

Integrated Hip & Core Training

EXERCISE
ETC. INC.



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How to Get Your CE Certificates

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- Click on "Administration"
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- Your CE certificate will appear on the screen; you may either save or print your certificate; even if you do not have a working printer, make sure to complete this form
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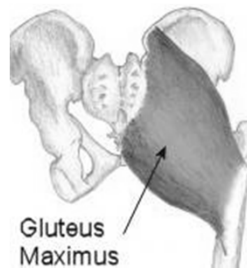
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REMINDER:

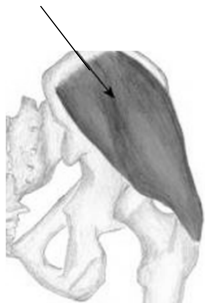
Obtain medical clearance and physician's release prior to beginning an exercise program for clients with medical or orthopedic concerns.

Function of the Gluteus Maximus

- Accelerates Hip Extension & External Rotation
- Decelerates Femoral Internal Rotation & Extension
- Upper Fibers Abduct & Lower Fibers Adduct the hip



Function of the Gluteus Medius



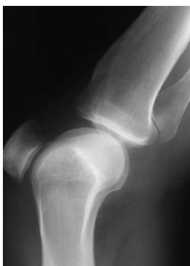
- Accelerates Hip Abduction
- Decelerates Hip Adduction
- Stabilizes Hip in Neutral Standing

A Link in the Posterior Chain

- Controls Gait
- Stabilizes the SI Joints
- Stabilizes the Pelvis
- Accelerates & Decelerates Trunk Rotation



Musculoskeletal Injuries & Glutes



- Plantar Fascitis
- Shin Splints
- Knee & Hip Pain
- Non-Contact ACL Injuries
- SI Joint Dysfunction
- Low Back Pain
- Rotator Cuff Injury

Lack of Gluteal Activity in Gait

- Leads to excessive pronation in stance phase, poor control of knee extension, weakness during push-off
- Compensations leads to overuse of Hamstrings, Quadriceps, Erector Spinae, Soleus, Gastrocnemius, and Anterior Tibialis



Impact of Dysfunction on Knees



- Increased external rotation of knee stretches knee ligaments, potentially damages Menisci and articular cartilage
- Women with PFPS were 26% weaker in hip abduction and 36% weaker in hip external rotation
- Increased risk of ACL injury

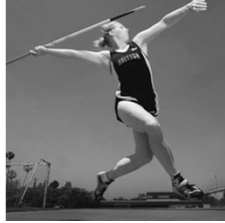
Glute Dysfunction in Low Back Pain



- Role in Posture
- Gluteal muscles help absorb vertical ground reaction forces (GRF)
- Excessive lumbar extension to compensate for poor hip flexibility

Shoulder Dysfunction

- Failure to accelerate trunk rotation
- Failure to decelerate trunk rotation



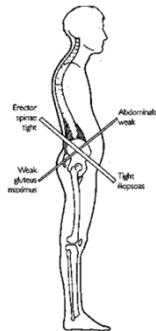
What Causes Gluteal Dysfunction?



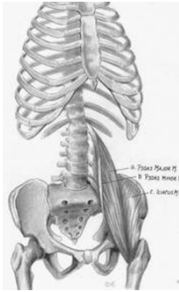
- Sitting or standing too long over time
- Severe ankle sprain?
- Back injury
- Weak "core"
- Trigger Points
- Disuse

The Lower-Crossed Syndrome

- Vladimir Janda
- Anterior Pelvic Tilt
 - Short, Tight Psoas
 - Long, **Inhibited Gluteus Maximus**
 - Short, Tight Erector Spinae
 - Long, **Inhibited Rectus Abdominus**, External Oblique, TVA



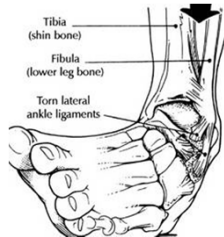
Reciprocal Inhibition by Psoas?



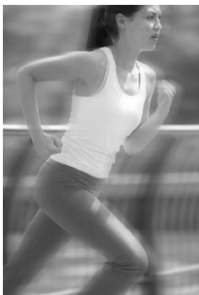
- Psoas pulls femur into external rotation and flexion
- Tightness in psoas inhibits gluteus maximus
- Increased recruitment erector spinae inhibits rectus abdominus & TVA
- Hamstrings work to extend the hip

Ankle Injuries ↓ Glute Activation

- Ankle sprains result in delayed activation of Gluteus Maximus bilaterally, in turn compromising pelvic stability and leading to compensations
 - Bullock-Saxton, et al (1994)



Back Pain



- Altered patterns of hip extensor recruitment and lumbo-pelvic rhythm
 - Leinonen et al (2000)
- Glutes fatigue more quickly due to atrophy from disuse
 - Kankaanpää et al (1998)

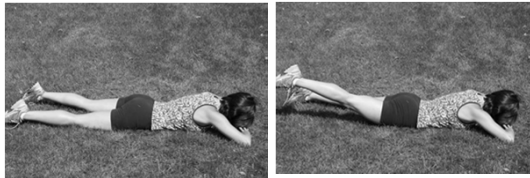
Identifying Glute Dysfunction



- McGill's Bridge Assessment
- Determining Muscle Firing Order
- Trendelenburg's Sign
- Trigger Points

Prone Hip Extension Assessment

- Start in Prone Lying
- Extend Hip and Hold
- Glute Should Fire 1st



Weakness in Glute Medius

- Trendelenburg's Sign
- Indicates Abductor Weakness on the Stance Side



Neuromuscular Reprogramming

- Activate Glutes with Isometrics
- Retrain Glutes Functionally in all 3 Planes of Motion



Regularly Stretch Psoas

- A tight psoas is one "cause" of gluteus maximus dysfunction
- Stretching the psoas regularly is essential to reversing the Anterior Pelvic Tilt
- Dynamic stretching in all 3 planes of motion with respect to the Anterior "Line" of the body



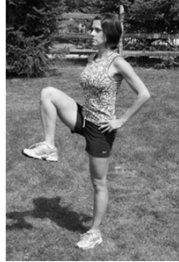
Stretch Rectus/Quadriceps Femoris



- Rectus Femoris is often neglected in favor of stretching Psoas to correct Anterior Pelvic Tilt
- Stretch RF regularly
- Incorporate Glute contraction with stretch to stabilize pelvis

Activate Psoas

- Standing Single Knee to Chest
- Hold 15 Seconds



Reawakening Exercises

- Clamshell Exercise
- Hip Abduction
- Hip Adduction
- Bridging
- Proprioception Exercise



“The Clamshell Exercise”



- Hip Lateral Rotation with Knees Flexed
- Generate awareness upon palpation of glute medius during hip rotation

Prone & Supine Buttocks Squeeze

- Begin Lying Prone
- Isometrically Contract Buttocks
- Hold 5-10 Seconds
- Repeat
- Perform in Supine Bridge Position



Side Lying Hip Adduction



- Lower portion of Gluteus Maximus is a Hip Adductor
- Extend the Active Hip while Adducting to best engage Glutes
- Progress to standing Hip Adduction with Extension
 - PNF Patterns
- Forget the Hip Adduction Machine!

Hip Abduction Training

- Begin with Side-Lying Hip Abduction Isometrics and
- Progress to Dynamic Hip Abductor Activities using Elastic Rings



Single Leg Squat or Deadlift



Better Lunges for Better Buns

- The “Glute” Lunge
 - Hip Dominant Variation



Lateral Lunging



Core Training Past 50



Integrated Core Strengthening



- Squats, Deadlifts & Single Leg Variations
- Contra-Lateral Dumbbell
- Hypertrophy-to-Strength-to-Power
- Contraction should occur early during lifts to provide pelvic stability

Infusing "Core" Into Training

- Incorporate select core activities into cardio, strength and balance training.



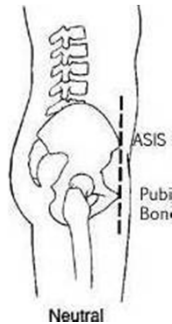
The Function of the Core



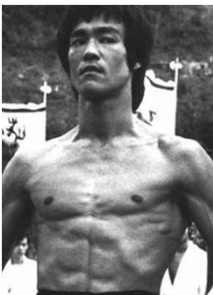
- To create and sustain sufficient *intra-abdominal pressure* to counteract compressive forces resulting from axial loading
- To resist forces that move the spine out of its preferred neutral position

Keeping Your Core in Neutral

- Awareness
- Range of Motion to achieve the correct position
- Strength/Stamina to maintain the position
- Coordination to hold the position during dynamic movements



Building Your Own Belt



- Bracing optimizes stability during compressive loading
- Contract all of the muscles in the abdominal wall, low back and hips without drawing in or pushing out the belly
- Enhances and sustains intra-abdominal pressure

Stability Before Mobility

"Don't let the perfect become the enemy of the good."

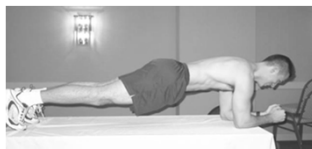


- Isometric exercises in "core"-neutral position precede dynamic exercises designed to stress the "core"
- Hold static contractions for ~7 seconds
- Repeat up to 5 times

Plank

- Progressions:

- Incline Position
- Push-Up Position
- Feet Wide, Elbows Narrow
- Neutral
- One Leg Up
- Opposite Arm/Leg Up
- Full Extension



- Tips:

- Abduct Scapulae
- Tighten ALL anterior muscles

Back Bridging

- Butt Squeeze
- Single Leg
 - Alternating
- Swiss Ball



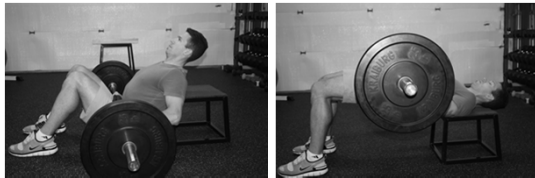
How Strong is Your Bridge?

Barbell Hip Thrust



Thrust hips vigorously, immediately dropping hips to ground to avoid impact by the barbell and repeat. Note: Thick Bar Pad is essential

Barbell Glute Bridge



Cardio Training for Your Glutes



- Gluteal Activation by Popular Cardio Activity
 - Treadmill (jogging): 48.9%
 - Elliptical: 32.6%
 - Treadmill (walking): 24.3%
 - StairMaster: 24.0%
 - Recumbent Bike: 6.0%

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