyphosis, increased cervical carrying angle, levo-scoliosis 18° C7-T4, mild cervical disc thinning with DJD.

John's Case

- Responding favorably to CMT, IASTM, EMS, home stretches. Pt interested in "what else can he do?"
- Re-exam:
  - Dynamic testing of cervical spine:
  - L rotation was a mobility issue
  - R rotation and flexion were stability issues
- Rx?

XactStretch Tape

- Acute:
  - Lymphatic fan
  - Neurosensory paraspinal w/ compression
- Postural correction
  - Upper crossed

Tape Tips

- Clean, dry skin
- Heat activates adhesive
- Let is set before exercise
- Round Corners?
- Know your anatomy, therapeutic goal and standardize

Lab KT Tape

- XactStretch tape cervical spine
- Postural correction
- Shoulder Girdle

Golf Case

- 47 yo male had sudden onset of left upper back pain at @T4 while playing golf. Had a “full” swing in the rough, 12th hole, felt some pain and continued to play. Went home, took a hot shower and the next day it progressed. Presented 2 days later. Takes chiropractic adjustments on a episodic/periodic basis while at home, mostly due to episodes of LBP.

Golf Case

- Exam: DTR's, Mtr, Sen WNL. No nerve compression or traction signs. Pain reproduced with Max Cerv Rotation L, Shoulder Depression R, Jackson's L, Distraction abates pain.
- Cervical ROM: pain at C5 with radiation to @T4 with extension, L lateral bending, L rotation. Other motions restricted and "pulling"
- Spasm: Moderate L levator scapulae, L upper trap, L rhomb min, B subocc. T3-T6 joint locking along with C1-Occ.

Golf Case

- Diagnostics?
- Dx:
- Rx:
- Home Care:

Let's Review

- Motion trumps stability
- No pain more gain w/ rehab progressions
- Address all 4 Pillars: begin with the most deficient
- Use posture to transition patients to a non-pain based treatment model
- Progress the patient through all phases of care
- Your diagnosis drives your treatment
- Re-training scapular retraction and depression w/ quiet upper traps is essential
- Corrective exercises are done w/ strong posture

Upper Crossed Review

Stretch

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

Strengthen

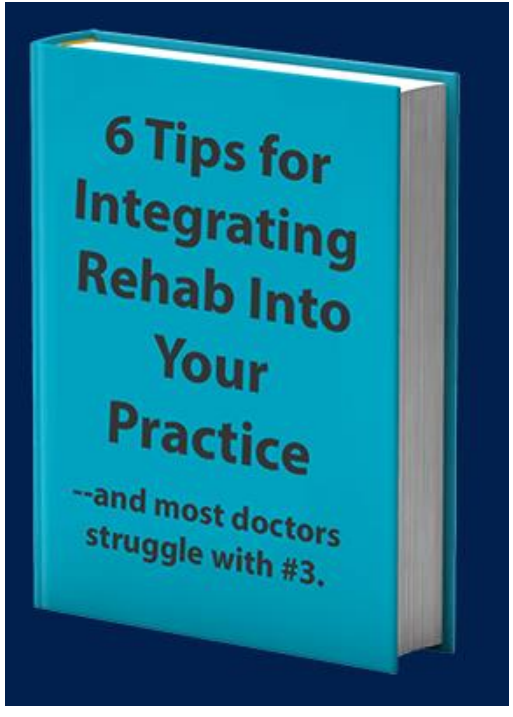
- *Mid & Lower Trapezius*
- *Rhomboids*
- *Serratus Anterior*
- *Longus Coli/capitus*
- Teres Minor
- Posterior Deltoid
- Infraspinatus

Monday Morning

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

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!



Relevant Rehab: Lumbopelvic Hip Postural Correction

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Donald C. DeFabio, DC, DACBSP, DABCO
Chiropractic Orthopedist & Sports Physician
Corrective Exercise Specialist
Team Chiropractic Doctor Drew University
908-771-0220
www.DeFabioChiropractic.com

Learning Objectives

- Review Relevant Anatomy of the LPHC
- Learn static and dynamic examination
- Discuss soft tissue, CMT for LPHC
- Home Care and exercises for the LPHC
- Discuss corrective exercises LPHC
- Case Studies

LPHC
Lumbo-Pelvic Hip Complex

- Junction box for energy transfer between the LE and UE
- Boyle classifies the hip as requiring mobility and the LS spine requiring stability
- Both must be addressed simultaneously

LPHC

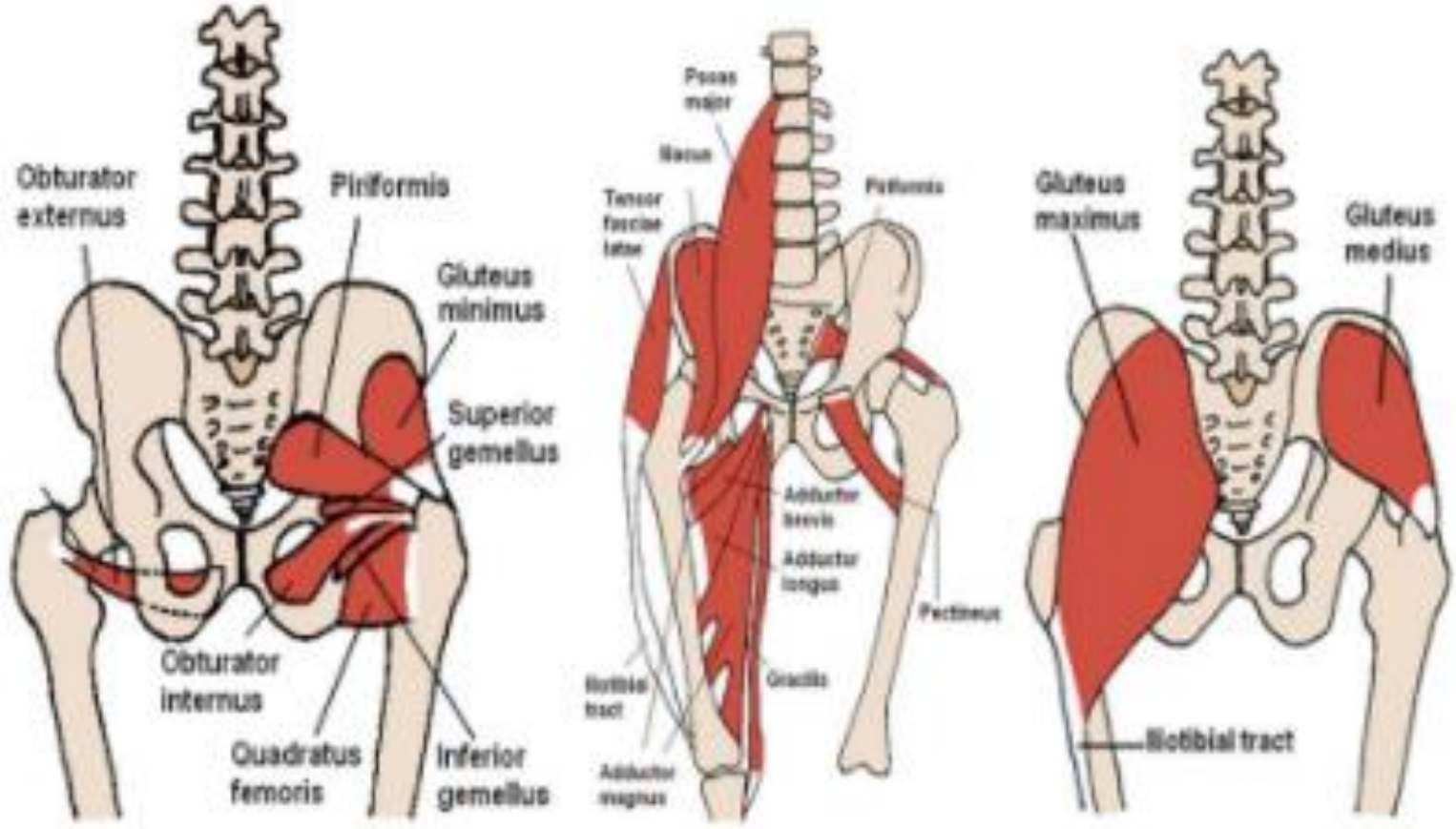
Core Stability

- TA
- Int Oblique
- Ext Oblique
- Diaphragm
- Pelvic Floor
- TL Fascia

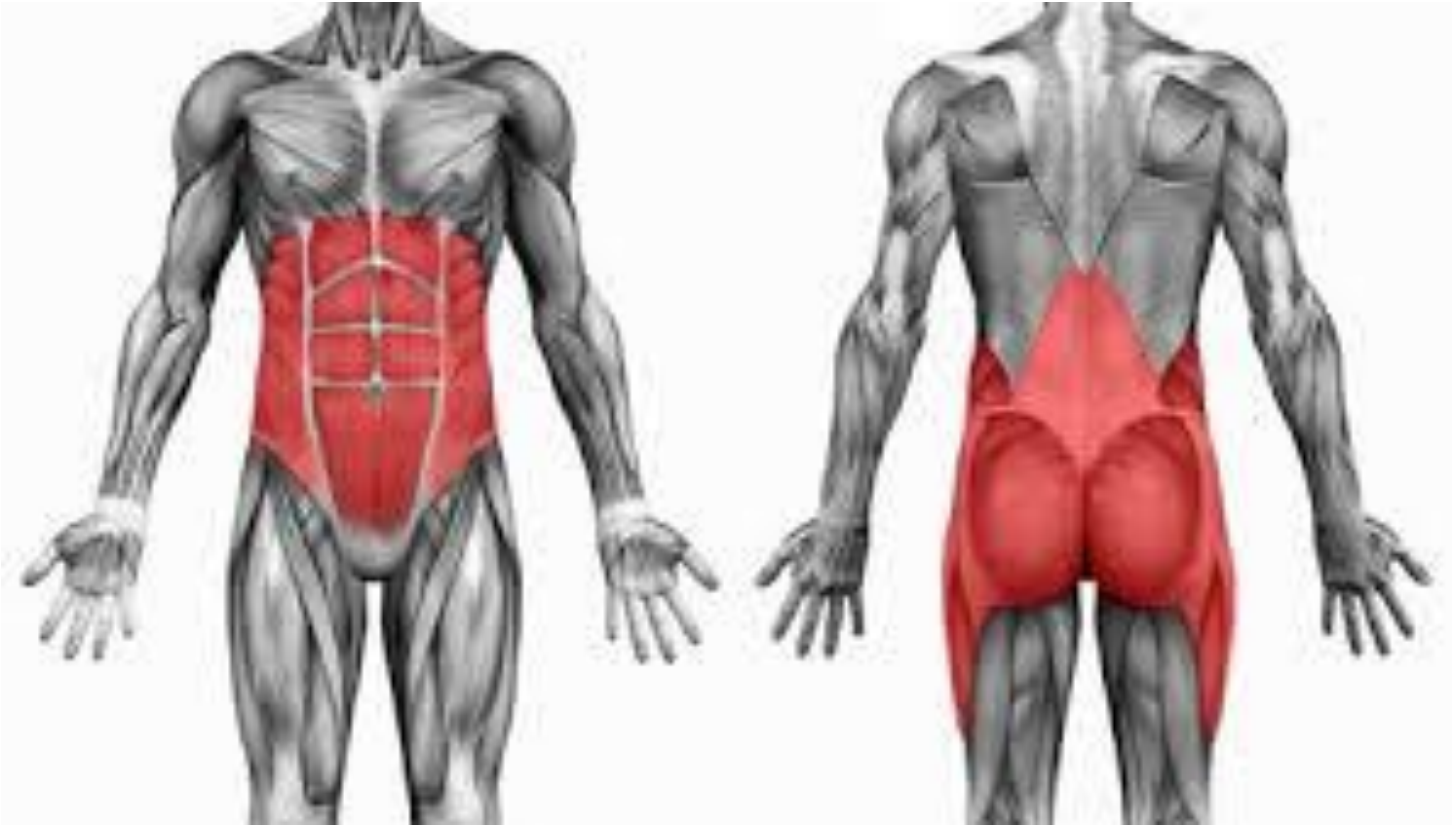
Hip/Pelvis Mobility

- SI & Hip joints
- Hip Flexors
- Hip Rotators
- Adductors

LPHC

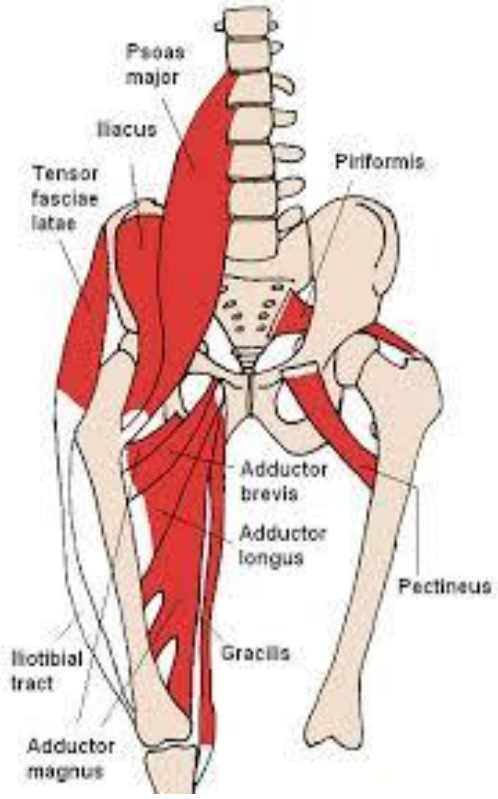


LPHC



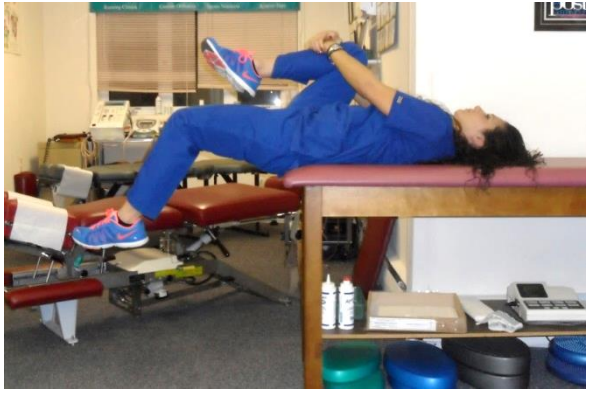
Hip & Pelvis

- Standard Examination
- Static Assessment
- Dynamic Assessment
- Movement Patterns



LPHC Examination

- ROM
- Nerve tension/compression
- Fabere /Laguerre /FADIR
- Gillet's
- Trendelenburg
- Movement Patterns
- Thomas
  - Rectus Femoris
  - Iliopsoas
  - ITB



Laslett

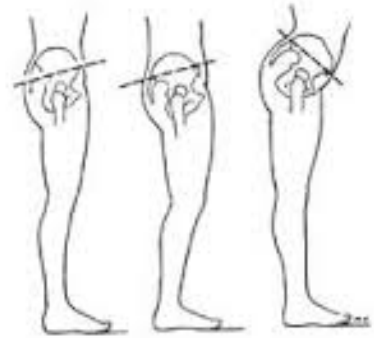
THE JOURNAL OF MANUAL & MANIPULATIVE THERAPY Vol16 NUM 3

1. Distraction
2. Gaenslen's
3. Thigh Thrust
4. Sacral Thrust
5. Compression

- <Three Positive tests: SIJ pain generator sensitivity 91% specificity 78%

Hip & Pelvis
Static – Postural Assessment

- Standing
  - – Rotation -AP
  - – Obliquity – Lat
- Supine / prone
  - – Femoral ante/retroversion



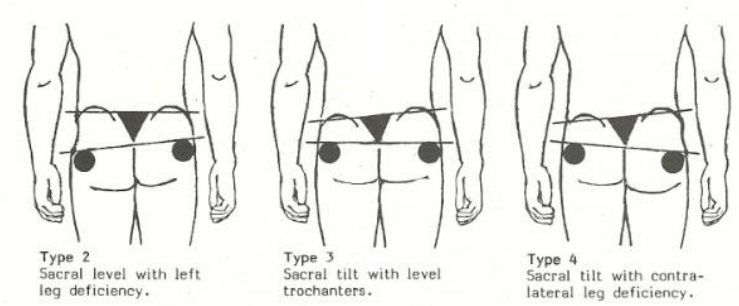
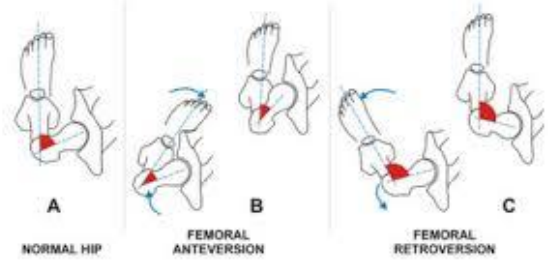
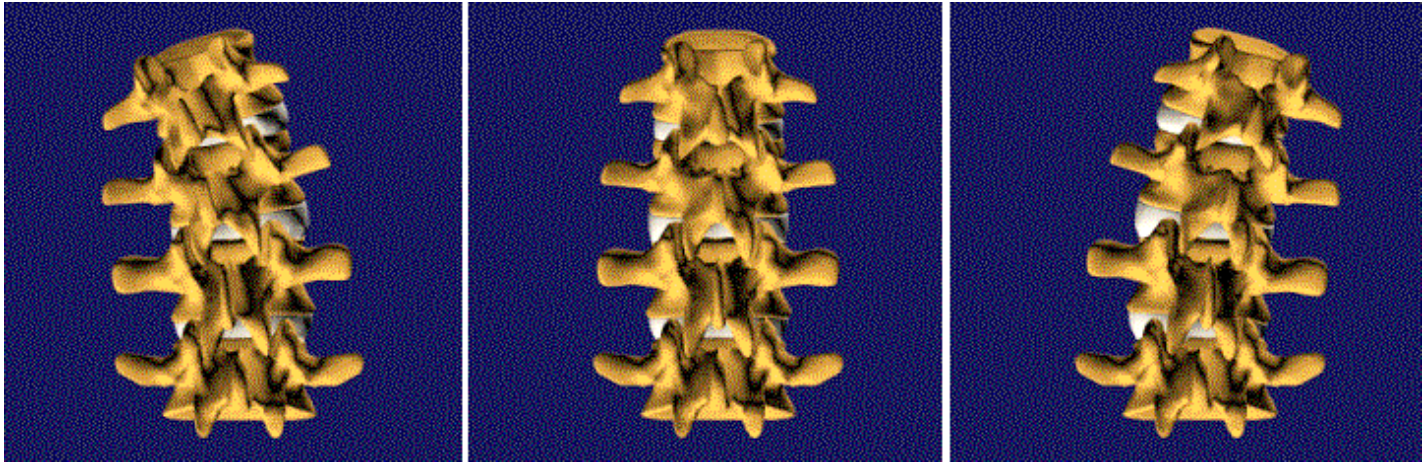


Figure 6.8. Greenman's classification of lateral pelvic tilt (Courtesy ACAP).



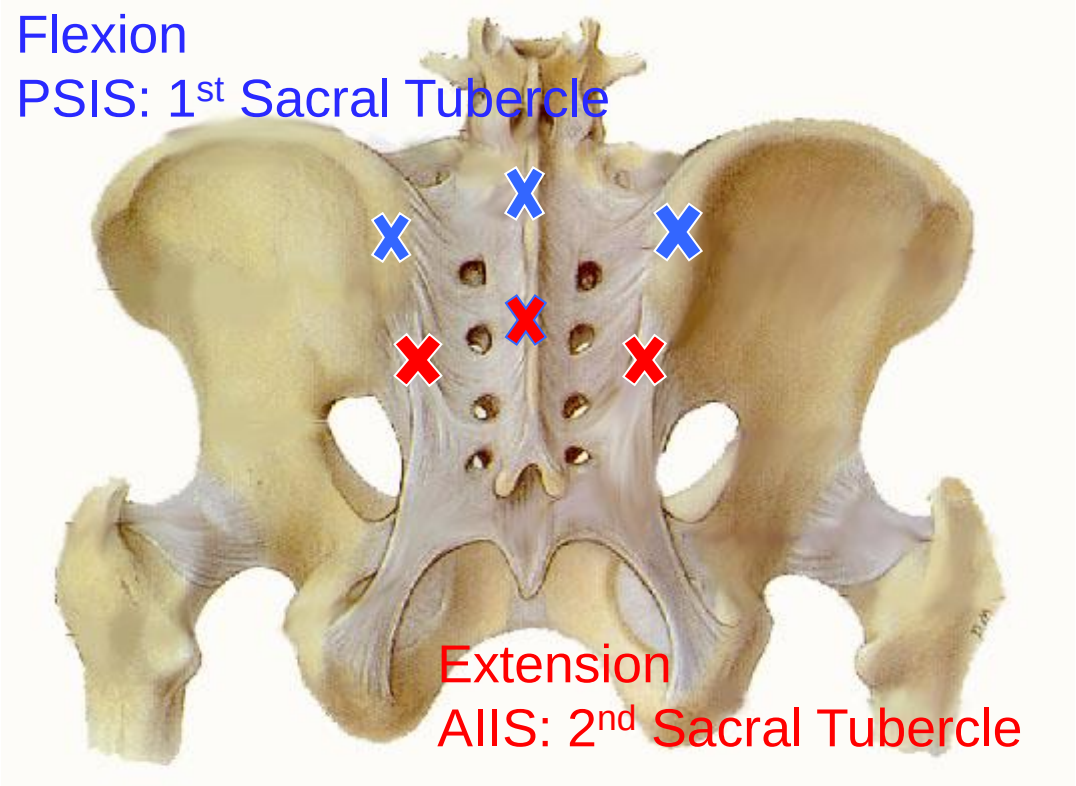
LS Coupling



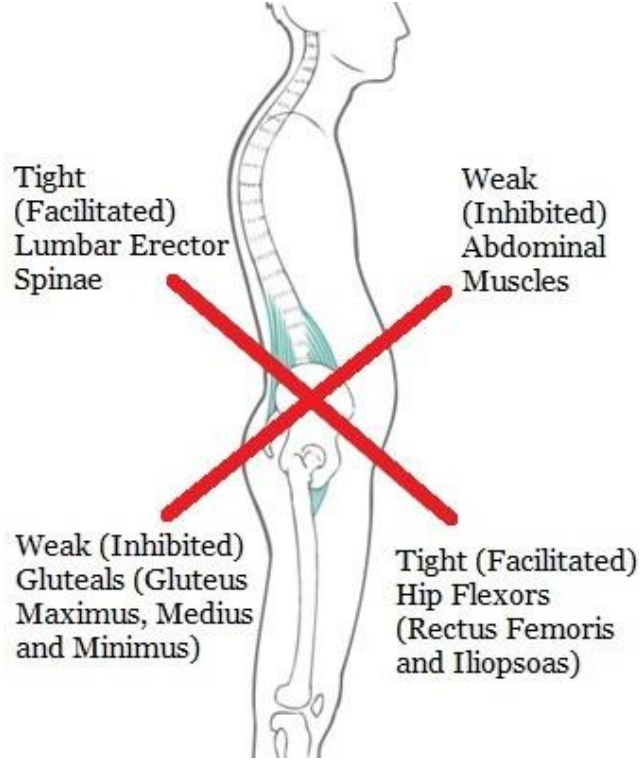
Spinous processes rotate toward the side of bending in the LS

Palpate this motion.

SI Joint Play



Lower Crossed Distortion: Janda



Can treat this with Chiropractic Rehab!

Lower Crossed Distortion RX Plan

- CMT as needed- whole kinetic chain
- Manual and instrument assisted soft tissue release
- Home care
- Active in office exercise progression

Lower Crossed Distortion Exercise RX

Lengthen

- Iliopsoas
- Rectus Femoris
- TFL
- Adductors
- Erector Spinae
- Gastroc/soleus

Strengthen

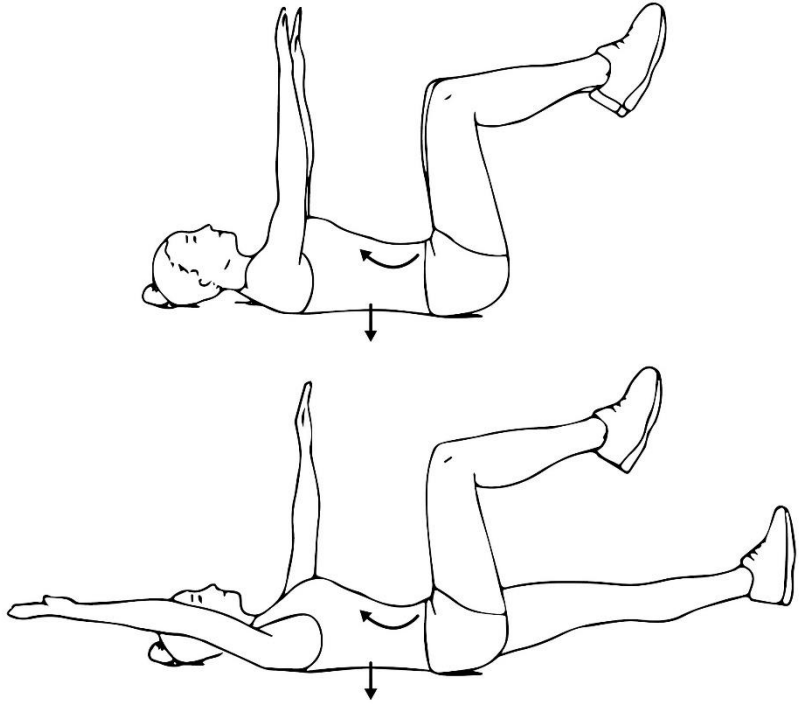
- Glut Max
- Hamstrings
- Glut Med
- Core stabilizers
- Ant & Post Tibialis

Lower Crossed: Lengthening

- Iliopsoas
- Rectus Femoris
- TFL
- Adductors
- Erector Spinae
- Gastroc/soleus

- Passive
  - Static Stretches
- Active
  - Foam Roll
  - Massage Stick
  - Dynamic activities
- PIR

Flexion Biased Strengthening



Dead Bug Progression in Flexion

- Supine hook lying
- W/ Abdominal breathing
- Dead bug position
- Legs moving only
- Arms moving only
- Great with a biofeedback device

Lower Crossed Review

Stretch

- Psoas
- Rectus Femoris
- TFL
- Adductors
- Gastrocnemius
- Soleus
- Erector Spinae

Strengthen

- Core
- Side Lying Glut Med
- Monster Walks
- Lateral Band Walking
- Tib Anterior & Posterior w/ band
- Squat to Row
- Squat to Press
- Kettle Bell Swings
- Chops

Essential Corrective Points

Lower Cross Syndrome

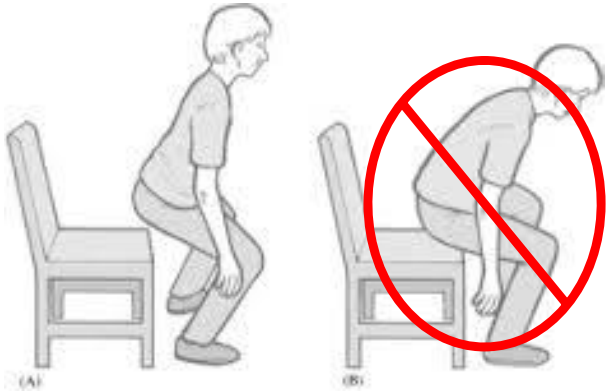
- Maintain neutral spine with all active exercises
- Avoid hip flexor dominance when strengthening gluteus medius
- Emphasize the eccentric contraction
- Keep posture alignment throughout the whole body
- Activate glut max firing patterns properly

Hip & Pelvis: Movement Patterns

- Hip Extension
  - 10° Isolated hip extension
  - Glut max fires early and completely
  - Pelvis remains level
  - LS remains neutral
- Hip Abduction
  - Glut Medius fires
  - Hips stay “stacked”
  - No hip flexion or LE external rotation
- Hip Hinge

Hip Hinge Breakout

- Ball Squats
- Kneeling Hip Hinge
- Sit to Stand

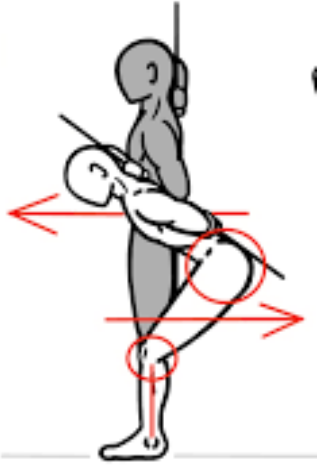


Contingent on foot and ankle mechanics

Movement Pattern Treatment

Mobility or Stability issue?

- Mobility
  - Joint/soft tissue
- Stability
  - Core
  - Isolated Weakness



LPHC Mobility

- Hip ROM - Active / passive
  - Flexion: supine
  - Extension: prone
  - Int/ Ext Rotation: seated
- Deep Squat
  - w/ and w/o assistance

Deep Squat

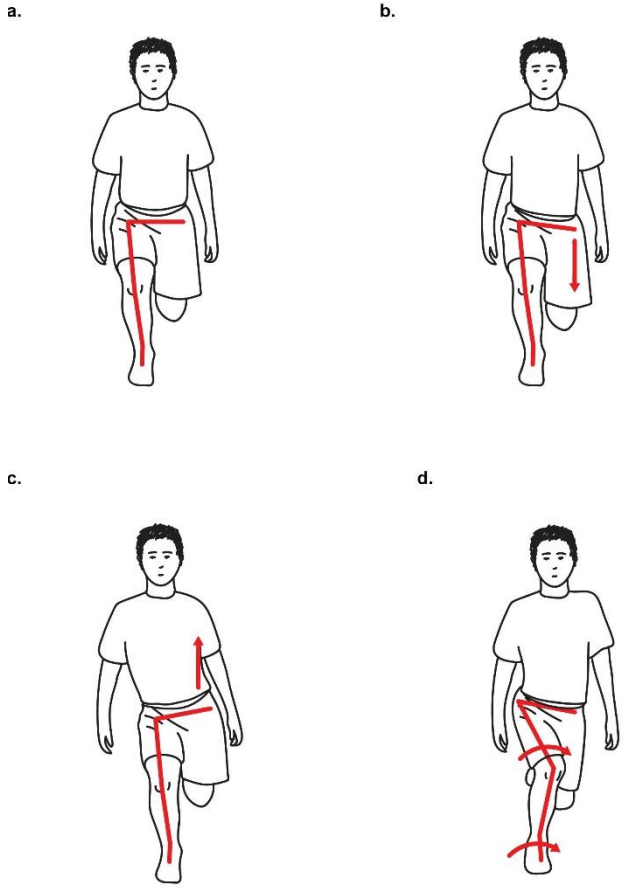
- Feet Shoulder width apart
- Pass parallel
- Hold hands to assess Mobility

LPHC Stability

- Overhead Squat
- Dynamic Trendelenberg
- Balance?

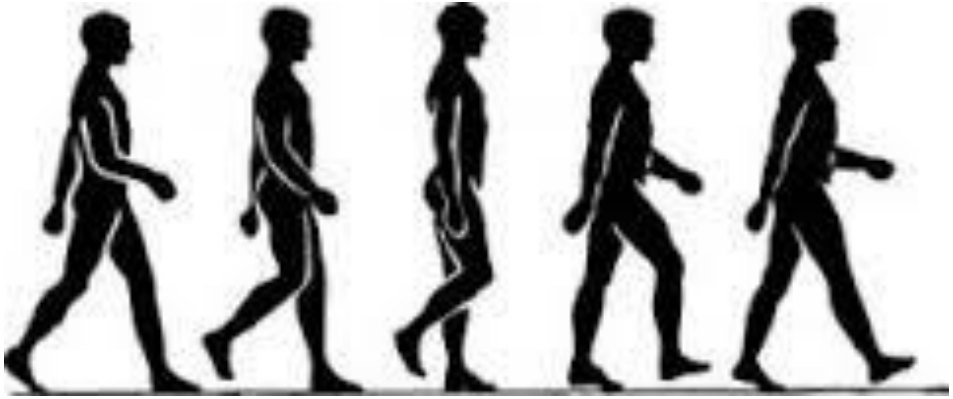
Hip & Pelvis: Dynamic Movement

- Trendelenberg
  - Static
  - Dynamic
- Squat Mechanics
  - Hip Hinge: Neutral Spine*



Dynamic *Assessment*

- Overhead Squat
- Deep Squat
- Gait



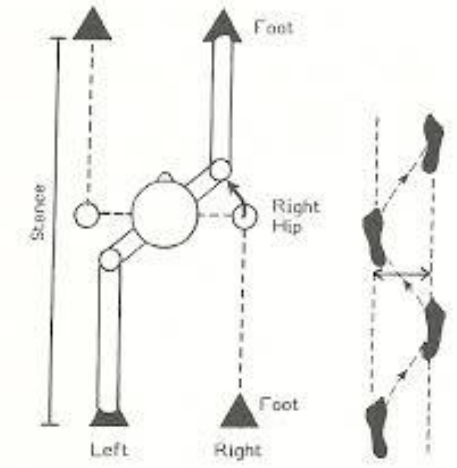


Figure 4.21. *Left*, schematic of stride length. *Right*, the extent of sway depends upon the width of the base of support.

OSA: Neutral

OSA Algorithm

- Neutral
  - Evaluate Check points
- Heels Elevated
  - Change indicates lower leg
- Hands on Hips
  - Change indicates Thoracic
- Single Leg
  - Rarely Improves
- Dynamic
  - Jump downs, ¼ squat , hop

Squat Series: Dynamic Chiropractic

Jan, March, Aug, Nov 2019

RELEVANT REHAB

Assessment Tools: The Overhead Squat

READ ON MOBILE

DONALD DEFABIO, DC, DACBSP, DABCO

EDITOR'S NOTE: Previous articles in this four-article series appeared in the January, March and August 2019 issues.

This is the fourth and final article in this series on squat mechanics, designed to give the DC a comprehensive understanding of the squat as a foundational exercise, its use as a functional assessment tool, and common deficits and corrective interventions that can be used in everyday practice.

Deficit	Probable Tight Muscles & Joint Restrictions (Often Needed)	Probable Weak Muscles	Suggested Corrective Actions
Anterior/Lateral Pelvic Shift	**Side of Shift:** Adductors TFL **Opposite Side of Shift:** Psoas Gluteus medius Biceps femoris	**Side of Shift:** Gluteus medius **Opposite Side of Shift:** Adductor	Lateral band walks Wall squats Gluteus medius (same side) Adductors (opposite side) Diff hip / ankle Hip flow restricts
Hip Drops in ½ Squat	**Opposite Side of Drop:** Quadratus lumborum	**Opposite Side of Drop:** Gluteus medius	Split squats Single-leg bridges Dorsiflex Diff hip
Hip Hikes in ½ squat	**Side of Drop:** Quadratus lumborum	**Opposite Side of Drop:** Gluteus medius	Sit to chair Hip hinge Diff ankle

tions are for the patient to squat to chair height or up to parallel (not below, as this is not a deep squat) in the following sequence:

four positions are similar to the previously described checkpoints for the BSA. Anteriorly, the head, shoulders and pel-

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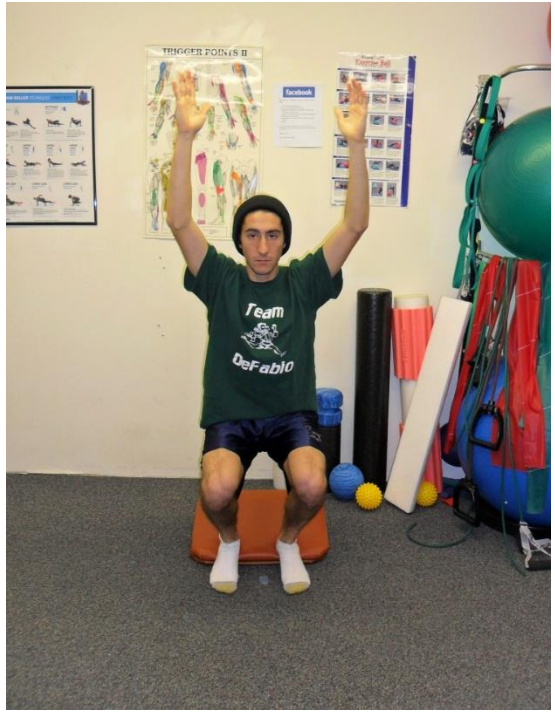
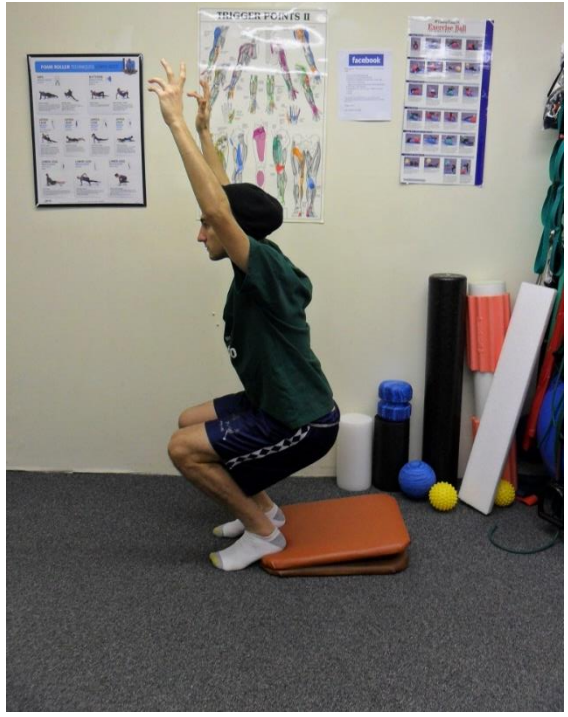
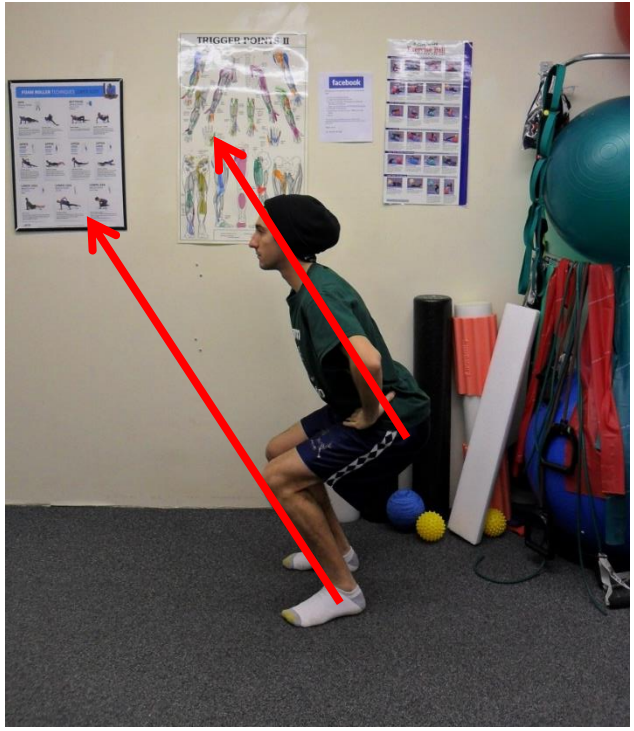
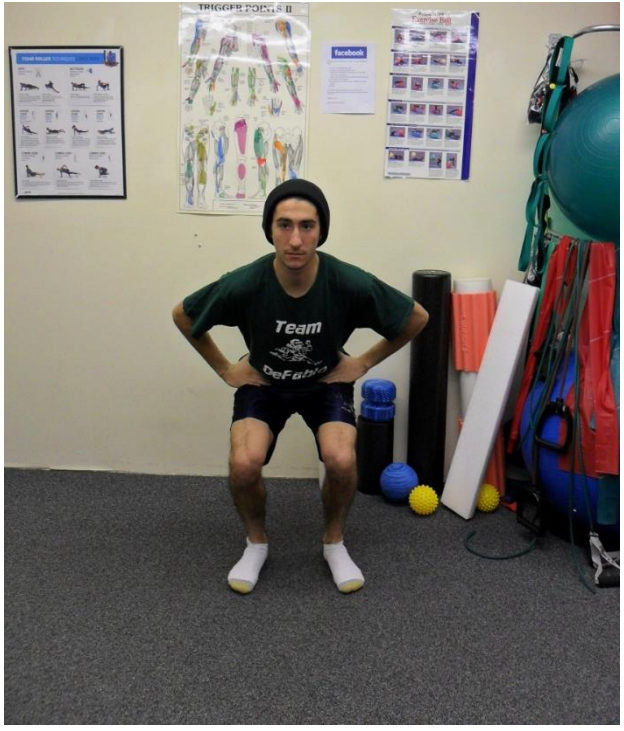
OSA.2
Heels Elevated





OSA.3
Hands on Hips





OSA.4
Single Leg ¼ Squat

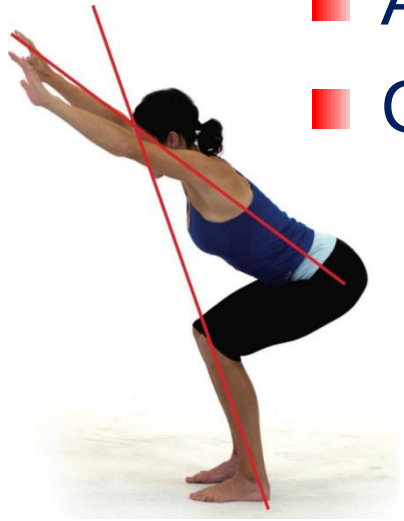
LPHC Abnormal Findings

- Forward Lean
- Excessive Lordosis – LS “arches”
- Lordosis Flattens – LS “rounds”
- Asymmetrical shift

LPHC Forward Lean

Tight/Overactive

- Hip Flexors
- Rectus Abdominus
- Gastroc/Soleus
- Piriformis



Weak/Underactive

- LS Extensors
- Glut Med/Max
- Ant Tibialis
- Core Stabilizers

LPHC Corrective Exercise RX:

Tight / Overactive

- Stretch
- Foam Roll
- Massage Stick
- IASTM
- Pin & Stretch
- CMT?

Weak / Inhibited

- Isolated strengthening
- Compound movement
- Functional movement
- Power/ Speed

LPHC Excessive Lordosis

Tight/ Overactive

- Hip Flexors
- Erector Spinae
- Latissimus Dorsi

Weak/Underactive

- Core Stabilizers
- Hamstrings
- Glut Med/Max

LPHC: Lordosis Flattens

Tight/ Overactive

- Hamstrings
- Adductor Magnus
- Rectus Abdominis

Weak/Underactive

- Glut Max
- Hip Flexors
- Erector Spinae
- Latissimus Dorsi
- Core Stabilizers

LPHC: Asymmetrical Shift

Tight/ Overactive

IPSILATERAL

- Gastroc/Soleus
- Adductor
- TFL

CONTRALATERAL

- Piriformis
- Biceps Femoris
- Glut Medius

Weak/Underactive

IPSILATERAL

- Glut Med

CONTRALATERAL

- Tib Anterior
- Adductor

NAME:_____ DATE:_____

Overhead Squat Test

Anterior View		Right YES	Left YES
Foot	Foot Turns Out		
Knee	Moves Inward		
	Moves Outward		

Lateral View (Right Side)		YES
L-P-H-C	Excessive Forward Lean	
	Low Back Arches	
	Low Back Rounds	
Upper Body	Arms Fall Forward	

Posterior View		Right Yes	Left YES
Foot	Heel of Foot Rises		
	Foot Flattens		
L-P-H-C	Asymmetrical Weight Shift		

MODIFIED:	HEELS ELEVATED	ARMS DOWN
FEET		
KNEES		
LPHC		
UPPER		

NOTES:

Single Leg Squat Test

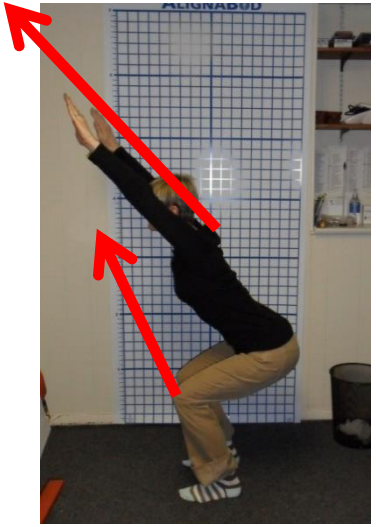
RIGHT Leg			LEFT Leg		
		Right YES			Left YES
Foot	Foot Flattens		Foot	Foot Flattens	
Knee	Moves Inward		Knee	Moves Inward	
	Moves Outward			Moves Outward	
L-P-H-C	Hip Hike		L-P-H-C	Hip Hike	
	Hip Drop			Hip Drop	
Upper Body	Inward Trunk Rotation		Upper Body	Inward Trunk Rotation	
	Outward Trunk Rotation			Outward Trunk Rotation	

NOTES:

OSA Key

Asymmetrical Shift	IPSILATERAL: Adductors: TFL: CONTRALATERAL: Piriformis: Biceps Femoris Gluteus Medius	IPSILATERAL: Gluteus Medius: Piriformis: Biceps Femoris; CONTRALATERAL: Adductor: TFL
Torso Falls Forward	Soleus Gastrocnemius Iliopsoas Rectus Abdominus External Oblique	Tibialis Anterior Gluteus Maximus Errector Spinae
Posterior Pelvic Shift -Decreased Lordosis	Hamstrings Adductor Magnus Rectus Abdominus External Oblique	Gluteus Maximus Erector Spinae TA
Anterior Pelvic Shift -Increased Lordosis	Iliopsoas Erector Spinae Latissimus Dorsi	Gluteus Maximus Hamstrings TA

Rx Progression



- CMT
- Foam Roll / Stick
- Isolated Strengthening
  - 3 X 15-20
- Integrated Strengthening
  - 3 X 15-20
- Balance & Agility
  - 3 - 5X/wk
- Power & Speed
  - 1-2X/wk

Lab: Hip & Pelvis Assessment

- Standing
- Static
- Trendelenburg
  - Static
  - Dynamic
- Squat Mechanics
  - Hip Hinge
  - Neutral Spine
- Supine
- Fabere
- Thomas
  - Rectus Femoris
  - Iliopsoas

Hip & Pelvis
Self Myofascial Release

- Foam Roller
  - Deeper
  - Ischemic Compression
  - Requires more physical mobility
- Massage Stick
  - Superficial
  - Quicker
  - Portable

Hip and Pelvis
Post Isometric Relaxation - PIR

- Prone
  - Iliopsoas
  - Anterior Capsule
    - Yeoman's Position
- Side Posture
  - QL
  - TFL / ITB
  - Iliopsoas
  - Rectus femoris
- Supine:
  - Semimembranosis
  - Semitendnosis
  - Biceps Femoris
  - Iliopsoas
  - Piriformis
  - Adductors

Manual or w/ Stretch Out Strap

Hip & Pelvis: Rehab

1. Release areas of myofibrosis
    - SMR: Roller Massage: IASTM
2. Lengthen tight muscles
    - PIR (Contract – Relax – Stretch)
    - Stretch out strap
3. Strengthen weak muscles
4. Integrate functional movement patterns

LPHC Top Exercises

- Stretch
  - Hip Flexors, Hamstring, Piriformis, Soleus, Gastrocnemius
- Strengthen
  - Gluteus Medius, Gluteus Maximus, Tib anterior, Tib Posterior, Intrinsic Core
- Hip Hinge Favorites:
  - Ball Squats, ¼ Squats, Sit to Stand

Hip & Pelvis Stretches

- Hamstring
- Piriformis
- Hip Flexor

LPHC
Strengthening Level 1

- Gluteus Medius
  - Clam Shells
  - SLGM

- Gluteus Maximus
  - Prone Hip extensions w/ glut iso
  - Quadruped

Prone hip extension

LPHC Strengthening: Level 2

- Add Resistance
- Gluteus Medius
  - Glut Med Band Walking
- Gluteus Maximus & Medius
  - Ready Position lateral band walks
  - Split Squats
  - Squats w/ stability disc

LPHC Joint Play

HIP:

- Flexion
- Internal rotation
- External rotation
- Long Axis
- Extension

SACROILIAC:

- Static
- Motion palpation
  - Upper/Lower
  - Flexion/Extension

SI CMT

- Side Posture
  - Duplicate the joint restriction and impulse
- Drop
- Instrument
  - Static / Dynamic

Hip and Pelvis Easy Assessment

- Standing
  - Posture
  - Trendelenburg
- Supine
  - Hip ROM
  - Joint Play
  - Fabere
  - Thomas
  - Soft tissue
- Prone
  - Soft tissue
  - Joint Play
    - Extension
    - Rotation
- Side Posture
  - Hip abduction
  - Soft tissue
  - Begin Treatment

Lab: Hip & Pelvis Rehab

- Gluteus Medius
  - Clamshells
  - SLGM
- Gluteus Maximus
  - Prone Hip Extension
  - Quadruped
- Lateral Band & Monster Walks
- Kneeling Hip Hinge
- Ball Squats

Nutraceuticals

- Water
- HPA axis dysregulation
  - Sleep disturbances
- Minerals:
  - Magnesium
  - Calcium
  - Potassium
- Collagen
- Inflammation?

Topicals

- Counterirritants
- Analgesics
- Anti-inflammatories
- Pharmaceuticals
- CBD

TAKE A BREAK!

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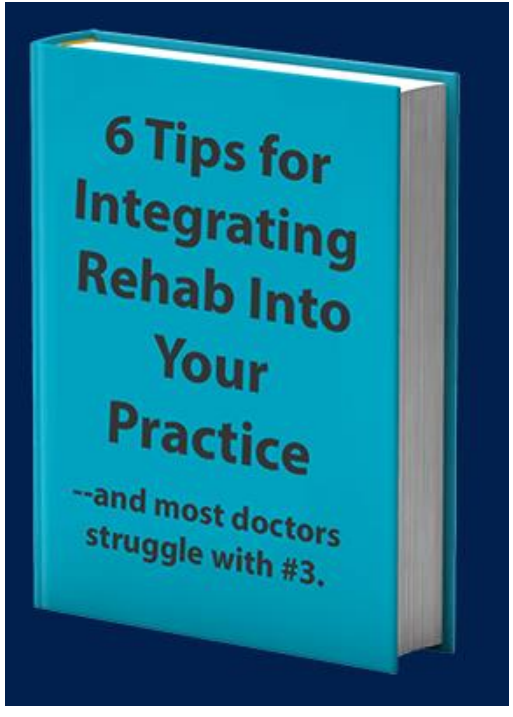

Relevant Rehab: Lower Extremity Postural Distortion

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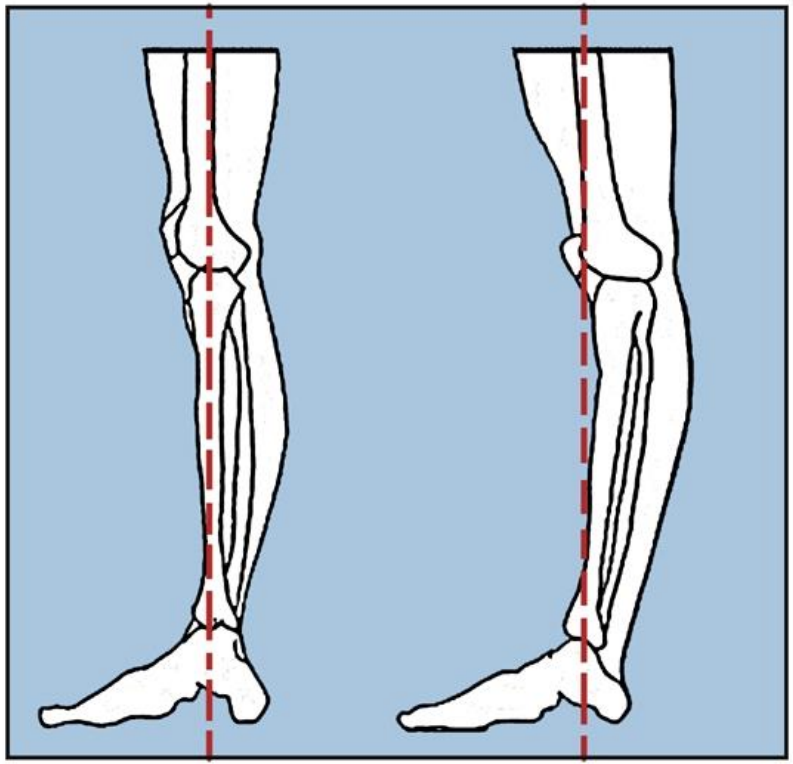
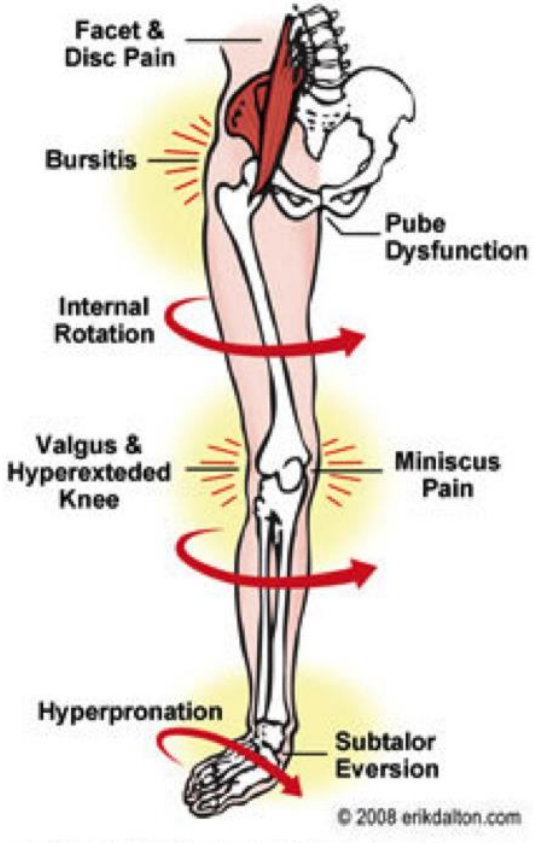
Lower Extremity Posture



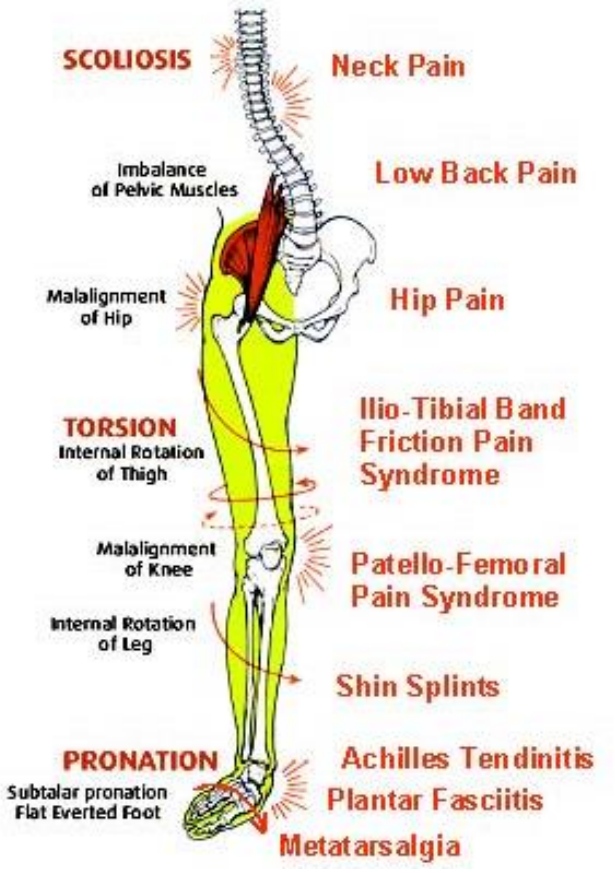


Learning Objectives

- Overview of the pronation distortion syndrome
- Learn to assess static and dynamic postural imbalances of the lower extremity
- Learn rehab progressions and exercises for the lower extremity

Lower Extremity Distortion

i.e., Pronation Distortion



- Pronation
- Knee flexion, internal rotation, valgus shift with activity
- Foot and knee collapse while squatting
- Orthotics maybe indicated

ASSESSMENT

- Static
- Squat
- Check jump mechanics in loading, stabilizing and landing
- Observe for valgus foot & knee dynamics
- Classic turn-out of feet with collapsed arches
- May be unilateral
- Major cause of non-contact ACL injuries.

Ankle Case

- 44 yo female 5’4” tall weighting 145lbs and stands most of the day for work (teacher). After a long hike on vacation developed insidious posterior ankle pain bilaterally which is not improving. Home care has been rest and wearing a slip on ankle wrap.

Ankle Case

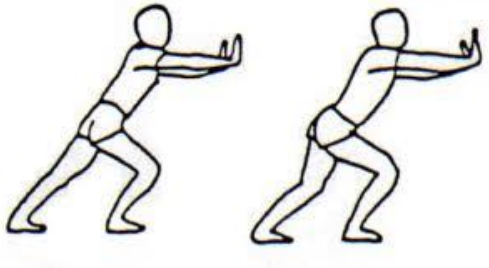
- Examination: tenderness with swelling along the Achilles tendon bilaterally with a palpable “knot” with the right Achilles. Resisted calf raises are possible but painful.
- DTR’s, motor, sensation and pulses are WNL.

Ankle Case

- Differential DX?
- Treatment?
- Diagnostic testing?

Ankle & Foot Top Stretches

- Gastrocnemius & Soleus Stretches
- Biceps Femoris stretches
- Foam Roll / Massage Stick



Ankle & Foot Strengthening

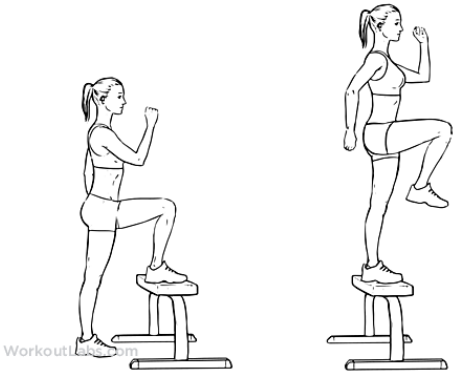
- NWB Active ROM
- Tibialis anterior, Tibialis posterior, Fibialis strengthening with CLX Theraband
- Calf Raises: Slow eccentric
  - 2 leg progress to 1 leg
- Standing Tibialis Posterior

Foot Strengthening

- Gluteus Medius
- Short Foot
- Intrinsic foot
  - Big toe extension
  - Yoga toes
  - Lateral toe extension

Ankle & Foot Strengthening

- Compound Movements
  - Squats: Step –ups: Lunges
  - Add unstable surface
- Single Leg Stand and Reach
- Wobble Board



Ankle & Foot Return to Play

- Jumping
- Jump and hop on unstable surface for RTP

PRONATION DISTORTION SYNDROME

Pronation Distortion Rehab

LENGTHEN

- Peroneals
- Gastrocnemius
  - LATERAL Portion
- Soleus
- ITB
- Hamstring
  - Biceps femoris
- Adductors
- Iliopsoas

STRENGTHEN

- Posterior Tibialis
- Flexor digitorum & flexor hallicus longus
- Anterior Tibialis
- VMO
- Gluteus Medius
- Gluteus Maximus
- Core

Pronation Distortion: Lengthen

LENGTHEN

- Peroneals
- Gastrocnemius
  - LATERAL Portion
- Soleus
- ITB
- Hamstring
  - Biceps femoris
- Adductors
- Iliopsoas

- Contract – Relax
- Passive & assisted stretches
- Self myofascial release
  - Foam Roll / Stick
- Slant Board and ½ foam roller

Pronation Distortion Strengthen

- Posterior Tibialis
- Flexor digitorum & flexor hallicus longus
- Anterior Tibialis
- VMO
- Gluteus Medius
- Gluteus Maximus
- Core
- Adjust lumbopelvic hip and tibia/fibula regions
  - Feet may be hypermobile

Review: Pronation Distortion Rehab

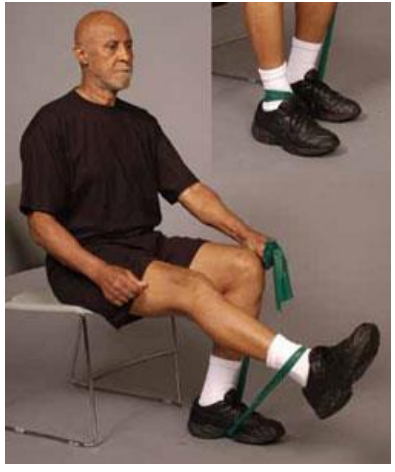
- Stretches for overactive muscles.
- Adjust lumbopelvic hip and tibia/fibula regions
  - Feet may be hypermobile
- Strengthen:
  - Gluteus Medius & Maximus
  - Anterior & Posterior Tibialis
  - VMO
- Ball Squats with band

Pronation Distortion: RTP

- Toe raises with & w/o supination
- Eccentric calf raises
- Squats
- Jumping & Hopping Mechanics
  - Box Jumps
  - Initially with stabilization
  - Multiplanar jumps first then hops
- Jump Rope
  - Maintain foot, knee, hip alignment

VMO – Terminal Knee Extensions

www.thera-bandacademy.com



Thera-Band Knee Extension Sitting: Sit on the edge of a sturdy chair with feet together. Begin by looping the center of the band around the ankle of your exercising leg. Bring the ends of the band underneath the foot of the opposite leg to stabilize and grasp the ends by your knee. Slowly extend your leg so your knee is straight against the band. Hold 1 to 2 seconds and slowly return. Only bend the knee slightly, @ 30 degrees.

Thera-Band Knee ¼ Squat: Stand on the middle of the band with both feet. Grasp the ends of the band at hip level. Perform squat, keeping back & elbows straight. Hold and slowly return. TIPS: Keep your back straight and knees pointing forward. Keep your feet and knees straight ahead.

Ankle & Foot: Exercise Breakout

- Gastroc & Soleus
  - Stretches
  - Foam roll / stick
- Non weight bearing ankle series
  - CLX:
    - Tibialis Anterior
    - Tibialis Posterior
    - Fibularis
- Weight Bearing
    - Standing Tibialis posterior
    - Eccentric calves
    - Wobble Board / Stability Disc / Jumps

Phil's Case

- 48 YO 6'0', 205 lbs male presents with right first ray pain, swelling and stiffness with pain radiating into the medial ankle. He had to stop running due to pain. He was running 10-15 miles/wk. Rest and ice have not been effective in resolution after 2 weeks.
- He walks with the foot in external rotation and limps to avoid any movement at the 1st MCP.

Phil's Case

- Examination revealed loss of dorsiflexion 1st ray with significant tenderness at the 1st MCP and along the medial aspect of the foot. Tenderness to the posterior medial ankle also noted. Positive Heel & Toe walk due to pain.
- DTR's, sensation, pulses all WNL.
- Radiographs of the foot are WNL.

Phil’s Case

- Differential DX?
- Treatment?
- Return to running?

Kinesiology Taping

- Tibialis Anterior

Kinesiology Taping

- Tibialis Posterior

Taping

- Plantar Fascia

Kinesiology Taping

- Achilles Tendon

Kinesiology 1st MCP

Taping Inversion Sprain

- MCFL +ATFL + PTFL

Taping Lab

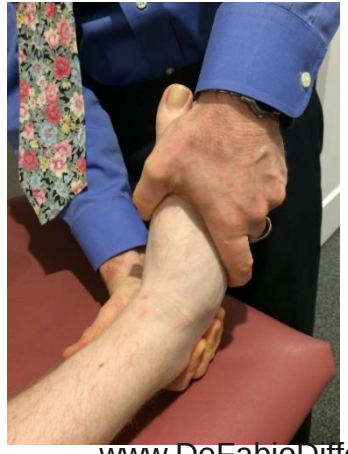
- Tibialis Anterior
- Tibialis Posterior
- Plantar Fascia
- Achilles Tendon
- ATFL
- Ist MCP

Distal Metatarsals

- Long Axis
- AP / PA Glide
  - Supine

Intermetarsal Joints

- AP / PA Glide
  - Prone / supine
- Rotation
  - Segmental
  - Regional
  - Supine Figure “8”



Roma's Case

- A 55 yo female standing 5'2" tall and weighting 135 lbs with a history of significant thoraco-lumbar scoliosis and early onset of peripheral neuropathy in her feet. The right foot also has pain on the ball of her foot by the third distal metatarsal. Her PCP diagnosed her with a neuroma.

Roma's Case

- Differential DX?
- Additional testing?
- Treatment?

Beginning Monday

- Check static posture for distortions
- Ask about posture in the consult
- Educate your patients on how engaging mid and lower traps releases tension in the upper traps and neck
- Practice the Overhead Squat Assessment
- Place a CLX band in every room
- Put a ½ foam roller in each room

TAKE A BREAK!

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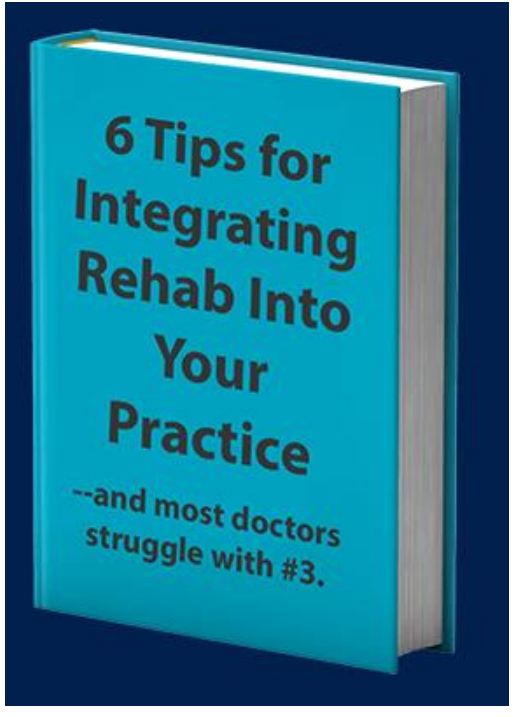

Relevant Rehab:
Billing: Coding: Boundaries

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Objectives

- Legal issues related to patient boundaries
- Understand appropriate methods when treating patients to remain in the “safe zone”
- Appropriate billing code use for active care
- Documentation requirements for billing active care
- Update on Daily Documentation
  - SOAP & E/M
- Ethics and Social Media

Boundaries

Consultation

- Discuss the exam and treatment process
  - Sign Posting
- Ask patient how they would like to be addressed
- Avoid terms of endearment
- Guard your eyes
- Avoid sexual references
- Have an assistant in the room, preferably opposite sex of the doctor
- No locker room jokes!

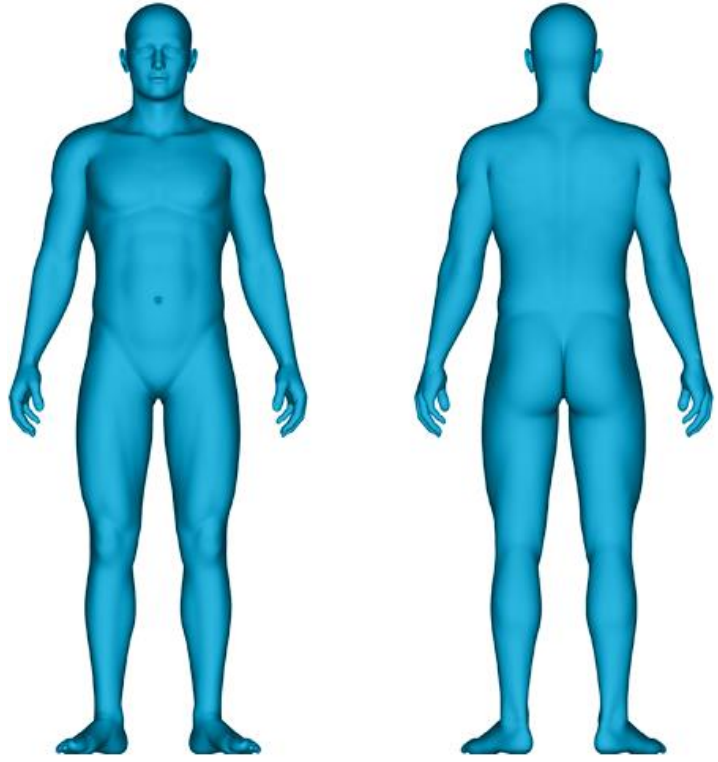
Examination

- Sign posting - again
- Assume patient's modesty
- Leave the room when changing
- Ask the patient for permission
  - To move their clothes
  - To touch / assist them
- Tell patients what you are doing when out of sight
- Palpate vs. touch
- Must have assistant in the room

Hands -On

- Sign Posting – again
- Ask for permission
- Intention of touch
- Your Words + Your Touch = ***Distinct Message***

Sensitive Areas



- Potentially Everywhere!

Bathing Suit Lines

- Chest/ Breast region
- Sign Posting – again
- Ask patient to move breast tissue out of the way
- If the doctor needs to touch/move breast tissue use the back of your hand
- Palpate / treat through the patient's hand
- Ask for the patient's reassurance
- Know where your non-contact fingers are!

Caveats: Remember To…..

- Sign Posting – again
- Discuss / show the contact and RX site
- Assistant with the doctor
- Ask for permission
- Ask for the patient's reassurance
- Guard your eyes
- Through clothing if possible : NOT a complete safeguard
- Drape the patient as needed
- Treat/ palpate through patient's hand
- Consider Open Rooms

Gluteal, SI, Peri-sacral, Groin Region

- Remember the Caveats
- Through clothing whenever possible
- Specific Contact
- Patient hands on contact site?
- Adductors?
- SOT?
- Logan Basic?
- Therapies?

Better Choices

Cultural Issues

- British people are less comfortable with touching than the Finns, who were most comfortable with touching
- Italians were found to be slightly more comfortable with touch than the Brits

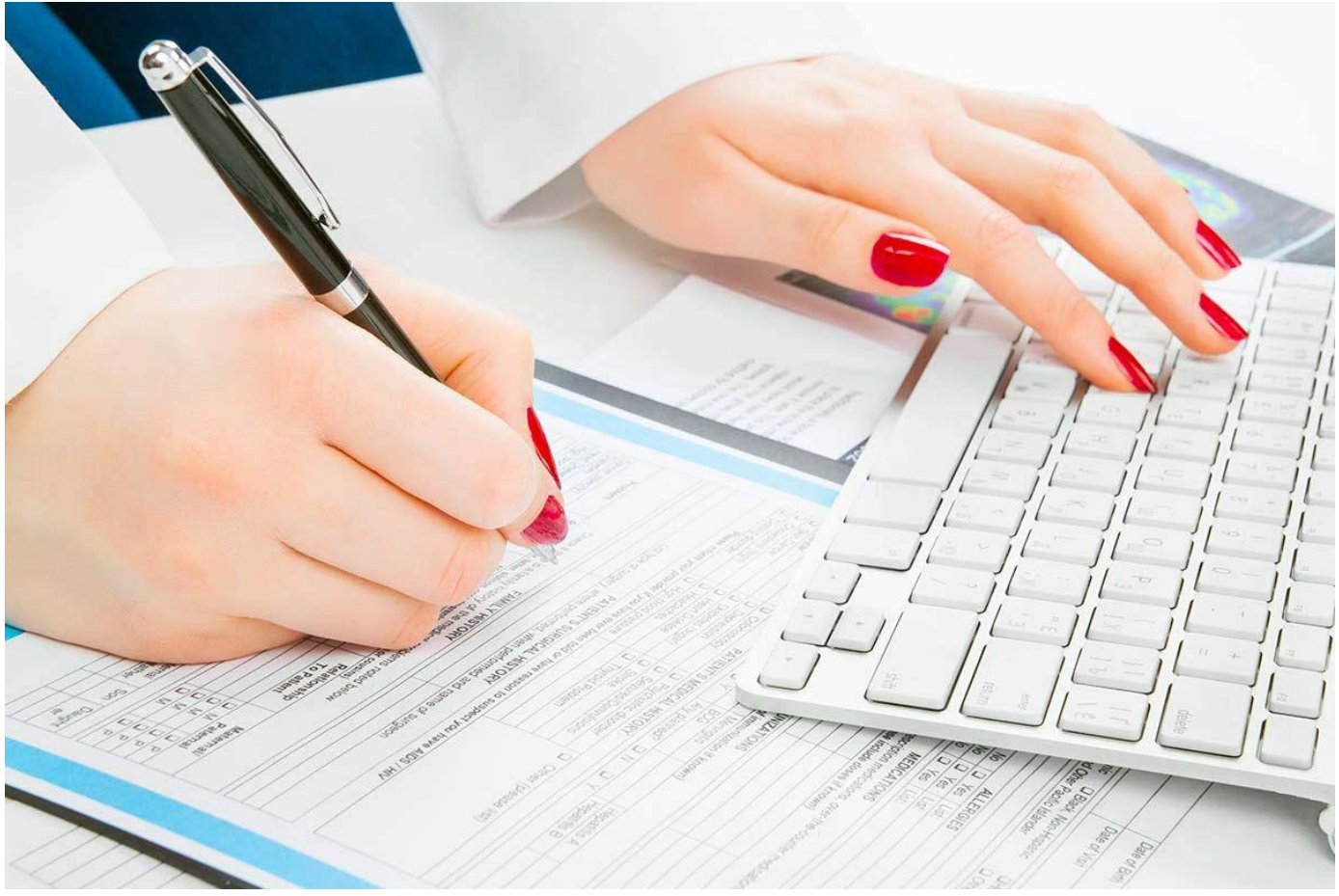
Suvilehto JT, Glerean J, Dunbar R, Hari R, Nummenmaa L, Topography of social touching depends on emotional bonds between humans, Proc Natl Acad, Sci USA, 45:112:13811–13816; Oct 2015

Male vs. Female Issues

- Women were found to be more comfortable with friends touching their bodies vs. strangers
- Men are less comfortable with family and friends touching their bodies, especially males
- Men: no issue to let a stranger touch their bodies, even their genitals

Suvilehto JT, Oct 2015

Documentation



Coding for Rehab

Phases of Care

- Passive
- Assisted
- Active

Correlate these with your billing to document what you are doing as you progress with the patient.

Coding & Billing for Active Care

- Rehab:
  - Driven by: Therapeutic Goal, Phase of Care & Dx
- Billing Codes
  - Reported by therapeutic goal, time, relationship to function & procedure used
- Modalities
  - Coded and billed based on the device used
- Therapeutic Procedures
  - Coded and billed based on the intended outcome

Therapeutic Procedures

- Essential to document the intended clinical outcome as well as how the procedure is performed
- Be sure to document the relationship to a functional activity in the treatment plan
  - i.e., to increase flexibility of the hamstrings while activating the transverse abdominus improve the patient's capacity to sit while maintaining a neutral spine

Therapeutic Procedures

- *A manner of effecting change through the application of clinical skills and/or services that attempt to improve function. Physician or therapist required to have direct (one-on-one) patient contact*
- Need to document the relationship to a functional activity
- Procedures are coded based on 15 minute intervals. If a procedure lasts more than 15 minutes, multiple units can be billed if appropriate
- Group therapy is not one-on-one patient contact

97110 Therapeutic Procedure

- Therapeutic procedure, one or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility
- Performed as active, active-assisted or passive approach
  - treadmill, isokinetic exercise, lumbar stabilization, stretching, strengthening
- The exercises may be reasonable and medically necessary for a loss or restriction of joint motion, strength, functional capacity or mobility that has resulted from a specific disease or injury

97110 Con't

- Documentation must show objective loss of joint motion, strength or mobility
  - degrees of motion, strength grades, levels of assistance

- For a documented loss or restriction of *joint motion, strength, functional capacity or mobility* that has resulted from a specific disease or injury

97112 Neuromuscular Re-education

- Neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture and/or proprioception for sitting and/or standing activities
- Used to improve balance, coordination, kinesthetic sense and proprioception
- Specifically related to CNS issues: stroke, TBI, SCI, CP, upper motor lesions which affect the body's neuromuscular system (e.g., poor static or dynamic sitting/standing balance, loss of gross and fine motor coordination, hypo/hypertonicity)
- Examples include Proprioceptive Neuromuscular Facilitation (PNF), The Feldenkrais Method, Bobath, Bap's Boards and Desensitization Techniques

97112 Neuromuscular Re-education

- DX:
  - Loss of gross or fine motor skills
  - Hypo / hypertonicity
  - Reflect neural impairment/involvement
- Eval:
  - Sensorimotor testing
  - Scapular dyskinesis: with neurologic deficit
  - Abnormal firing patterns
- SCI/TBI/CVA

97116 Gait Training

- Gait training: includes stair climbing
- Gait training should be used for training patients whose walking abilities have been impaired by neurological, muscular or skeletal abnormalities or trauma.
- Should not be used when the patient's walking ability is not expected to improve.

97116 Gait Training

- Document impairments of swing, stance, double stance phase of gait
- Squat mechanics, Dynamic Trendelenburg, step downs, jump downs
- Motion analysis: Rhythm, speed, heel/toe, base

97530 Therapeutic activities

- **Therapeutic activities**, direct (one on one) patient contact by the provider :*use of dynamic activities to improve functional performance*, each 15 minutes.
- Dynamic activities include the use of multiple parameters, such as balance, strength, and range of motion, for a functional activity. Examples include lifting stations, closed kinetic chain activity, hand assembly activity, transfers (chair to bed, lying to sitting, etc), and throwing, catching, or swinging:
- Functional activities specifically related to work (hardening/conditioning) should be coded using 97545.

97140 Manual Therapy Techniques

- **Manual Therapy Techniques** – Manual therapy techniques include soft tissue and joint mobilization, manipulation, manual lymphatic drainage, manual traction, trigger point therapy (non-injectable) and myofascial release. Manual therapy techniques are used to treat restricted motion of soft tissues in the extremities, neck and trunk
- Used in an active and/or passive fashion to effect changes in the soft tissues, articular structures, neural or vascular changes in soft tissue
  - Facilitation of fluid exchange, restoration of movement in acutely edematous muscles or stretching of shortened connective tissues
- Used when a loss of motor ability impedes function
- Timed code
- <u>Diagnosis pointing and -59 modifier required</u>

97124 Massage Therapy

- **Massage Therapy**
  - a preparatory procedure on the same day as a therapeutic procedure
  - to restore muscle function, reduce edema, improve joint motion or for relief of muscle spasm
- Should be related to other therapeutic procedures within the overall plan of treatment
- Includes effleurage, petrissage and/or tapotement (stroking, compression, percussion)
- Used to reduce spasm and stiffness

Special Note on 97140, 97124, 97112

- Therapeutic procedures:
  - timed based, coded by outcome, document exact procedure
- Needs to use a -59 modifier and needs to be performed on a separate and distinct region than the CMT
- Dx linking is a must

97150 Group Therapy

- Therapeutic procedures in a group of two or more individuals, reported for each member of the group

- Group therapy procedures involve constant attendance of the physician or therapist, but do not require one-on-one patient contact by the physician or therapist.

97150 Con't

- Documentation must identify
  - specific treatment technique(s) used
  - how the treatment technique will restore function
  - the frequency and duration of the particular group setting
  - the number of persons in the group
  - the treatment goal in the individualized plan

97150 Con't

- Group therapy consists of simultaneous treatment to two or more patients who may or may not be doing the same activities
- The specific therapeutic procedure should not be reported in addition to 97150
- If the DC is dividing attention among the patients, providing only brief, intermittent personal contact, or giving the same instructions to two or more patients at the same time, it is appropriate to bill each patient one unit of group therapy

97150 Example

- In a 25-minute period, a DC works with two patients, A and B, and divides his/her time between two patients. The DC moves back and forth between the two patients, spending a minute or two at a time, and provides occasional assistance and modifications to patient A's exercise program and offers verbal cues for patient B's balance activities

Reported as One Unit 97150 per patient

However…….

A DC works with 3 patients: A, B, and C, providing and supervising therapeutic exercises to each patient with direct one-on-one contact in the following sequence:

- Patient A receives 3 minutes, patient B receives 3 minutes and patient C receives 3 minutes.
- After this initial 9-minute period, the DC returns to work with patient A for 5 more minutes (8 minutes total), then patient B for 12 more minutes (15 minutes total), and finally patient C for 15 additional minutes (18 minutes total).
- During the times the patients are not receiving direct one-on-one contact with the DC/LCA, they are each exercising independently.

Each patient can be billed one unit, 97110

97110 & 97150 Together

- Billing for both individual (one-on-one) and group services provided to the same patient on the same day is allowed, *provided the rules for one-on-one and group therapy are both met*
- The group therapy session must be clearly distinct or independent from other services and billed using the -59 modifier

Active Care Documentation

- Rationale for procedure
  - Reduce pain, increase strength, restore function, improve ROM, increase endurance
- Timed code Units
  - 8-22 minutes one unit
  - 23-37 minutes two units
  - 53- 67 minutes three units

Active Care Documentation

- Units for separate timed procedures in one visit are combined
- Procedure with most minutes is the one billed first
  - i.e. 8 minutes ultrasound & 12 minutes therapeutic activity on same visit:
    - bill as one unit of therapeutic activity

Examples of Active Care Coding

- 10 minutes of myofascial release (lumbar region)
- 10 minutes of therapeutic exercises
- 5 minutes of mechanical traction
- Adjust C5, C6, T1, right SI joint
- The answer is….

97140-59 (CCI edit) OR 97110 (must pick 97140 or 97110 – cannot bill both) plus 97012, 98941

Remember…….

- Therapeutic procedures require direct one on one patient contact by a physician or therapist.
- As indicated in the definition above, therapeutic procedures should be coded based on the desired outcome, not the method of delivery (as with modalities).
- With the exception of group therapy, these procedures are coded based using the 15-minute interval rule

Thanks to PayDC for these notes: www.PayDC.com

Essential Documentation

- Initial intake
- Written Informed Consent
- S.O.A.P
- Interim Examinations
- Care Plan
- Treatment Plan
- Diagnosis

Initial Patient Visit Intake Forms:

- Health History Intake Questionnaire
- Financial Policy
- Assignment of Benefits
- Authorization to Release Information
- Lien/Letter of Protection
- Informed Consent
- Consent to Treat Minor
- Acknowledgement Form for Non-payable Services
- Medicare Non-covered Services Form & ABN Form
- Outcome Measurement Forms
- Notice of Privacy Practices (HIPAA)

Initial Evaluation:

- Create a plan of care for all new patients.

1. History
2. Examination
3. Diagnosis
4. Patient Clinical Goals
5. List Services/Rationale
6. Schedule of Care
   - SOAP notes typically follow schedule of care

Chief Complaint:

- A concise statement describing the symptom, condition, diagnosis, and/or other factors that are the reason for the encounter, usually stated in the patient's own words.

- Clearly documented and included in the history

OPQRST

- Onset (sudden, gradual)
- Provocation or Palliation
- Quality (sharp, dull, burning, intermittent, constant)
- Radiation (referred pain)
- Severity (pain score)
- Time (how long, changes, happened before)
- Location (site of problem)

More History

- System Review
- Past, family, social history
- Associated Symptoms (numbness, tingling, swelling)
- ADL (what does condition prevent)
- Seen a DC in the past?

Examination

- General appearance, posture
- Vital signs - measure 3 of the following:
  - BP sitting, standing or supine: Pulse rate/regularity: Respiration: Temperature: Height: Weight
- Gait/Station
- Reflexes
- Sensation
- Skin
- Brief Mental Assessment

Chiropractic Exam

- Palpation: tenderness, pain, crepitation, masses, swelling, edema, contusions, etc.
- Subluxation: segmental dysfunction, asymmetry, fixation, restriction, misalignment, joint stability, joint laxity, etc.
- ROM: restrictions and/or pain
- Muscle/ligament: strength, tone, hypertonicity, spasm, muscle weakness, atrophy

Decision-making:

- Order x-rays, MRI, NCV, EMG
- Request / review previous records
- Modalities, Therapeutic Activities
- Chiropractic Adjustments
- DME (TENS, lumbar braces), Taping, Orthotics
- Nutrition or Weight Loss Program
- Schedule of care
- Re-examinations

- History
- Exam Findings
- Test Results

Diagnosis

Radiculitis? Radiculopathy? Myelopathy?

- Radiculitis: “inflammation” of the nerve root
- Radiculopathy: radiating pain, with loss of function
- Myelopathy: spinal cord compression creating a neurologic deficit that affects function

Patient Clinical Goals

- Start with patient intake form
- Gather baseline numbers in the consultation
- Ask questions about ADL’s
- Gather baseline numbers in the exam
- Create Goals: feasible & include a time frame
- Update goals during care

Outcome Assessment Tools (OAT's)

- Use them
- Neck Disability Index
- Oswestry Low Back Pain Disability Index
- Roland-Morris Disability Questionnaire
- DASH
- LEFS
- STarT Back Screening Tool
- Par-Q

Chiropractic manipulative treatment (CMT)

- CMT codes include a pre-manipulation patient assessment
- Additional E/M may be reported separately using the modifier 25 *only if* the patient's condition requires a significant separately identifiable E/M service, above and beyond the usual pre-service & post-service work associated with the procedure.

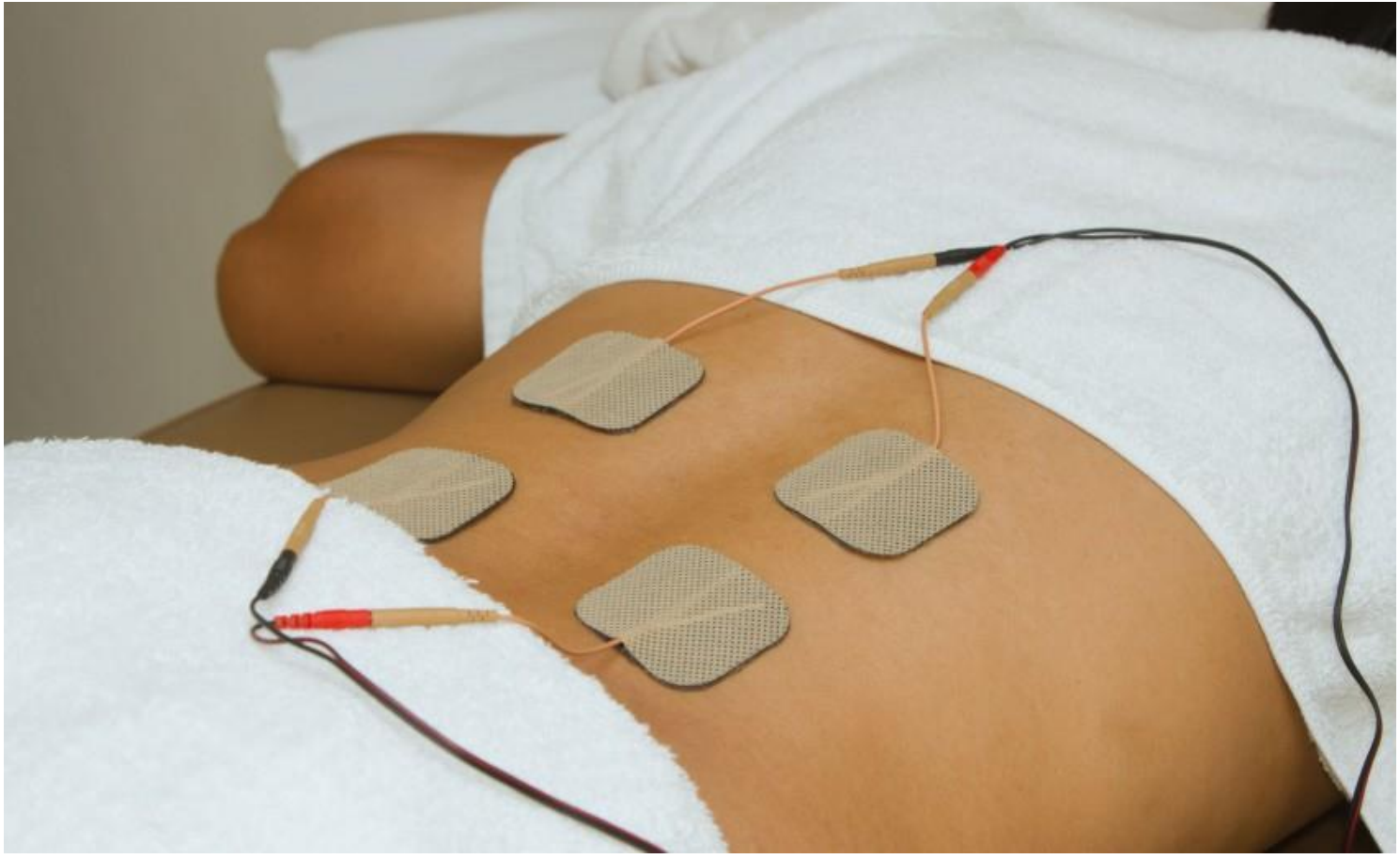
CMT

- 98940-98942: 1-5 spinal regions
- 98943 1-5 extra-spinal regions:
  - Head (including temporomandibular joint, excluding altanto-occipital): Lower extremity: Upper extremity: Rib cage (excluding costotransverse and costovertebral joints): Abdomen

SI Joint Findings

- Subjective: pain in one or both SI joints, buttocks or groin, sitting increases pain, lying down may ease pain
- Ortho: Yeomans, FABER, Thigh Thrust, restricted ROM, muscle spasm
- Chiro: SI joint pathomechanics, pelvicobliquity
- Imaging: X-rays to rule out SI joint pathology

Supervised Modalities: Untimed



Supervised Modalities: Untimed

- 97010 (hot/cold)
- 97012 (mechanical traction)
- 97014/G0283 (unattended EMS)
- 97016 (vasopneumatic)
- 97018 (paraffin bath)
- 97022 (whirlpool)
- 97024 (diathermy)
- 97026 (infrared)
- 97028 (ultraviolet)

Constant Attendance Modalities:

- 97032 (attended EMS)
- 97033 (iontophoresis)
- 97034 (contrast baths)
- 97035 (ultrasound)
- 97039 (unlisted modality)
- S8948 (LLLT)

Direct (one-on-one) patient contact by the provider, one or more areas, each 15 minutes

CMS definition of Medical Necessity

A service, treatment, procedure, equipment, drug or supply provided by a hospital, physician, or other health care provider that is required to identify or treat a beneficiary's illness or injury and which is, as determined by the contractor: a) consistent with the symptom(s) or diagnosis and treatment of the beneficiary's illness or injury; b) appropriate under the standards of acceptable medical practice to treat that illness or injury; c) not solely for the convenience of the participant, physician, hospital, or other health care provider; and d) the most appropriate service, treatment, procedure, equipment, drug, device or supply which can be safely provided to the beneficiary and accomplishes the desired end result in the most economical manner. The items or services being provided must be reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member.

Daily Basics

- All entries must be dated and include the year
- All entries should be initialed or signed
- The chart notes must identify the provider responsible for the care of the patient.
- Do not white out your SOAP notes
  - To make a change to your documentation, draw a single line through the item, date and initial it, then make the correction
- You cannot change, add, delete or alter SOAP notes once they have been entered into the patient record.

Daily Basics

- “If it wasn’t written down, it didn’t happen.”
- Increased demands for extensive and thorough clinical documentation
- Your patient documentation must accurately reflect your clinical thought processes
- Patient progress: subjective and objective
- Good documentation is *really needed* when it is *really needed*

SOAP Notes

- Completed and entered on the day that the service was rendered
- Document if the patient has missed appointments, missed spinal health orientation classes or hasn’t followed your home care instructions
- Document any telephone discussions with the patient

Grading Scales

- Subjective Pain Scales:
  - 1 = very mild, 10 = severe
- Symptom Frequency: •
  - Occasional = 1-25% of the day
  - Intermittent = 26-50% of the day
  - Frequent = 51-75% of the day
  - Constant = 76-100% of the day

Grading Scales Tenderness

- +1 = …..the area is mildly tender and/or annoying
- +2 = ….the area is moderately tender
- +3 = ……considerable tenderness, patient withdraws momentarily in response to pressure
- +4 = …..severe tenderness, withdraws immediately in response to the pressure test and is unable to bear sustained pressure

Subjective

- Include the chief complaint, location, duration, changes since last visit (e.g., better, same, worse)
- Use dis-ability statements or ability statements such as “I can’t get up out of a chair” and “Now I can get up out of a chair.” This provides the expectation of improvement criteria
- Document how symptoms are affecting function

Objective

- Palpation findings, levels articular dysfunction or subluxation, asymmetry, muscle tightness, muscle spasm, poor posture, forward head translation, trigger points, muscle tenderness, inflammation, restricted range of motion, etc.
- Other descriptive terms include off-centered, misalignment, malpositioning, abnormal or decreased spacing, abnormal rotation, limited or restricted motion, hypermobility, hypomobility.

Objective

- Numbers provide evidence of medical necessity
- ROM
- Strength
- Function
- Balance
- Do they reflect patient identified goals?

Muscle Strength

- 5 (Normal): Full resistance against gravity with complete ROM .
- 4 (Good): Some resistance against gravity with complete ROM
- 3 (Fair): Complete ROM against gravity .
- 2 (Poor): Complete ROM with gravity eliminated
- 1 (Trace): Evidence of slight contraction - no joint motion
- 0 (Zero): No evidence of contraction

Sprains

- Grade I: 0-25% damage: localized tenderness, a hard end feel and no instability
- Grade II: 35-50% damage: slight instability with compromised function, swelling
- Grade III: > 50% damage: instability with loss of functional integrity
  - Soft and/or indistinct end-feel will be noted on stress testing

Assessment

- A chance to update the link between the patient-identified functional limitations and the measured impairments
- Comment on changes in treatment goals
  - Did the patient meet a goal?
  - Are they making progress towards the goals?
  - Did any measurement get better?
  - Are the present diagnoses and services being rendered still appropriate?

Plan

- List all services that were provided & Rationale
  - CMT to L4- L5, ultrasound (1.5Hzcm^2) for 15 minutes to the right upper trapezius muscle, fitness ball therapeutic exercises to lumbar region for 10 minutes, etc.
  - Patient should continue treatment plan at 3 visits per week for another 2 weeks
  - Patient findings reveal the need for an MRI, EMG, CT scan, etc. (also an assessment).

Home Care Instructions:

- Be specific
  - i.e., ice: how much, how long, & how to apply
- Exercise instructions, be sure to include details such as the specific number of repetitions and sets
- Provide exercise sheets and handouts
- Have the patient sign and date forms you give them - give copy to patient.

Plan

- ✓ Patient should continue with prescribed exercises
- ✓ Patient must be on complete bed rest
- ✓ Patient should apply ice 3x per day
- ✓ Patient should return in 3 days
- ✓ Patient should be seen 2x next week

If applicable, end with “Patient tolerated the treatment well and without incident.”

Care Plan vs. SOAP Note (97110):

- Care Plan: The initial 12 visits will include therapeutic exercises with direct, one-on-one contact to the cervical region in both active assisted and passive approaches in order to increase range-of motion. Active assisted exercises will be performed in 2-3 sets of 10 in a pain free ROM with red Theraband CLX. Post isometric resistance passive activities will be performed 3 sets with a 10 second hold over the upper trapezius, suboccipital, and pectoralis muscles.

- SOAP Note: Therapeutic exercises to lumbar region for 15 minutes per care plan

Established E/M Services

- When the patient's condition or capacity to function substantively changes requiring an update to the Dx and plan of care
- Includes improvement, exacerbations, new condition and lack of response
- Revise the treatment plan and diagnosis if clinically indicated
- Some carriers expect monthly interim exams
- Discharge?

Lapse in Care?

- An updated E/M required
- Answer the HOW & WHY questions in your notes

Tele-Health

- Document:
  - Time
  - Reason for the encounter
  - Details of the encounter
  - Recommendations
- Possible coding options:
  - E/M, nutrition, consultation, active care

Tele-Health

- Best to use secure video w/ audio
- Have the patient check –in or call
- Carriers are expanding Tele-Health coverage during Covid-19

Social Media

- Obtain release and consent
- Avoid HIPPA breach

Additional Resources

- Don DeFabio, DC, DACBSP, DACRB, DABCO
  - Relevant Rehab Seminars
    - *Rational & Redefined*
    - www.DeFabioDifference.com
  - One on One Consulting
- TheraBand: www.TheraBand-Academy.com
- NCMIC
- You Tube: Dr DeFabio

Thank You!

Donald C. DeFabio, DC, DACBSP, DACRB, DABCO
DeFabioChiropractic@gmail.com
908-771-0220
www.DeFabioDifference.com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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!