

Postural Adaptations & Movement Patterns

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Mission Sports Medicine

Postural Restoration Institute

- ▶ What is the Postural Restoration Institute?
 - www.posturalrestoration.com
- ▶ PRI Mission
 - To explore postural adaptations and asymmetries and their influence on the polyarticular chains of the body

Disclaimer

- ▶ All pictures and diagrams were used with permission of the Postural Restoration Institute
- ▶ We are not representatives of the Postural Restoration Institute and do not receive any form of compensation from this presentation

Agenda

- ▶ Asymmetry
- ▶ Diaphragm / Respiration
- ▶ Polyarticular Chains
- ▶ Clinical Application

Asymmetry

“The human body is balanced through the integration of system imbalances.”

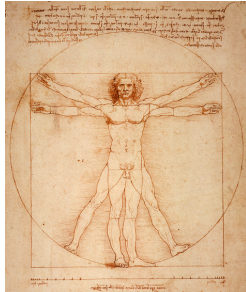
- ▶ Torso
 - Balanced through organ location
 - Liver on right, heart on left, etc.
- ▶ Extremity Dominance
 - Balanced through reciprocal function
 - GAIT - Right arm moves w/ left leg (vice versa)

Static Asymmetry

Right	Left
<ul style="list-style-type: none">▶ Diaphragm<ul style="list-style-type: none">◦ Attaches 1-2 lumbar levels lower than the left◦ Larger central tendon◦ Right dome (4th intercostal space)▶ Liver positioned in right abdominal cavity▶ 3 lobes of lung on right▶ Vagus nerve longer on right	<ul style="list-style-type: none">▶ Diaphragm<ul style="list-style-type: none">◦ Smaller central tendon◦ Left dome (5th intercostal space)▶ Heart positioned in left mediastinum▶ 2 lobes of lung on left▶ Vagus nerve shorter on left

Dynamic Asymmetry

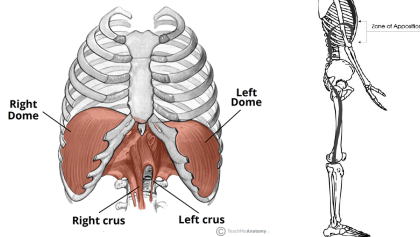
- ▶ Acquired dynamic dominance
- ▶ Greater ZOA at the right diaphragm
- ▶ Early development of strong unilateral reaction skills
- ▶ Motor area of left frontal lobe controls the contralateral side



Vitruvian Man by Leonardo da Vinci (c. 1490)

Diaphragm / Respiration

- ▶ Optimal vs Sub-Optimal ZOA



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Polyarticular Chains

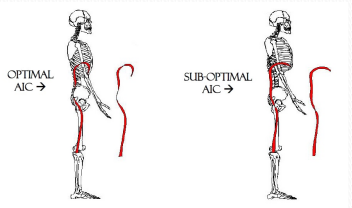


- ▶ Anterior Interior Chain
- ▶ Brachial Chain
- ▶ Posterior Exterior Chain
- ▶ Temporomandibular Cervical Chain

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Anterior Interior Chain

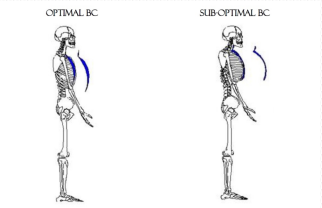
- ▶ Diaphragm
- ▶ Psoas
- ▶ Iliacus
- ▶ TFL
- ▶ Biceps Femoris
- ▶ Vastus Lateralis



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Brachial Chain

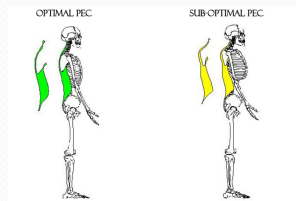
- ▶ Triangular Sterni
- ▶ Sternocleidomastoid
- ▶ Scalene
- ▶ Pectoralis Minor
- ▶ Intercostals
- ▶ Muscles of Pharynx
- ▶ Diaphragm



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Posterior Exterior Chain

- ▶ Latissimus Dorsum
- ▶ Quadratus Lumborum
- ▶ Posterior Intercostals
- ▶ Serratus Posterior
- ▶ Iliocostalis Lumborum



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Clinical Goals

- ▶ Reposition
- ▶ Retrain
- ▶ Restore Function



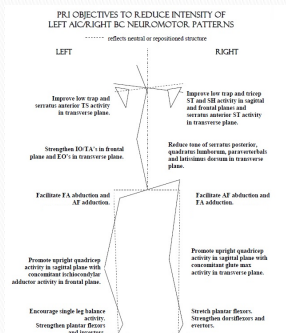
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Reposition

- ▶ **Position**
 - Triplanar position of any part of the body at any given time (static or dynamic)
 - "Neutral" Position
 - A state of the autonomic nervous system
 - Shifted toward parasympathetic but can freely alternate between sympathetic and parasympathetic states.
- ▶ **Reposition**
 - *Repositus* - to put back or replace
 - Sacrum, sternum, sphenoid at a physical and physiological state of rest

Restore Function

- ▶ **Function**
 - GAIT
- ▶ Left vs Right



Clinical Application

- ▶ Evaluation
- ▶ Clinical tests
- ▶ Non-manual techniques
- ▶ Manual techniques
- ▶ Reference centers

Evaluation / Clinical Testing

- ▶ **Adduction Drop Test**
- ▶ Hruska Adduction Lift Test (HALT)
- ▶ Straight Leg Raise Test
- ▶ Extension Drop Test
- ▶ Trunk Rotation Test
- ▶ Functional Squat Test
- ▶ HG IR/ABD/Flexion



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Non-Manual Techniques

- ▶ Unlike manual techniques
 - Hands off
 - Allow athletes to “find and feel” new position
- ▶ Use clinical tests to guide treatment plan
- ▶ Determine pattern
 - LAIC, RBC, PEC, RTMCC
- ▶ Create new pattern
- ▶ Retrain system

Reference Centers

▶ **Contact points AKA "Stabilization Centers"**

- Right medial longitudinal arch
- Left posterior calcaneal tuberosity
- Left ischial tuberosity
- Left anterior acetabular femoral capsule
- Left IO's / TA's / Posterior lower ribcage
- Right lateral posterior upper ribs
- Right scapula
- Tongue

QUESTIONS???

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