

# Group Exercise Applications for Training the Posterior Chain

## Session 5108

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The research on fascial chains (or lines) tells us that muscle and fascia are completely integrated and always function together passively, actively and under load and resistance. Come to this session and gain a greater understanding of how fascial line training can be applied in the group exercise setting and which specific exercises will optimize your students' performance with less risk of injury. We will focus on the posterior lines and provide exercises that will allow your back and glutes to function more effectively!

### Objectives

- Outline the pathway, the muscles involved and the function of the posterior lines
- Learn a series of effective exercises to target the posterior lines
- Work in a variety of planes to mimic function of the gluts and back
- Review important movement mechanics on common exercises that are necessary for higher levels of muscle recruitment

### What is Fascia?

- Fascia is not new. What is new is that we are considering it as a system
- Fascia is a term used for the connective tissue that wraps around organs, muscles, tendons and ligaments. It binds all the systems together in the body.
- Muscles and fascia completely integrate and always function together passively, actively and under load or resistance. Active movement causes changes in the chain Ex: Posterior Superficial Line
- Fascia is innervated with sensory receptors
- Fascia is the net (soft tissue webbing through the body) that organizes and holds together the water in the body (we are approximately 65% water) – orange analogy
- The fascia is why there is not a puddle of water at our feet
- Fascia has properties of mobility and stability called viscoelasticity and stiffness (combination of plastic and elastic properties)

## What Can Restrict Fascial Mobility?

- Insufficient hydration, Static postures (desk jockey), excessive training, daily emotional stress, insufficient sleep, anxiety, poor diet



Posterior functional line

### **Posterior Functional Line**

Pathway – runs from the shoulder, diagonally down across the back, and then down the front/back and side of the thigh

Muscles/structures – Latissimus Dorsi, lumbosacral fascia, gluteus max, vastus lateralis, and subpatellar tendon

Function – Connect the movements of shoulder to the opposite limb. Involved in throwing motions.



Posterior longitudinal sling

### **Posterior Longitudinal Sling**

Pathway – Runs up the hamstrings, through the pelvis, and along the muscles of the back

Muscles/structures – Erector Spinae, multifidus, thoracolumbar fascia and biceps femoris

Function – Assists in bringing the trunk to neutral position from forward flexion. Involved in jumping, KB swing and deadlift.



Superficial back arm line

## **Superficial Back Arm Line**

Pathway – Runs from the neck and the middle back, through the shoulder to the outside of the arm and the back of the hand

Muscles/structures – Trapezius, posterior deltoids, forearm extensors, hand and fingers

Function – Connects the limbs to the axial skeleton and performs shoulder extension, horizontal adduction and scapular movements



Posterior oblique sling

## **Posterior Oblique Sling**

Pathway – Runs from the back, across the midline, to the back of the opposite thigh

Muscles/structures – Latissimus Dorsi, Gluteus Maximus, Biceps Femoris

Function – Provides stability and power turning rotational movements, connects the movements of the upper and lower limbs through the torso.

\*\*Similar to the Posterior Functional Line



Posterior superficial line

## **Posterior Superficial Line**

Pathway – Runs from the bottom of the foot, up through the calves, hamstrings, lower back and then along the spinal extensors to the fascia of the scalp and forehead

Muscles/structures – Plantar fascia, gastrocnemius, ischial tuberosity, hamstrings, thoracolumbar fascia, erector spinae and scalp/forehead fascia

Function – Helps the body maintain posture and spinal extension movements. Tension in this line can restrict forward bending or cause locking in the knees or compression of lumbar spine.

## **Movement Mechanics**

We know that squats and lunges are excellent at engaging the gluts providing they are taught and executed correctly. In large compound exercises, the body will compensate for a lack of strength and mobility. Therefore, we need to ensure we establish a good base of technique and use appropriate progressions in order to ensure client success.

- Squat Technique Review
  - Pitching due to lack of ankle mobility - overhead squat or See wall squat
  - Knees over Toes
  - Increase in Lumbar spine
  
- Lunge Technique Review
  - Vertical Shin (therefore good for those that do pitch)
  - Forward Hinge body position to maximize hip loading mechanics
  - Progressions – which lunge is the best to start with?



- Deadlifts
  - Spinal Flexion through movement
  - Knees Bent or Extended
  - Static versus Dynamic – Bentover positions in exercises

## The Exercises

### Warm up

- Static RDL/LDL and reach
- Downdog/updog
- Plank
- Overhead squat with Reach
- Lunge prep
- Coreboard Lunge

### Strength

- 1) Overhead Squat with Band
- 2) Bulgarian Lunge with Shoulder Girdle Packing
- 3) Renegade Row  Plank Protraction
- 4) Death March
- 5) DB Swing
- 6) I, T, Y, W Shoulder Complex
- 7) Prone Hip Extension
- 8) Squat to heel raise with Step
- 9) Band Glut Press
- 10) Low Trap Dip
- 11) Bentover Kickback hip extension
- 12) Multifidus Quadraped – Lift opposite knee and hand to hover
- 13) Bridge on Step with Heel Raise  1 Leg option
- 14) RDL with 1 arm row (unilateral)
- 15) Butt Blaster with Band

- 16) Five cone touch → add rotation
- 17) QL Back Extension
- 18) Multifidus hip hike supine

### **Partner Band**

- 1) Paloff Press → Lunge (lateral side to partner)
- 2) Partner Lateral Flexion with hands overhead

### **Fascial Flow** – \*\*fascia is hydrated by movement (dynamic)

- 1) Forward Fold → Flex/Extend knees → Roll up and Extend
- 2) Quadraped Cat/Cow → Childs Pose → Add Arm line: thread arm under
- 3) Down dog → Anterior/Posterior Tilt → Flex/Extend Knees
- 4) Seated Hinge → Flex/Extend knees → Dorsiflex/Plantarflex Ankles
- 5) Core 3 on Floor

### **References**

- 1) Myers, T.W. 2014. Anatomy Trains: Myofascial Meridians for Manual and Movement Therapies. 3<sup>rd</sup> ed. London: Elsevier Health Science
- 2) Canfitpro 2016. Foundations of Professional Personal Training. 2<sup>nd</sup> ed. Champaign, IL: Human Kinetics