

Postural Restoration
Physical Therapy Integration
Teeth to Toes

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Who Knew????

- * Malocclusions
- * Airway
- * Vision
- * Breathing
- * Foot orthotics

Shedding Light...

- Traditional PT/Postural Restoration
- Diaphragm *THE HIDDEN STAR * IO/TA
- Respiratory mechanics
- Neutrality (Joint position and respiration)
- FHP influences occlusion and beyond
- Reducing FHP-Whole Body Asymmetries via Respiratory mechanics and whole body patterns of exercise impacts mandibular position and occlusion.

Postural Restoration

- Explores and Explains
- Science of postural adaptations,
- Asymmetrical patterns
- The influence of polyarticular chains of muscles on the human body.

This treatment approach addresses the primary contributions of postural kinematic movement dysfunction.

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PRI trained physical therapists

- Common Integrated Patterns:
Stance
Extremity use
Respiratory Function
Vestibular Imbalance
Mandibular Orientation
Foot Dynamics.

PRI trained therapists

Body is not symmetrical:

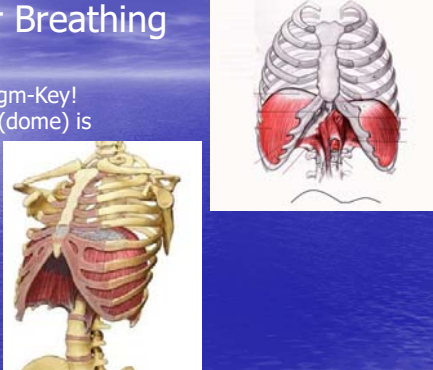
- Liver on the right
- Heart on the left
- Left brain dominant for language and speech so right UE dominant for communication/growth and development
- Left diaphragm smaller, tighter and weaker
- Leads to twist in trunk and anterior rotated left ilium

Liver

- Largest gland in the body (1.5 Kg)
- Lies in right upper quadrant
- Underlies the thoracic cage.
- Conforms to right dome of diaphragm
- Connected to the diaphragm by the falciform and coronary ligaments

Proper Breathing

- Diaphragm-Key!
"Bigger (dome) is Better"

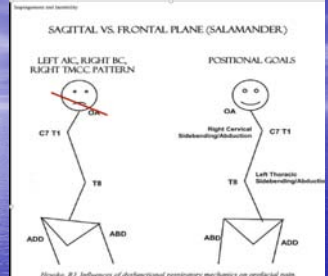


SAGITTAL VS. FRONTAL PLANE (SALAMANDER)

LEFT AC, RIGHT DC, RIGHT DAC PATTERN

POSITIONAL GOALS

Right side dominance



Hirata, R.J. Influence of dysfunctional respiratory mechanics on vertebral pain. Journal of Chiropractic of North America, April 1987, 41 (2): 211-217.

FRONTAL PLANE ADDUCTION
Right Sacrospinous Ligament
Left Abdominal Oblique

FRONTAL PLANE ABDUCTION
Right Abdominal Oblique, Med
Right Upper Trapezius
Right Sacrospinous Ligament (on right side/medial)

Advanced Integration - 2008 Course Manual

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Right Side Dominance/Habits




PRI trained physical therapists

- Normal imbalances must be regulated by reciprocal function during walking, breathing or turning.
- If not then a strong pattern emerges creating structural weaknesses, instabilities and musculoskeletal syndromes. (Teeth to Toes)
- Balancing muscle activity around the sacrum, sternum and sphenoid through PRI approach best positions multiple systems of the body for integrated function.

Forward Head Posture

- Promotes:
 - Pelvic floor and abdominal weakness
 - Imbalance of hyoid muscle
 - Hyperactive mandibular elevators, accessory respiratory muscle & posterior cranial rotators
 - Compression of occipital, upper cervical, temporal mandibular and sphenoid structure
 - Loss of obicularis oris
 - Limited mandibular opening
 - Structural imbalance of head & neck influencing centric occlusion & relation
 - Trigger point pain patterns



Act 2

- How we assess and refer

New Patient Evaluation

- Subjective report
- Medical history
- Previous treatment
- Medications
- Health/social history/ lifestyle/ work/ exercise
- Posture/Observation/ Gait
- Objective Tests and Ppecial Tests
- PRI Tests: classify patterns
- Functional evaluation/ Outcome measures
- ROM and strength
- Reflexes
- Pain/Palpation
- Shoe wear
- Eye wear
- Splint/ history of braces/ dental history
- Review diagnostic summary and consult from Dara Chira

Medical History Form

Medical History

Please answer each section below even if information seems unrelated to your current problem.

NECK/AN/HEAD:

- Do you experience facial pain or headaches? YES NO
- Do you feel a click, pop, or pain when you open or close your mouth? YES NO
- Do you feel pain in the front of your ear, or ear "fullness" or "ringing"? YES NO
- Have you ever been in a car accident? YES NO

VISION: Acuity (example 20/20) _____ YES NO

- Have you had an eye exam in the past year? YES NO
- Do you wear contacts or glasses? YES NO
- Do you wear bifocals/progressives? YES NO
- Do you sometimes bump into objects while walking? YES NO

FEET:

- Do you have pain on the bottom of your feet when you are standing? YES NO
- Do you have orthotics, heel lifts, or any other foot inserts in your shoes? YES NO

BREATHING:

- Do you smoke? YES NO
- Do you snore or wake up with a dry mouth? YES NO
- Do you have difficulty breathing with simple activity? (i.e., going up steps) YES NO
- Do you still feel tired after a full night of sleep? YES NO
- Do you have asthma? YES NO
- Have you been diagnosed with sleep apnea? YES NO

PELVIS:

- Do you ever experience small amounts of urine leakage when you cough, sneeze, laugh, lift or exercise? YES NO
- Do you ever experience small amounts of urine leakage associated with a strong sensation of needing to go to the bathroom? YES NO

PRI Evaluation Form

Objective Tests Neutrality/Position

- Adduction drop
- Apparent Leg length
- Trunk rotation
- Cervical spine rotation
- TMJ AROM
- Sternal/Rib angle
- Breathing pattern
- Rest position supine

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E. PARAFUNCTIONAL HABITS

1) "Posture is a complicity of the positions of all the joints of the body at any given moment. If a position is habitual, there will be a correlation between alignment and muscle tonus habits." - Thomas Myo

2) Most common (bad) habits:

- a. Standing on one leg
- b. Sleeping on one side
- c. Leg crossing always one way in sitting
- d. Resting trunk to the side of the non-dominant arm
- e. Poor sitting position
- f. Leading with head instead of upper chest when moving forward
- g. Sleeping on waist/feet
- h. Carrying shoulder
- i. Working in a compromised ergonomic zone

3) Poor reciprocal activity with upper extremities during gait

4) Resting training only accentuates the muscular and neurological contributions to the habitual imbalance. Most often the faulty reciprocal patterns are an exaggeration to one direction of

5) Recommended Reading: "The Power of Habit: Why We Do What We Do in Life and Business" by Charles Duhigg

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When to refer?

- Gayle
 - Dizziness
 - Headaches
 - GI issues
 - Fatigue
 - Amplified pain
 - Sxs not fully resolved
 - Can not maintain or achieve Neutral
- Dara
 - TMJ sx, HA
 - Airway
 - Occlusal
 - Tongue depressor test
 - Splint ck +
 - Can not maintain or achieve Neutral

Act 3

- Case studies

Jennifer: Non-pathological Patient




Visit 1: IE 8/17/17

Mand open 28mm Lat dev L 5mm R 10mm

Shoe wear



PRI Exercises



Pre rx



Mand open 28mm
L 5mm R 10 mm

Post Repos ex



Mand open 35mm
L 8mm R 10mm



"I can not believe those exercises changed my jaw motion!"

"How does shifting my knees do that???"

- Mandibular open- Pre 28mm / Post 35mm
- Mandibular L lat dev 5mm R 10 mm
- Post L lat dev 8mm R 10 mm

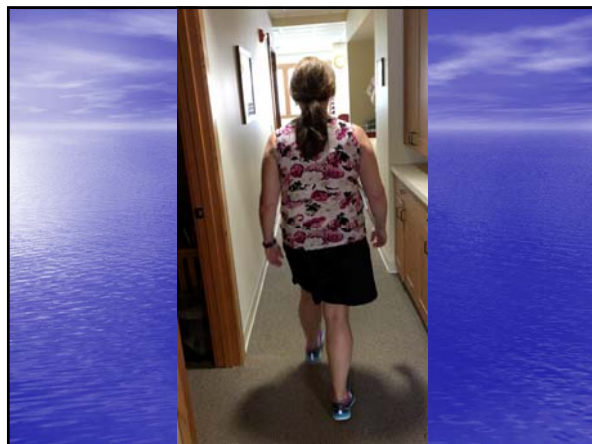


Gait Reciprocal Alternating

- Assessment
- Pelvis, hips
- Trunk
- Arm swing
- Ankle/foot

(Sphenoid, Sternum, Sacrum)

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Lisa T : Hypo-mobile Patient

5/18/17 First visit

- Objective findings- HYPO MOBILE throughout
- Mandibular opening 28mm
- Lat dev L-6mm/R-0mm
- Protrusion 1 mm
- AIRWAY MAJOR issue/ Hyper-inflated, could not tolerate being supine

Moving core down via Hamstrings-IO/TA

 Two side-view photographs of a woman sitting on a door frame. In the left photo, her feet are flat on the floor. In the right photo, her heels are on the floor.

Toes=extension Heels= flexion

Right stance Left stance

 Two side-view photographs of a woman standing in a room. The left photo shows her in a 'Right stance' and the right photo shows her in a 'Left stance'.

Turn Left- teeth to toes

Visit 3: 5/31/17

- Mand open 34mm (IE 28mm)
- Lat dev L 7mm R 5mm (R improving was 0mm)
- Rib sternal angle pre 110 post rx 100
- Improving trunk and brachial chain tests

Shoe wear

- "The new sneakers have made a big difference with my exercises!"

8/22/17 Visit 8
Rib/sternal angle IE 105°/90°



Neutral ZOA Neutral lumbopelvic

Airway

" I haven't used my Albuterol in a few months since starting the PT exercises!!"



Mandibular AROM

- Opening 34 mm (IE 28mm)
- Protrusion 5mm (IE 1MM)
- Lat deviation L 5mm R 5 mm (IE 6/0mm)
- (right very difficult motor control uses neck)
- Post final exs(SASSF)
- Bilateral Lat Dev 10mm
- No pulling on left TMJ.

Oral facial muscles

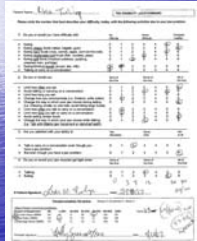
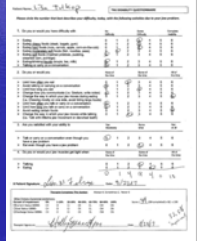
- Lip closure difficult with Emma rest position
- Good orbicularis oris control
- Good tongue protrusion
- Good tongue left and right upper molar
- Improved motor control ability for R lat dev after exercises.

SUBJECTIVE REPORT


- Patient notes she has not had clicking or popping in her jaw.
- She is much less fearful with talking and chewing
- Patient asked to pay attention to soft chew on left side.
- Integrating to left chew now that her mandibular AROM is normalizing and she can be in her left side.

TMJ Disability Questionnaire


5/18/17: 58% Impairment 8/22/17: 32.5%

Neck Core
Pre-exercise



Abdominal Core
Post-exercise



Visit 10 9/7/17

- Mand open pre 30mm post 35mm
- Lat dev pre B 8mm pull on left TMJ
- Lat dev post B 8mm no pull or pain left TMJ
- Good motor control with lat dev
- "Breathing is getting easier"
- " I feel I can breathe through my nose better"

Visit 11 9/19/17

- Pre-Treatment: 36 mm opening
- Post-Treatment: 40 mm opening
- Lateral deviation: 10 mm bilateral
- Chewing without pain
- No pain at rest
- Sleep is better
- Reported her pre-surgical braces in October

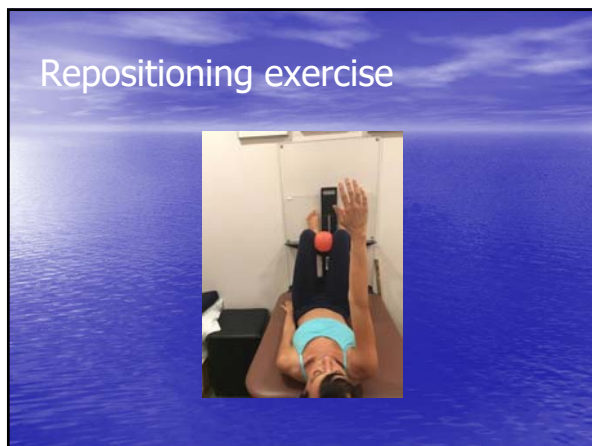
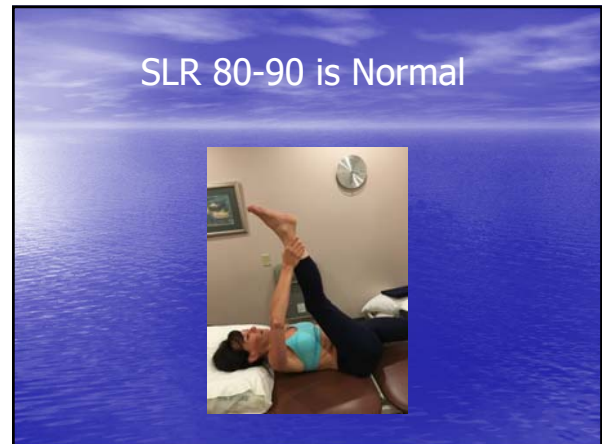
Visit 11 9/19/17

- Chewing food now (Apple)
- Sleep better
- Jaw movement better
- - CS SF, -OA SF, min + CS ext & L CS Rot
- Open Pre 36mm * Post 40mm
- B Lat dev 10mm pre and post
- Progressed Exs
- In great shape for next phase, Braces Oct

In-Office PRI PT Exercises for Lisa T







Pre and Post exercise



Mandibular open Pre 25mm post 28mm
No change lat dev.

2nd visit Jessica 8/7/17
"My exs are going well" I think yoga really messed me up"



Dara built up left posterior teeth prior to visit




CS rot L 65 R 85 Mand open 27mm
lat L10mm R8mm


2nd visit 8/7/17
Mand Open Pre 27- Post 30mm



1st visit 2nd visit




3rd Visit 8/31/17




Patient reports L click

- Left TMJ click with blowing, tongue right
- CS, TS, LS , Pelvis neutral, HADLT 4/5B
- Mand open 30mm
- Lat dev L10 R8mm Pro 5mm
- Unable to get lips together when relaxed (braces) What is from CS lack of core???


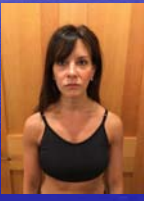
Lip seal



L click






Standing repositioning exs





Straw increase IO/TA, orbicularis oris activity
Decreases temporalis, masseter activity

Scapular Stabilization-IO/TA- Lumbo/Pelvic







Scapular-IO/TA-OA




Improves anterior cranial rotation- OA flex, mid cs lordosis, core (diaphragm/IO/TA fcn) resp mech!

More Scapular Stab-IO/TA-CS

Relaxed Lip Seal

No L Click with right lat dev No pain/tension left masseter

"The straw helped loosen my jaw, neck and face muscles"

4th visit pre Dara

- C/o Work Stress, Left side soft tissue issue pain, still no click
- Pre rx mand open 25mm -Post 32mm
- Pre ex lat dev L10/R6mm Post L10 R8mm
- Repos exs, left SL, D/C straw
- New sneakers!
- Pain 75 % reduced after exs

Supine active sacro-spheno flexion

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90 % reduction temporalis pain Lat dev L 10mm right 10mm " How does shifting my knees do that??"

Conclusion

- Our interventions are interrelated and the body functions as a whole system. TMD/Dental-Occlusal patients require a whole body multi disciplinary approach to treatment for optimal outcomes.

References

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THANK YOU !!

